



RWANDA UTILITIES REGULATORY AUTHORITY (RURA)

NATIONAL FREQUENCY ALLOCATION TABLE

FOR

THE REPUBLIC OF RWANDA

February 2022

GENERAL NOTES

1. Introduction

The frequency allocations contained in the Rwandan National Frequency Allocation Table are derived from the international frequency allocations of Article 5 of the International Telecommunication Union (ITU) Radio Regulations. The Radio Regulations are revised by the ITU World Radiocommunication Conference, normally held every 3 to 4 years and have ITU treaty status. [Where possible the frequency allocations have been harmonised with neighbouring countries to facilitate the coordination along the borders in line with regional harmonisation agreements of EAC and COMESA].

2. Contents

The attached Table comprises columns containing the following information:-

- 2.1. The international frequency allocations for ITU Region 1
- 2.2. The national frequency allocations for the Republic of Rwanda
- 2.3. Actual/designated utilisations of the frequency allocations in Rwanda
- 2.4. Comments to each frequency allocation

3. Amendments

3.1. The International allocations are amended whenever necessary to accord with any changes to the Radio Regulations made by World Radiocommunication Conferences of the International Telecommunication Union.

3.2. The Rwandan allocations are also amended as a result of World Radiocommunication Conferences, but also periodically as a result of RURA consultations and decisions, inter-regional agreements or changes in RURA licensing policy.

4. Basic Provisions

4.1. The Rwandan Frequency Allocation Table draws its legal status from the Law n° 24/2016 of 18/06/2016 governing information and communication technologies.

4.2. Direct references have been made within the Rwandan frequency allocations to those footnotes to the International frequency allocations which apply without qualification or have limited application to the Rwandan radio services or frequency bands concerned. All remaining International footnotes not specifically mentioned in the Rwandan frequency allocations or in footnotes thereto do not therefore apply in Rwanda.

4.3. The Rwandan frequency allocations table thus qualifies the provisions of the International frequency allocations; it also makes additional provisions for domestic frequency requirements which are not appropriate in the International frequency allocations; and it provides the framework within which frequency assignments are to be made for all services. The provisions of the Rwandan Table shall therefore be applied to all radio services, civil and military, transmitting or receiving within the territory of the Republic of Rwanda.

4.4. Where the provisions of the international frequency allocations and the Rwandan frequency allocations differ, those of Rwanda shall apply.

5. Conventions

5.1. The following conventions are employed in the Frequency Allocation Tables:

5.1.1. Where in both the International column and the Rwandan column a frequency band is allocated to more than one radio service, the names of such services are listed in the following order:-

**PRIMARY services - printed in Upper case (capitals);
SECONDARY services - printed in lower case.**

5.1.2. In addition to the above, where a frequency band is allocated to two or more services of equal status, the names of such services are listed in alphabetical order. This order of listing does not confer any precedence upon radio services which are of equal status.

5.1.3. Stations of a secondary service:

- 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;
- 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;
- 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. Footnotes

6.1. Where footnotes are employed the following rules apply:

6.1.1. Where a footnote is printed on the same line as the name of a radio service the footnote applies only to that service.

6.1.2. Where a footnote is printed below the radio services listed and not on the same line as a radio service, the footnote applies to that band or some part thereof.

6.1.3. Footnotes in the International column are identified in and below those column entries by a number, eg '5.123'. Where references are made in or below the Rwandan column entries to these International footnotes, they are similarly identified.

6.1.4. National footnotes to the Rwandan column are always identified by the prefix 'RW' – e.g. 'RW1'.

7. Definitions

7.1. The following general and service definitions apply.

7.1.1. *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.

7.1.2. *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.

7.1.3. *additional allocation*: 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.

7.1.4. *alternative allocation*: 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.

7.1.5. *assignment* (of a radio frequency or radio frequency channel): Authorisation given by an administration for a radio station to use a radio frequency or radio frequency channel under specified conditions.

7.1.6. *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.

7.1.7. *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.

7.1.8. *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.

7.1.9. *radiocommunication service*: A service involving the transmission, emission and/or reception of radio waves for specific telecommunication purposes. Unless otherwise stated, any radiocommunication service relates to terrestrial radiocommunication.

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

7.1.11. *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.

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

7.1.13. *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.

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

7.1.15. *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.

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

7.1.17. *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.

7.1.18. *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.

7.1.19. *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.

7.1.20. *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. (R) signifies Route.

7.1.21. *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. (OR) signifies Off-Route.

7.1.22. *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.

7.1.23. *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. (R) signifies Route.

7.1.24. *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. (OR) signifies Off-Route.

7.1.25. *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 (CS).

7.1.26. *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.

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

7.1.28. *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.

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

7.1.30. *radionavigation-satellite service*: A radiodetermination-satellite service used for the purpose of radionavigation. This service may also include feeder links necessary for its operation.

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

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

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

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

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

7.1.36. *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.

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

7.1.38. *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.

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

7.1.40. *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.

7.1.41. *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.

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

7.1.43. *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.

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

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

7.1.46. *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.

7.1.47. *short range devices (SRD)*: radio transmitters which provide either unidirectional or bi-directional communication and which have low capability of causing interference to other radio equipment. SRDs use either integral, dedicated or external antennas and all modes of modulation can be permitted subject to relevant standards. SRDs are not considered a radiocommunication service under the ITU Radio Regulations.

8. Abbreviations used in the Table

AM	Amplitude Modulation
BS	Broadcasting Service
BSS	Broadcasting Satellite Service
CAA	Civil Aviation Authority
CISPR	Comité International Spécial des Perturbations Radioélectriques
COMESA	Common Market for Eastern and Southern Africa
dB μ A/m	decibels relative to 1 microampere per metre magnetic field strength
EAC	East African Community
E-GSM	Extended Global System for Mobile Communications
erp	effective radiated power
eirp	equivalent isotropically radiated power
FM	Frequency Modulation
FS	Fixed Service
FSS	Fixed Satellite Service
FWA	Fixed Wireless Access
FWS	Fixed Wireless Systems
GHz	gigahertz, 10 ⁹ hertz (cycles per second)
GNSS	Global Navigation Satellite Service
GPS	Global Positioning System
GSM	Global System for Mobile Communications
HDFS	High Density Fixed Service
HDFS	High Density Fixed Satellite Service
HF	High Frequency (3 MHz – 30 MHz)
IEC	International Electrotechnical Commission
ILS	Instrument Landing System
ISM	Industrial, Scientific and Medical

kHz	kilohertz, 10 ³ hertz (cycles per second)
IMT	International Mobile Telecommunications
ITU	International Telecommunication Union
ITU-R	ITU Radiocommunication Sector
LBT	Listen Before Talk
LMSS	Land Mobile Satellite Service
MHz	megahertz, 10 ⁶ hertz (cycles per second)
MS	Mobile Service
MSS	Mobile Satellite Service
mW	milliwatts, 10 ⁻³ Watts, radio frequency unit of power
NGO	Non-Governmental Organisation
nW	nanowatts, 10 ⁻⁹ Watts radio frequency unit of power
OB/ENG	Outside Broadcast/Electronic News Gathering
PAMR	Public Access Mobile Radio
PMR	Private Mobile Radio
PMSE	Programme Making & Special Event
RF	Radio Frequency
RURA	Rwanda Utilities Regulatory Agency
RW	Rwandan footnote
SAB	Services Ancillary to Broadcasting
SAP	Services Ancillary to Programme Making
S-DAB	Satellite Digital Audio Broadcasting
SRD	Short Range Device
STL	Studio to Transmitter Link
T-DAB	Terrestrial Digital Audio Broadcasting
Tx	Transmitter
UMTS	Universal Mobile Telecommunications System
UHF	Ultra High Frequency (300 MHz – 3 GHz)
VHF	Very High Frequency (30 – 300 MHz)
VSAT	Very Small Aperture Terminal
WRC	World Radiocommunication Conference
WiMAX	Worldwide Interoperability for Microwave Access
WLAN	Wireless Local Area Network
W/m ²	Watts per square metre, measure of RF power flux density

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
Below 8.3 kHz (Not allocated) 5.53 5.54	Below 8.3 kHz (Not allocated) 5.53 5.54	No usage	
8.3-9 kHz METEOROLOGICAL AIDS 5.54A 5.54B 5.54C	8.3-9 kHz METEOROLOGICAL AIDS 5.54A	meteorological aids	Region 1 allocation (Rev. WRC-12)
9-11.3 kHz METEOROLOGICAL AIDS 5.54A RADIONAVIGATION	9-11.3 kHz METEOROLOGICAL AIDS 5.54A RADIONAVIGATION	meteorological aids and Radionavigation service	Region 1 allocation (Rev. WRC-12)
11.3-14 kHz RADIONAVIGATION	11.3-14 kHz RADIONAVIGATION	Radionavigation service	Region 1 allocation (Rev. WRC-12)
14-19.95 kHz FIXED MARITIME MOBILE 5.57 5.55 5.56	14-19.95 kHz FIXED 5.56	Fixed service users	Region 1 allocation
19.95-20.05 kHz STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	19.95-20.05 kHz STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	Standard Frequency and Time Signal (20 kHz)	Region 1 allocation
20.05-70 kHz FIXED MARITIME MOBILE 5.57 5.56 5.58	20.05-70 kHz FIXED 5.56	Fixed service users	Region 1 allocation
70-72 kHz RADIONAVIGATION 5.60	70-72 kHz RADIONAVIGATION 5.60	Radionavigation service	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
72-84 kHz FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60 5.56	72-84 kHz FIXED RADIONAVIGATION 5.60 5.56	Fixed service users Radionavigation service	Region 1 allocations
84-86 kHz RADIONAVIGATION 5.60	84-86 kHz RADIONAVIGATION 5.60	Radionavigation	Region 1 allocation
86-90 kHz FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.56	86-90 kHz FIXED RADIONAVIGATION 5.56	Fixed service users Radionavigation service	Region 1 allocations
90-110 kHz RADIONAVIGATION 5.62 Fixed 5.64	90-110 kHz RADIONAVIGATION 5.62 Fixed 5.64	Radionavigation service	Region 1 allocation
110-112 kHz FIXED MARITIME MOBILE RADIONAVIGATION 5.64	110-112 kHz FIXED RADIONAVIGATION 5.64	Fixed service users Radionavigation service	Region 1 allocations
112-115 kHz RADIONAVIGATION 5.60	112-115 kHz RADIONAVIGATION 5.60	Radionavigation service	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
115-117.6 kHz RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64 5.66	115-117.6 kHz RADIONAVIGATION 5.60 Fixed 5.64	Radionavigation service	Region 1 allocation
117.6-126 kHz FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	117.6-126 kHz FIXED RADIONAVIGATION 5.60 5.64	Fixed Service users Radionavigation service	Region 1 allocations
126-129 kHz RADIONAVIGATION 5.60	126-129 kHz RADIONAVIGATION 5.60	Radionavigation service	Region 1 allocation
129-130 kHz FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	129-130 kHz FIXED RADIONAVIGATION 5.60 5.64	Fixed service users Radionavigation service	Region 1 allocations
130-135.7 kHz FIXED MARITIME MOBILE 5.64 5.67	130-135.7 kHz FIXED 5.64	Fixed service users	Region 1 allocation
135.7-137.8 kHz FIXED MARITIME MOBILE Amateur 5.67A 5.64 5.67 5.67B	135.7-137.8 kHz FIXED Amateur 5.67A 5.64	Fixed service users	Region 1 allocation
137.8-148.5 kHz FIXED MARITIME MOBILE	137.8-148.5 kHz FIXED 5.64	Fixed service users	Region 1 allocation

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ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5.64 5.67			
148.5-255 kHz BROADCASTING 5.68 5.69 5.70	148.5-160 kHz BROADCASTING 5.68	Broadcasting service	Region 1 allocation
	160-200 kHz FIXED 5.68	Fixed service users	Region 1 allocation
	200-283.5 kHz AERONAUTICAL RADIONAVIGATION	Aeronautical radionavigation service	Region 1 allocation RADIONAVIGATION Authorised to operate on a primary basis
255-283.5 kHz BROADCASTING AERONAUTICAL RADIONAVIGATION 5.70			
283.5-315 kHz AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73 5.72 5.74	283.5-315 kHz AERONAUTICAL RADIONAVIGATION 5.74	Aeronautical radionavigation service	Region 1 allocation
315-325 kHz AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radiobeacons) 5.73 5.72 5.75	315-325 kHz AERONAUTICAL RADIONAVIGATION	Aeronautical radionavigation service	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
325-405 kHz AERONAUTICAL RADIONAVIGATION 5.72	325-405 kHz AERONAUTICAL RADIONAVIGATION	Aeronautical radionavigation service	Region 1 allocation
405-415 kHz RADIONAVIGATION 5.76 5.72	405-415 kHz RADIONAVIGATION 5.76	Radionavigation service	Region 1 allocation
415-435 kHz MARITIME MOBILE 5.79 AERONAUTICAL RADIONAVIGATION 5.77 5.72	415-435 kHz AERONAUTICAL RADIONAVIGATION	Aeronautical radionavigation service	Authorized usage of NAVDAT* in bands 415- 495 (WRC-19)
435-472 kHz MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.77 5.72 5.82	435-495 kHz AERONAUTICAL RADIONAVIGATION 5.72 5.82	Aeronautical radionavigation service	Authorized usage of NAVDAT* in bands 415- 495 (WRC-19)
472-479 KHz MARITIME MOBILE 5.79 Amateur 5.A123 Aeronautical radionavigation 5.77 5.80 5.72 5.80B 5.82	472-479 kHz AERONAUTICAL RADIONAVIGATION 5.77 5.80 5.72	Aeronautical radionavigation service	National allocation (rev. WRC-12) Authorized usage of NAVDAT* in bands 415- 495 (WRC-19)

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
479-495 kHz MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.77 5.72 5.82	479-495 kHz AERONAUTICAL RADIONAVIGATION 5.77 5.72	Aeronautical radionavigation service	National allocation Authorized usage of NAVDAT* in bands 415- 495 (WRC-19)
495-505 kHz MARITIME MOBILE 5.A18	495-505 kHz MOBILE 5.82A 5.82B	Mobile service	Region 1 allocation Authorized usage of NAVDAT* in bands 495- 505KHz (WRC-19)
505-526.5 kHz MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION 5.72	505-526.5 kHz AERONAUTICAL RADIONAVIGATION 5.72	Aeronautical radionavigation service	Authorized usage of NAVDAT* in bands 505- 526.5KHz (WRC-19)
526.5-1 606.5 kHz BROADCASTING 5.87 5.87A	526.5-1 606.5 kHz BROADCASTING	MW Sound broadcasting service (GE75 plan)	Region 1 allocation
1 606.5-1 625 kHz FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	1 606.5-1 625 kHz FIXED LAND MOBILE 5.92	1 606.5-1 615.5 kHz Fixed users	Region 1 allocation
		1 615.5-1 625 kHz Land mobile users	Region 1 allocation
1 625-1 635 kHz RADIOLOCATION	1 625-1 635 kHz RADIOLOCATION	Radiolocation service	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5.93			
1 635-1 800 kHz FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92 5.96	1 635-1 800 kHz FIXED LAND MOBILE 5.92	1 635-1 725 kHz Fixed users	Region 1 allocation
		1 725-1 800 kHz Land mobile users	National allocation
1 800-1 810 kHz RADIOLOCATION 5.93	1 800-1 810 kHz RADIOLOCATION	Radiolocation service	Region 1 allocation
1 810-1 850 kHz AMATEUR 5.98 5.99 5.100 5.101	1 810-1 850 kHz AMATEUR	Amateur service (160 metre band)	Region 1 allocation
1 850-2 000 kHz FIXED MOBILE except aeronautical mobile 5.92 5.96 5.103	1 850-2 000 kHz FIXED LAND MOBILE RW3 5.92 5.103	1 850-1925 kHz Fixed users	Region 1 allocation
		1 925-2 000 kHz Land mobile users	National allocation
2 000-2 025 kHz FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	2 000-2 025 kHz FIXED LAND MOBILE RW3 5.92 5.103	2 000-2 010 kHz Fixed users	Region 1 allocation
		2 010-2 025 kHz Land mobile users	National allocation

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ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
2 025-2 045 kHz FIXED MOBILE except aeronautical mobile (R) Meteorological aids 5.104 5.92 5.103	2 025-2 045 kHz FIXED LAND MOBILE RW3 Meteorological aids 5.104 5.92 5.103	2 025-2 035 kHz Fixed users	Region 1 allocation
		2 035-2 045 kHz Land mobile users	National allocation
2 045-2 160 kHz FIXED MARITIME MOBILE LAND MOBILE 5.92	2 045-2 160 kHz FIXED LAND MOBILE 5.92	2 045-2 100 kHz Fixed users	Region 1 allocation
		2 100-2 160 kHz Land mobile users	National allocation
2 160-2 170 kHz RADIOLOCATION 5.93 5.107	2 160-2 170 kHz RADIOLOCATION	Radiolocation service	Region 1 allocation
2 170-2 173.5 kHz MARITIME MOBILE	2 170-2 173.5 kHz MARITIME MOBILE	Maritime mobile service	Region 1 allocation
2 173.5-2 190.5 kHz MOBILE (distress and calling) 5.108 5.109 5.110 5.111	2 173.5-2 190.5 kHz MOBILE (distress and calling) 5.108 5.109 5.110 5.111	Mobile (distress and calling) service	Region 1 allocation
2 190.5-2 194 kHz MARITIME MOBILE	2 190.5-2 194 kHz MARITIME MOBILE	Maritime mobile service	Region 1 allocation
2 194-2 300 kHz FIXED	2 194-2 300 kHz FIXED	2 194-2 250 kHz Fixed users	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
MOBILE except aeronautical mobile (R) 5.92 5.103 5.112	LAND MOBILE RW3 5.92 5.103	2 250-2 300 kHz Land mobile users	National allocation
2 300-2 498 kHz FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.103	2 300-2 498 kHz FIXED LAND MOBILE RW3 BROADCASTING 5.113 5.103	Fixed service users Land mobile service Broadcasting service	Region 1 and national allocations
2 498-2 501 kHz STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	2 498-2 501 kHz STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	Standard frequency and time signal service (2 500 kHz)	Region 1 allocation
2 501-2 502 kHz STANDARD FREQUENCY AND TIME SIGNAL Space Research	2 501-2 502 kHz STANDARD FREQUENCY AND TIME SIGNAL Space Research	Standard frequency and time signal service	Region 1 allocation
2 502-2 625 kHz FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.114	2 502-2 625 kHz FIXED LAND MOBILE RW3 5.92 5.103	2 502-2570 kHz Fixed users	Region 1 allocation
		2 570-2 625 kHz Land mobile users	National allocation
2 625-2 650 kHz MARITIME MOBILE MARITIME RADIONAVIGATION 5.92	2 625-2 650 kHz MARITIME MOBILE MARITIME RADIONAVIGATION 5.92	Maritime mobile service Maritime radionavigation service	Region 1 allocations

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ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
2 650-2 850 kHz FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	2 650-2 850 kHz FIXED LAND MOBILE RW3 5.92 5.103	2 650-2 750 kHz Fixed users	Region 1 allocation
		2 750-2 850 kHz Land Mobile users	National allocation
2 850-3 025 kHz AERONAUTICAL MOBILE (R) 5.111 5.115	2 850-3 025 kHz AERONAUTICAL MOBILE (R) 5.111 5.115	Aeronautical Mobile (R) service	Region 1 allocation
3 025-3 155 kHz AERONAUTICAL MOBILE (OR)	3 025-3 155 kHz AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (OR) service	Region 1 allocation
3 155-3 200 kHz FIXED MOBILE except aeronautical mobile (R) 5.116 5.117	3 155-3 200 kHz FIXED LAND MOBILE RW3 5.116	3 155-3 165 kHz Fixed users	Region 1 allocation
		3 165-3 200 kHz Land mobile users	National allocation
3 200-3 230 kHz FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	3 200-3 230 kHz FIXED LAND MOBILE RW3 BROADCASTING 5.113 5.116	Fixed service users Land mobile service Short wave sound broadcasting	Region 1 and national allocations
3 230-3 400 kHz FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116 5.118	3 230-3 400 kHz FIXED LAND MOBILE RW3 BROADCASTING 5.113 5.116 5.118	Fixed service users Land mobile service Short wave sound broadcasting	Region 1 and national allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
3 400-3 500 kHz AERONAUTICAL MOBILE (R)	3 400-3 500 kHz AERONAUTICAL MOBILE (R)	Aeronautical mobile (R) service	Region 1 allocation
3 500-3 800 kHz AMATEUR FIXED MOBILE except aeronautical mobile 5.92	3 500-3 800 kHz AMATEUR FIXED LAND MOBILE RW3 5.92	Amateur service (80 metre band) Fixed service users Land mobile service	Region 1 and national allocations
3 800-3 900 kHz FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	3 800-3 900 kHz FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	3 800-3 850 kHz Private Mobile Radio	National allocation
		3 850-3 900 kHz Fixed users	Region 1 allocation
3 900-3 950 kHz AERONAUTICAL MOBILE (OR) 5.123	3 900-3 950 kHz AERONAUTICAL MOBILE (OR)	Aeronautical mobile service (OR)	Region 1 allocation
3 950-4 000 kHz FIXED BROADCASTING	3 950-4 000 kHz FIXED BROADCASTING	Fixed service users Short wave sound broadcasting	Region 1 allocation
4 000-4 063 kHz FIXED MARITIME MOBILE 5.127 5.126	4 000-4 063 kHz FIXED 5.126	Fixed service users	Region 1 allocation
4 063-4 438 kHz MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132	4 063-4 438 kHz MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132	Maritime mobile service	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5.128	5.128		
4438-4488 KHz FIXED MOBILE except aeronautical mobile (R) Radiolocation 5.132A 5.132B	4 438-4 488 kHz FIXED LAND MOBILE RW3	Fixed users	Region 1 allocation (Rev. WRC-12)
4 488-4 650 kHz FIXED MOBILE except aeronautical mobile (R)	4 488-4 650 kHz FIXED LAND MOBILE RW3	4 488-4 550 kHz Fixed users	Region 1 allocation
		4 550-4 650 kHz Land mobile users	National allocation
4 650-4 700 kHz AERONAUTICAL MOBILE (R)	4 650-4 700 kHz AERONAUTICAL MOBILE (R)	Aeronautical Mobile (R) service	Region 1 allocation
4 700-4 750 kHz AERONAUTICAL MOBILE (OR)	4 700-4 750 kHz AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (R) service	Region 1 allocation
4 750-4 850 kHz FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 5.113	4 750-4 850 kHz FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 5.113	Fixed service users Aeronautical Mobile (OR) service Land mobile service Broadcasting service	Region 1 allocations
4 850-4 995 kHz FIXED LAND MOBILE BROADCASTING 5.113	4 850-4 995 kHz FIXED LAND MOBILE BROADCASTING 5.113	Fixed service users Land mobile service Short wave sound broadcasting	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
4 995-5 003 kHz STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	4 995-5 003 kHz STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	Standard frequency and time signal (5000 kHz)	Region 1 allocation
5 003-5 005 kHz STANDARD FREQUENCY AND TIME SIGNAL Space research	5 003-5 005 kHz STANDARD FREQUENCY AND TIME SIGNAL Space research	Standard frequency and time signal	Region 1 allocation
5 005-5 060 kHz FIXED BROADCASTING 5.113	5 005-5 060 kHz FIXED BROADCASTING 5.113	Fixed service users Short wave sound broadcasting	Region 1 allocations
5 060-5 250 kHz FIXED Mobile except aeronautical mobile 5.133	5 060-5 250 kHz FIXED LAND MOBILE RW3	5 060-5 150 kHz Private Mobile Radio (e.g. NGO users)	National allocation
		5 150-5 250 kHz Fixed users	Region 1 allocation
5 250-5275 kHz FIXED MOBILE except aeronautical mobile Radiolocation 5.132A 5.133A	5 250-5 450 kHz FIXED LAND MOBILE RW3	Fixed users Private Mobile Radio users	Region 1 allocation
5275-5351.5 kHz FIXED MOBILE except aeronautical mobile	5 250-5 351.5 kHz FIXED LAND MOBILE RW3	5 275-5 350 kHz Private Mobile Radio users	National allocation
		5 350-5 351.5 kHz Fixed users	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5351.5-5366.5kHz FIXED MOBILE except aeronautical mobile Amateur 5.133B	5 351.5-5 366.5 kHz FIXED LAND MOBILE RW3 Amateur 5.133B	Amateur Radio Fixed users	Region 1 allocation
5366.5-5450 kHz FIXED MOBILE except aeronautical mobile	5 366.5-5 5450 kHz FIXED LAND MOBILE RW3	Fixed users	Region 1 allocation
5 450-5 480 kHz FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	5 450-5 480 kHz FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	Fixed service users Aeronautical Mobile (OR) service Land Mobile service	Region 1 allocations
5 480-5 680 kHz AERONAUTICAL MOBILE (R) 5.111 5.115	5 480-5 680 kHz AERONAUTICAL MOBILE (R) 5.111 5.115	Aeronautical mobile (R) service	Region 1 allocation
5 680-5 730 kHz AERONAUTICAL MOBILE (OR) 5.111 5.115	5 680-5 730 kHz AERONAUTICAL MOBILE (OR) 5.111 5.115	Aeronautical mobile (OR) service	Region 1 allocation
5 730-5 900 kHz FIXED LAND MOBILE	5 730-5 900 kHz FIXED LAND MOBILE	5 730-5 820 kHz Land mobile users	Region 1 allocations
		5 820-5 900 kHz Fixed users	Region 1 allocation
5 900-5 950 kHz BROADCASTING 5.134 5.136	5 900-5 950 kHz BROADCASTING 5.134 5.136	Short wave sound broadcasting	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5 950-6 200 kHz BROADCASTING	5 950-6 200 kHz BROADCASTING	Short wave sound broadcasting	Region 1 allocation
6 200-6 525 kHz MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137	6 200-6 525 kHz MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137	Maritime mobile service	Region 1 allocation
6 525-6 685 kHz AERONAUTICAL MOBILE (R)	6 525-6 685 kHz AERONAUTICAL MOBILE (R)	Aeronautical mobile (R) service	Region 1 allocation
6 685-6 765 kHz AERONAUTICAL MOBILE (OR)	6 685-6 765 kHz AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR) service	Region 1 allocation
6 765-7 000 kHz FIXED MOBILE except aeronautical mobile (R) 5.138 5.139	6 765-7 000 kHz FIXED LAND MOBILE RW3 5.138 RW1 RW2	6 765-6 900 kHz Fixed users	6765 - 6795 kHz Industrial, Scientific & Medical use. See RURA ISM band guidelines. Short Range Devices permitted. Region 1 allocation
		6 900-7 000 kHz Private Mobile Radio	National allocation
7 000-7 100 kHz AMATEUR AMATEUR-SATELLITE 5.140 5.141 5.141A	7 000-7 050 kHz AMATEUR AMATEUR-SATELLITE FIXED 5.140	Amateur service (40 metre band) Amateur-satellite service Fixed service users	Region 1 allocations
	7 050-7 100 kHz AMATEUR	Amateur service (40 metre band)	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
	AMATEUR-SATELLITE	Amateur-satellite service	
7 100-7 200 kHz AMATEUR 5.141A 5.141B 5.142	7 100-7 200 kHz AMATEUR 5.142	Amateur service (40 meter band)	Region 1 allocation
7 200-7 300 kHz BROADCASTING	7 200-7 300 kHz BROADCASTING	Short wave sound broadcasting	Region 1 allocation
7 300-7 400 kHz BROADCASTING 5.134 5.143 5.143A 5.143B 5.143C	7 300-7 400 kHz BROADCASTING 5.134 5.143 5.143B	Short wave sound broadcasting	Region 1 allocation
7 400-7 450 kHz BROADCASTING 5.143B 5.143C	7 400-7 450 kHz BROADCASTING 5.143B	Short wave sound broadcasting	Region 1 allocation
7 450-8 100 kHz FIXED MOBILE except aeronautical mobile (R) 5.143E 5.144	7 450-8 100 kHz FIXED LAND MOBILE RW3 5.143E 5.144	7 450-7 500 MHz Fixed service users	
		7 500-8 100 kHz Private Mobile Radio	
8 100-8 195 kHz FIXED MARITIME MOBILE	8 100-8 195 kHz FIXED	Fixed service users	Region 1 allocation
8 195-8 815 kHz MARITIME MOBILE 5.109 5.110 5.111 5.132 5.145	8 195-8 815 kHz MARITIME MOBILE 5.109 5.110 5.111 5.132 5.145	Maritime mobile service	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
8 815-8 965 kHz AERONAUTICAL MOBILE (R)	8 815-8 965 kHz AERONAUTICAL MOBILE (R)	Aeronautical mobile (R) service	Region 1 allocation
8 965-9 040 kHz AERONAUTICAL MOBILE (OR)	8 965-9 040 kHz AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR) service	Region 1 allocation
9 040-9 305 kHz FIXED	9 040-9 305 kHz FIXED LAND MOBILE	9 040-9 200 kHz Private Mobile Radio (e.g. NGO users)	Region 1 and national allocations
		9 200-9 305 kHz Fixed users	Region 1 and national allocations
9 305-9 355 kHz FIXED Radiolocation 5.145A 5.D115 5.145B	9 305-9 355kHz FIXED	Fixed users	Region 1 and national allocations
9 355-9 400 kHz FIXED	9 355-9 400 KHz FIXED	Fixed users	Region 1 and national allocations
9 400-9 500 kHz BROADCASTING 5.134 5.146	9 400-9 500 kHz BROADCASTING 5.134 5.146	Short wave sound broadcasting	Region 1 allocation
9 500-9 900 kHz BROADCASTING 5.147	9 500-9 900 kHz BROADCASTING 5.147	Short wave sound broadcasting	Region 1 allocation
9 900-9 995 kHz FIXED	9 900-9 995 kHz FIXED	Fixed service	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
9 995-10 003 kHz STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 5.111	9 995-10 003 kHz STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 5.111	Standard frequency and time signal (10 000 kHz)	Region 1 allocation
10 003-10 005 kHz STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	10 003-10 005 kHz STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	Standard frequency and time signal (10 000 kHz)	Region 1 allocation
10 005-10 100 kHz AERONAUTICAL MOBILE (R) 5.111	10 005-10 100 kHz AERONAUTICAL MOBILE (R) 5.111	Aeronautical mobile (R) service	Region 1 allocation
10 100-10 150 kHz FIXED Amateur	10 100-10 150 kHz FIXED Amateur	Fixed service Amateur service (30 metre band)	Region 1 allocation
10 150-11 175 kHz FIXED Mobile except aeronautical mobile (R)	10 150-11 175 kHz FIXED Land Mobile	10 150-10 600 kHz Private Mobile Radio users	National allocation
		10 600-11 175 kHz Fixed service	Region 1 allocations
11 175-11 275 kHz AERONAUTICAL MOBILE (OR)	11 175-11 275 kHz AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR) service	Region 1 allocation
11 275-11 400 kHz AERONAUTICAL MOBILE (R)	11 275-11 400 kHz AERONAUTICAL MOBILE (R)	Aeronautical mobile (R) service	Region 1 allocation
11 400-11 600 kHz FIXED	11 400-11 600 kHz FIXED	Fixed service	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
11 600-11 650 kHz BROADCASTING 5.134 5.146	11 600-11 650 kHz BROADCASTING 5.134 5.146	Short wave sound broadcasting	Region 1 allocation
11 650-12 050 kHz BROADCASTING 5.147	11 650-12 050 kHz BROADCASTING 5.147	Short wave sound broadcasting	Region 1 allocation
12 050-12 100 kHz BROADCASTING 5.134 5.146	12 050-12 100 kHz BROADCASTING 5.134 5.146	Short wave sound broadcasting	Region 1 allocation
12 100-12 230 kHz FIXED	12 100-12 230 kHz FIXED	Fixed service	Region 1 allocation
12 230-13 200 kHz MARITIME MOBILE 5.109 5.110 5.132 5.145	12 230-13 200 kHz MARITIME MOBILE 5.109 5.110 5.132 5.145	Maritime mobile service	Region 1 allocation
13 200-13 260 kHz AERONAUTICAL MOBILE (OR)	13 200-13 260 kHz AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR) service	Region 1 allocation
13 260-13 360 kHz AERONAUTICAL MOBILE (R)	13 260-13 360 kHz AERONAUTICAL MOBILE (R)	Aeronautical mobile (R) service	Region 1 allocation
13 360-13 410 kHz FIXED RADIO ASTRONOMY 5.149	13 360-13 410 kHz FIXED 5.149	Fixed service	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
13 410-13 450 kHz FIXED Mobile except aeronautical mobile (R) 5.150	13 410-13 450 kHz FIXED Land Mobile RW3 5.150 RW1 RW2	Fixed service Land mobile service	13 553 – 13 567 kHz Industrial, Scientific & Medical use. See RURA ISM band guidelines. Short Range Devices permitted. Region 1 and national allocations
13 450-13 550 kHz FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132A 5.E115	13 450-13 550 kHz FIXED Land Mobile RW3	Fixed service Land mobile service	Region 1 allocation
13 550-13 570 kHz FIXED Mobile except aeronautical mobile (R) 5.150	13 550-13 570 kHz FIXED Land Mobile RW3 5.150 RW1 RW2	Fixed service Land mobile service	Region 1 and national allocations 13 553 – 13 567 kHz Industrial, Scientific & Medical use. See RURA ISM band guidelines. Short Range Devices permitted. (Rev. WRC-12)
13 570-13 600 kHz BROADCASTING 5.134 5.151	13 570-13 600 kHz BROADCASTING 5.134 5.151	Short wave sound broadcasting	Region 1 allocation
13 600-13 800 kHz BROADCASTING	13 600-13 800 kHz BROADCASTING	Short wave sound broadcasting	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
13 800-13 870 kHz BROADCASTING 5.134 5.151	13 800-13 870 kHz BROADCASTING 5.134 5.151	Short wave sound broadcasting	Region 1 allocation
13 870-14 000 kHz FIXED Mobile except aeronautical mobile (R)	13 870-14 000 kHz FIXED Land Mobile	13 870-13 935 kHz Fixed users	Region 1 allocation
		13 935-14 000 kHz Private Mobile Radio users	National allocation
14 000-14 250 kHz AMATEUR AMATEUR-SATELLITE	14 000-14 250 kHz AMATEUR AMATEUR-SATELLITE	Amateur users (20 metre band) Amateur-satellite users	Region 1 allocation
14 250-14 350 kHz AMATEUR 5.152	14 250-14 350 kHz AMATEUR	Amateur users (20 metre band)	Region 1 allocation
14 350-14 990 kHz FIXED Mobile except aeronautical mobile (R)	14 350-14 990 kHz FIXED Land Mobile	Fixed users	Region 1 allocation
14 990-15 005 kHz STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 5.111	14 990-15 005 kHz STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 5.111	Standard frequency and time signal	Region 1 allocation
15 005-15 010 kHz STANDARD FREQUENCY AND TIME SIGNAL	15 005-15 010 kHz STANDARD FREQUENCY AND TIME SIGNAL	Standard frequency and time signal	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
Space research	Space research		
15 010-15 100 kHz AERONAUTICAL MOBILE (OR)	15 010-15 100 kHz AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR) service	Region 1 allocation
15 100-15 600 kHz BROADCASTING	15 100-15 600 kHz BROADCASTING	Short wave sound broadcasting	Region 1 allocation
15 600-15 800 kHz BROADCASTING 5.134 5.146	15 600-15 800 kHz BROADCASTING 5.134 5.146	Short wave sound broadcasting	Region 1 allocation
15 800-16 100 kHz FIXED 5.153	15 800-16 100 kHz FIXED 5.153	Fixed users	Region 1 allocation
16 100-16 200 kHz FIXED Radiolocation 5.145A 5.D115 5.145B	16 100-16 200 kHz FIXED	Fixed users	Region 1 allocation
16 200-16 360 kHz FIXED	16 200-16 360 kHz FIXED	Fixed users	Region 1 allocation
16 360-17 410 kHz MARITIME MOBILE 5.109 5.110 5.132 5.145	16 360-17 410 kHz MARITIME MOBILE 5.109 5.110 5.132 5.145	Maritime mobile service	Region 1 allocation
17 410-17 480 kHz FIXED	17 410-17 480 kHz FIXED	Fixed users	Region 1 allocation
17 480-17 550 kHz BROADCASTING 5.134	17 480-17 550 kHz BROADCASTING 5.134	Short wave sound broadcasting	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5.146	5.146		
17 550-17 900 kHz BROADCASTING	17 550-17 900 kHz BROADCASTING	Short wave sound broadcasting	Region 1 allocation
17 900-17 970 kHz AERONAUTICAL MOBILE (R)	17 900-17 970 kHz AERONAUTICAL MOBILE (R)	Aeronautical mobile (R) service	Region 1 allocation
17 970-18 030 kHz AERONAUTICAL MOBILE (OR)	17 970-18 030 kHz AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR) service	Region 1 allocation
18 030-18 052 kHz FIXED	18 030-18 052 kHz FIXED	Fixed users	Region 1 allocation
18 052-18 068 kHz FIXED Space research	18 052-18 068 kHz FIXED Space research	Fixed users	Region 1 allocation
18 068-18 168 kHz AMATEUR AMATEUR-SATELLITE 5.154	18 068-18 168 kHz AMATEUR AMATEUR-SATELLITE	Amateur users (17 metre band) Amateur-satellite users	Region 1 allocation
18 168-18 780 kHz FIXED Mobile except aeronautical mobile	18 168-18 780 kHz FIXED Land Mobile RW3	Fixed users	Region 1 allocation
18 780-18 900 kHz MARITIME MOBILE	18 780-18 900 kHz MARITIME MOBILE	Maritime mobile service	Region 1 allocation
18 900-19 020 kHz BROADCASTING 5.134 5.146	18 900-19 020 kHz BROADCASTING 5.134 5.146	Short wave sound broadcasting	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
19 020-19 680 kHz FIXED	19 020-19 680 kHz FIXED	Fixed users	Region 1 allocation
19 680-19 800 kHz MARITIME MOBILE 5.132	19 680-19 800 kHz MARITIME MOBILE 5.132	Maritime mobile service	Region 1 allocation
19 800-19 990 kHz FIXED	19 800-19 990 kHz FIXED	Fixed service users	Region 1 allocation
19 990-19 995 kHz STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	19 990-19 995 kHz STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	Standard frequency and time signal	Region 1 allocation
19 995-20 010kHz STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 5.111	19 995-20 010kHz STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 5.111	Standard frequency and time signal (20 000 kHz)	Region 1 allocation
20 010-21 000 kHz FIXED Mobile	20 010-21 000 kHz FIXED MOBILE	20 010-20 500 kHz Fixed users	Region 1 allocation
		20 500-21 000 kHz Private Mobile Radio	National allocation
21 000-21 450 kHz AMATEUR AMATEUR-SATELLITE	21 000-21 450 kHz AMATEUR AMATEUR-SATELLITE	Amateur users (15 metre band) Amateur satellite users	Region 1 allocations
21 450-21 850 kHz BROADCASTING	21 450-21 850 kHz BROADCASTING	Short wave sound broadcasting	Region 1 allocation
21 850-21 870 kHz	21 850-21 870 kHz	Fixed users	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
FIXED 5.155A 5.155	FIXED		
21 870-21 924 kHz FIXED 5.155B	21 870-21 924 kHz FIXED 5.155B	Fixed users	Region 1 allocation
21 924-22 000 kHz AERONAUTICAL MOBILE (R)	21 924-22 000 kHz AERONAUTICAL MOBILE (R)	Aeronautical mobile (R) users	Region 1 allocation
22 000-22 855 kHz MARITIME MOBILE 5.132 5.156	22 000-22 855 kHz MARITIME MOBILE 5.132	Maritime mobile service	Region 1 allocation
22 855-23 000 kHz FIXED 5.156	22 855-23 000 kHz FIXED	Fixed users	Region 1 allocation
23 000-23 200 kHz FIXED Mobile except aeronautical mobile (R) 5.156	23 000-23 200 kHz FIXED Land Mobile	23 000-23 150 kHz Fixed users	Region 1 allocation
		23 150-23 200 kHz Land mobile users	National allocation
23 200-23 350 kHz FIXED 5.156A AERONAUTICAL MOBILE (OR)	23 200-23 350 kHz FIXED 5.156A AERONAUTICAL MOBILE (OR)	Fixed users	Region 1 allocation
23 350-24 000 kHz FIXED MOBILE except aeronautical mobile 5.157	23 350-24 000 kHz FIXED LAND MOBILE RW3 5.157	23 350-23 375 kHz Fixed users	Region 1 allocation
		23 375-24 000 kHz Land mobile users	National allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
24 000-24 450 kHz FIXED LAND MOBILE	24 000-24 890 kHz FIXED LAND MOBILE	Fixed users	Region 1 allocation
24 450-24 600 kHz FIXED LAND MOBILE Radiolocation 5.132A 5.G115	24 450-24 600 kHz FIXED LAND MOBILE	Land mobile users	Region 1 allocation
24 600-24 890 kHz FIXED LAND MOBILE	24 600-24 890 kHz FIXED LAND MOBILE	Land mobile users	Region 1 allocation
24 890-24 990 kHz AMATEUR AMATEUR-SATELLITE	24 890-24 990 kHz AMATEUR AMATEUR-SATELLITE	Amateur users (12 metre band) Amateur satellite users	Region 1 allocation
24 990-25 005kHz STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	24 990-25 005kHz STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	Standard frequency and time signal (25 000 kHz)	Region 1 allocation
25 005-25 010kHz STANDARD FREQUENCY AND TIME SIGNAL Space research	25 005-25 010kHz STANDARD FREQUENCY AND TIME SIGNAL Space research	Standard frequency and time signal	Region 1 allocation
25 010-25 070 kHz FIXED MOBILE except aeronautical mobile	25 010-25 070 kHz FIXED LAND MOBILE RW3	25 010-25 040 kHz Fixed users	Region 1 allocation
		25 040-25 070 kHz Land mobile users	Region 1 allocation

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ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
25 070-25 210 kHz MARITIME MOBILE	25 070-25 210 kHz MARITIME MOBILE	Maritime mobile service	Region 1 allocation
25 210-25 550 kHz FIXED MOBILE except aeronautical mobile	25 210-25 550 kHz FIXED LAND MOBILE RW3	25 210-25 380 kHz Fixed users	Region 1 allocation
		25 380-25 550 kHz Land mobile users	National allocation
25 550-25 670 kHz RADIO ASTRONOMY 5.149	25 550-25 670 kHz RADIO ASTRONOMY 5.149	Radio astronomy	Region 1 allocation
25 670-26 100kHz BROADCASTING	25 670-26 100kHz BROADCASTING	Short wave sound broadcasting	Region 1 allocation
26 100-26 175 kHz MARITIME MOBILE 5.132	26 100-26 175 kHz MARITIME MOBILE 5.132	Maritime mobile service	Region 1 allocation
26 175-26 200 kHz FIXED MOBILE except aeronautical mobile	26 175-27 500 kHz FIXED LAND MOBILE RW3	Fixed users	Region 1 allocation
26 200-26 350 kHz FIXED MOBILE except aeronautical mobile Radiolocation 5.132A 5.133A	26 200-26 350 kHz FIXED LAND MOBILE RW3	Fixed users	Region 1 allocation
26 350-26 500 kHz	26 350-26 500 kHz	26 350-26 500 kHz Fixed users	Region 1 allocation

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ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
FIXED MOBILE except aeronautical mobile 5.150	FIXED LAND MOBILE 5.150 RW1 RW2	26 500-26 957 kHz Land mobile users	National allocation
		26 957 – 27 283 kHz Industrial, Scientific & Medical use.	See RURA ISM band guidelines. Short Range Devices permitted.
27 283-27 500 KHz THIS BAND IS MISSING IN THE OLD NTFA			
27 500-28 000 kHz METEOROLOGICAL AIDS FIXED MOBILE	27 500-28 000 kHz METEOROLOGICAL AIDS FIXED MOBILE	Meteorological aids, fixed and mobile users	Region 1 allocations
28 000-29 700 kHz AMATEUR AMATEUR-SATELLITE	28 000-29 700 kHz AMATEUR AMATEUR-SATELLITE	Amateur users (10 metre band) Amateur-satellite users	Region 1 allocations
29 700-30 005 kHz FIXED MOBILE	29 700-30 005 kHz FIXED MOBILE	29 700-29 850 kHz Fixed users	Region 1 allocation
		29 850-30 005 kHz Land mobile users	Region 1 allocation
30.005-30.01 MHz SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	30.005-30.01 MHz FIXED MOBILE	Government use	Region1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
30.01-37.5 MHz FIXED MOBILE	30.01-37.5 MHz FIXED MOBILE	Government use	Region 1 allocations
37.5-38.25 FIXED MOBILE Radio astronomy 5.149	37.5-38.25 FIXED MOBILE 5.149	Government use	Region 1 allocations
38.25-39 MHz FIXED MOBILE	38.25-39 MHz FIXED MOBILE	Government use	Region 1 allocations
39-39.5 MHz FIXED MOBILE Radiolocation 5.132A 5.H115 5. 159	39-39.5 MHz FIXED MOBILE	Government use	Region 1 allocations
39.5-39.986 MHz FIXED MOBILE	39.9 -39.986 MHz FIXED MOBILE	Government use	Region 1 allocations
39.986-40.02 MHz FIXED MOBILE Space research	39.986-40.02 MHz FIXED MOBILE	Government use	. Region 1 allocations

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ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
40.02-40.98 MHz FIXED MOBILE 5.150	40.02-40.98 MHz FIXED MOBILE 5.150 RW1 RW2	40.02-40.66 MHz Fixed users	40.66 - 40.70 MHz Industrial, Scientific & Medical use. See RURA ISM band guidelines. Short Range Devices permitted.
		40.66-40.7 MHz ISM	
		40.7-40.98 MHz Mobile users	
40.98-41.015 MHz FIXED MOBILE Space research 5.160 5.161	40.98-41.015 MHz FIXED MOBILE 5.160 5.161	Government use	Region 1 allocations
41.015-42 MHz FIXED MOBILE 5.160 5.161 5.161A	41.015- 42 MHz AERONAUTICAL RADIONAVIGATION 5.160 FIXED MOBILE	Aeronautical radionavigation service Government use	Region 1 allocation
42-42.5MHz FIXED MOBILE Radiolocation 5.132A 5.160 5.J115 5.161B	42-42.5 MHz AERONAUTICAL RADIONAVIGATION 5.160 FIXED MOBILE	Aeronautical radionavigation service Government use	Region 1 allocations
42.5-44 MHz FIXED MOBILE 5.160 5.161 5.1115	42.5-44 MHz AERONAUTICAL RADIONAVIGATION 5.160 FIXED MOBILE	Aeronautical radionavigation service Government use	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5.161A			
44-47 MHz FIXED MOBILE 5.162 5.162A	44-47 MHz FIXED MOBILE 5.162	Government use	Sub-band allocations to be defined. Available for national assignments
47-50 MHz BROADCASTING 5.162A 5.163 5.164 5.165	47-50 MHz FIXED MOBILE	Government use	National allocations
50-52 MHz BROADCASTING Amateur 5.A11 5.B11 5.E11 5.162A 5.164 5.165 5.169 5.C11 5.D11 5.169bis 5.A11bis	50-52 MHz AMATEUR 5.169	Amateur users	Region 1 and National allocation
52-68 BROADCASTING	52-54 MHz AMATEUR 5.169	Amateur users	National allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5.162A 5.163 5.164 5.165 5.169 5.171 5.169bis 5.A11bis	54-68 MHz BROADCASTING FIXED MOBILE except aeronautical 5.171	Government use	Region 1 allocations
68-74.8 MHz FIXED MOBILE except aeronautical mobile 5.149 5.175 5.177 5.179	68-74.8 MHz FIXED LAND MOBILE 5.149	Government use.	Region 1 and national allocations
74.8-75.2 MHz AERONAUTICAL RADIONAVIGATION 5.180 5.181	74.8-75.2 MHz AERONAUTICAL RADIONAVIGATION 5.180	ILS Marker Beacons	Region 1 allocation
75.2-87.5 MHz FIXED MOBILE except aeronautical mobile 5.175 5.179 5.187	75.2-87.5 MHz FIXED LAND MOBILE RW3	Government use.	Region 1 and national allocations
87.5-100 MHz BROADCASTING 5.190	87.5-100 MHz BROADCASTING RW2	FM Broadcasting	Use as per ITU GE84 plan. Short Range Devices permitted.
100-108 MHz BROADCASTING	100-108 MHz BROADCASTING	FM Broadcasting	Use as per ITU GE84 plan.

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5.192 5.194	5.192 RW2		Short Range Devices permitted.
108-117.975 MHz AERONAUTICAL RADIONAVIGATION 5.197 5.197A	108-117.975 MHz AERONAUTICAL RADIONAVIGATION 5.197A	Instrument landing system (ILS) localizer (108-112 MHz)	Region 1 allocation
		VHF OmniRange (VOR) (112-117.95 MHz)	
117.975-137 MHz AERONAUTICAL MOBILE (R) 5.111 5.200 5.201 5.202	117.975-137 MHz AERONAUTICAL MOBILE (R) 5.111 5.200	Aeronautical ground to air voice communications. Ground radio stations and aircraft radio stations	Region 1 allocation
		121.5 MHz International Distress & Safety (Search & Rescue) frequency	

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
<p>137-137.025 MHz SPACE OPERATION (space-to-Earth) 5.A17 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</p>	<p>137-137.025 MHz SPACE OPERATION (space-to-Earth) 5.A17 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) 5.207 5.208</p>	<p>Meteorological satellite downlink Mobile satellite downlink Space operation downlink Space research downlink</p>	<p>Region 1 allocations</p> <p>The use of space operation service (space-to-Earth) with non-geostationary satellite short-duration mission systems in the frequency band 137-138 MHz is subject to Resolution COM5/9 (WRC-19)</p>
<p>137.025-137.175 MHz SPACE OPERATION (space-to-Earth) 5.A17 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</p>	<p>137.025-137.175 MHz SPACE OPERATION (space-to-Earth) 5.A17 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) 5.207 5.208</p>	<p>Meteorological satellite downlink Space operation downlink Space research downlink</p>	<p>Region 1 allocations</p> <p>The use of space operation service (space-to-Earth) with non-geostationary satellite short-duration mission systems in the frequency band 137-138 MHz is subject to Resolution COM5/9 (WRC-19)</p>

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
<p>137.175-137.825 MHz SPACE OPERATION (space-to-Earth) 5. A17 5.AA17 METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 Fixed Mobile except aeronautical mobile (R)</p> <p>5.204 5.205 5.206 5.207 5.208</p>	<p>137.175-137.825 MHz SPACE OPERATION (space-to-Earth) 5.A17 5.AA17 METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 Fixed Land Mobile RW</p> <p>5.207 5.208</p>	<p>Meteorological satellite downlink Mobile satellite downlink Space operation downlink Space research downlink</p>	<p>Region 1 allocations</p>
<p>137.825-138 MHz SPACE OPERATION (space-to-Earth) 5.A17 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)</p> <p>5.204 5.205 5.206 5.207 5.208</p>	<p>137.825-138 MHz SPACE OPERATION (space-to-Earth) 5.A17 METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 Land Mobile RW3</p> <p>5.207 5.208</p>	<p>Meteorological satellite downlink Space operation downlink Space research downlink</p>	<p>Region 1 allocations</p> <p>The use of space operation service (space-to-Earth) with non-geostationary satellite short-duration mission systems in the frequency band 137-138 MHz is subject to Resolution COM5/9 (WRC-19)</p>

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
138-143.6 MHz AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	138-144 MHz FIXED MOBILE 5.212	Fixed users Mobile users	National allocations. Available for national assignments.
143.6-143.65 MHz AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space-to-Earth) 5.211 5.212 5.214		138-139 MHz Dual frequency	Paired with 143-144 MHz.
		139-143 MHz single frequency	Unpaired
143.65-144 MHz AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214		143-144 MHz dual frequency	Paired with 138-139 MHz.
144-146 MHz AMATEUR AMATEUR-SATELLITE 5.216	144-146 MHz AMATEUR AMATEUR-SATELLITE 5.216	Amateur users (2 meter band) Amateur-satellite users	Region 1 allocation
146-148 MHz FIXED MOBILE except aeronautical mobile (R)	146-148 MHz FIXED LAND MOBILE RW3	Private Mobile Radio users	National allocation. Available for national assignments
		146-147 MHz dual frequency	Paired with 151-152 MHz
		147-148 MHz single frequency	Unpaired

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
148-149.9 MHz FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219 5.221 5.BB17	148-149.9 MHz FIXED LAND MOBILE MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219	Private Mobile Radio users	National allocation. Available for national assignments
		148-149.9 MHz single frequency	
149.9-150.05 MHz MOBILE-SATELLITE (Earth-to-space) 5.209 5.220	149.9-150.05 MHz MOBILE-SATELLITE (Earth-to-space) 5.209 5.220	Mobile satellite uplink	Region 1 allocation
150.05-153 MHz FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	150.05-153 MHz FIXED LAND MOBILE RW3 RADIO ASTRONOMY 5.149	Private Mobile Radio users	National allocation. Available for national assignments.
		150.05-151 MHz single frequency	Unpaired
		151-152 dual frequency	Paired with 146-147 MHz
		152-153 MHz dual frequency	Paired with 157-158 MHz
153-154 MHz FIXED	153-154 MHz FIXED	Private Mobile Radio users	Available for national assignments.

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
MOBILE except aeronautical mobile (R) Meteorological Aids	LAND MOBILE RW3 Meteorological Aids	153- 154 MHz dual frequency	Paired with 158-159 MHz
154-156.4875 MHz FIXED MOBILE except aeronautical mobile (R) 5.226 5. A114	154-156.4875 MHz FIXED LAND MOBILE RW3 5.226	Private Mobile Radio users	Available for national assignments.
		154-155 MHz dual frequency	Paired with 150-160 MHz
		155- 156.4875 MHz Single frequency	Unpaired
156.4875-156.5625 MHz MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227	156.4875-156.5625 MHz MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227	Reserved for Maritime Mobile use	Additional primary Fixed and Land Mobile assignments may be permitted under 5.227 but must protect and not interfere with Maritime Mobile
156.5625-156.7625 MHz FIXED MOBILE except aeronautical mobile (R) 5.226	156.5625-156.7625 MHz FIXED LAND MOBILE RW3 5.226	Land mobile radio or fixed users	National allocation. Available for national assignments.
		156.5625-156.7625 MHz single frequency use	Unpaired
156.7625-156.8375 MHz MARITIME MOBILE Mobile Satellite (Earth-to-space)5.111 5.226 5.228	156.7625-156.8375 MHz MARITIME Mobile-satellite (Earth-to-space) 5.111 5.226 5.228	Mobile-satellite (earth-to-space service)	Future fixed or land mobile use may be considered under 5.226

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
156.7875-156.8125 MARITIME MOBILE (distress and calling) 5.111 5.226	156.7875-156.8125 MHz MARITIME MOBILE (distress and calling) 5.111 5.226	Reserved for Maritime Mobile use	Future Fixed or Land Mobile use may be considered under 5.226.
156.8125-156.8375 MHz MARITIME MOBILE Mobile-satellite (Earth-to-space) 5.111 5.226 5.228	156.8125-156.8375 MARITIME MOBILE Mobile-satellite (Earth-to-space) 5.111 5.226 5.228	Mobile-satellite (Earth-to-space) service	Future Fixed or Land Mobile use may be considered under 5.226.
156.8375-157.1875 MHz FIXED MOBILE except aeronautical mobile 5.226	156.8375-157.1875 MHz FIXED LAND MOBILE 5.226 5.227A	Private Mobile Radio users 156.8375-157 Single frequency	Unpaired
157.1875-157.3375 MHz FIXED MOBILE except aeronautical mobile Maritime mobile-satellite 5.A192 5.208A 5.208B 5.B192 5.226	157.1875-161.9375 MHz FIXED LAND MOBILE RW3 5.226	157-160 MHz Dual frequency	Paired with 152-155 MHz
157.3375-161.7875 MHz FIXED MOBILE except aeronautical mobile 5.226		160-161 MHz Dual Frequency	Paired with 165-166 MHz
161.7875-161.9375 MHz FIXED MOBILE except aeronautical mobile Maritime mobile-satellite ADD 5.A192 MOD 5.208A MOD 5.208B ADD 5.B192		161-161.9375 MHz Single frequency	Unpaired

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5.226			
161.9375-161.9625MHz FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226	161.9375-161.9625 FIXED LAND MOBILE RW3 5.226	Private Mobile radio-single frequency	Unpaired
161.9625-161.9875 MHz MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B	161.9625-161.9875 MOBILE except aeronautical mobile 5.226 5.228A 5.228B	161.9625-161.9875 MHz single frequency	Unpaired
161.9875-162.0125 MHz FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226 5.229	161.9875-162.0125 FIXED MOBILE except aeronautical Mobile 5.226 5.229	161.9875-162.0125 MHz single frequency	Unpaired

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
162.0125- 162.0375 MHz FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.229 5.228B	162.0125-162.0375 FIXED MOBILE except aeronautical mobile 5.226 5.228A 5.229 5.228B	162.0125-162.0375 MHz single frequency	Unpaired
162.0375-174 MHz FIXED MOBILE except aeronautical mobile 5.226 5.229	162.0375-174 FIXED MOBILE except aeronautical mobile 5.226 5.229	162.0375-165 MHz single frequency	Unpaired
		165-166 MHz dual frequency	Paired with 160-161 MHz
		166-169 MHz dual frequency	Paired with 171-174 MHz
		169-171 MHz single frequency	Unpaired
		171-174 MHz dual frequency	Paired with 166-169 MHz
174-223 MHz BROADCASTING 5.235 5.237 5.242 5.243	174-223 MHz BROADCASTING RW2	Digital Audio Broadcasting	Region 1 allocation Short Range Devices permitted 174-216 MHz.
223-230 MHz BROADCASTING Fixed Mobile 5.243 5.246 5.247	223-230 MHz BROADCASTING Fixed Mobile	Broadcasting services	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
230-235 MHz FIXED MOBILE 5.247 5.251 5.252	230-235 MHz FIXED MOBILE	Fixed users Mobile users	Available for national assignments. Sub-band allocations to be defined.
235-267 MHz FIXED MOBILE 5.111 5.199 5.252 5.254 5.256 5.256A	235-267 MHz FIXED MOBILE 5.111 5.199 5.254 5.256	Fixed users Mobile users 242.95 - 243.05 MHz reserved for emergency search and rescue	Available for national assignments. Sub-band allocations to be defined.
267-272 MHz FIXED MOBILE Space operation (space-to-Earth) 5.254 5.257	267-272 MHz FIXED MOBILE Space operation (space-to-Earth) 5.254 5.257	Fixed users Mobile users	Available for national assignments. Sub-band allocations to be defined.
272-273 MHz SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	272-273 MHz SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	Fixed users Mobile users	Available for national assignments. Sub-band allocations to be defined.
273-312 MHz FIXED MOBILE 5.254	273-312 MHz FIXED MOBILE 5.254	Fixed users	Available for national assignments.
		300 – 312 MHz assigned for STL links	Available for national assignments.

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
312-315 MHz FIXED MOBILE Mobile-satellite (Earth-to-space) 5.254 5.255	312-315 MHz FIXED Mobile-satellite (Earth-to-space) 5.254 5.255	Fixed users assigned for STL links	Available for national assignments.
315-322 MHz FIXED MOBILE 5.254	315-322 MHz FIXED MOBILE 5.254	Fixed users assigned for STL links	Available for national assignments. Sub-band allocations to be defined.
322-328.6 MHz FIXED MOBILE RADIO ASTRONOMY 5.149 5.208A	322-328.6 MHz FIXED MOBILE RADIO ASTRONOMY 5.149	Fixed users Mobile users	Available for national assignments. Sub-band allocations to be defined.
328.6-335.4 MHz AERONAUTICAL RADIONAVIGATION 5.258 5.259	328.6-335.4 MHz AERONAUTICAL RADIONAVIGATION 5.258	ILS - Glide Path	.
335.4-387 MHz FIXED MOBILE 5.254	335.4-387 MHz FIXED MOBILE 5.254	335.4-380 MHz Fixed users Mobile users	Available for national assignments. Sub-band allocations to be defined.
		380-385 MHz PMR dual frequency	Paired with 390-395

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
		385-389.9 MHz dual frequency	Paired with 395-399.9
		389.9-390 MHz PMR single frequency	Unpaired
387-390 MHz FIXED MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255	387-390 MHz FIXED MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255		
390-399.9 MHz FIXED MOBILE 5.254	390-399.9 MHz FIXED MOBILE 5.254	390-395 MHz dual frequency	Paired with 380-385 MHz
		395-399.9 MHz dual frequency	Paired with 385-389.9 MHz
399.9-400.05 MHz MOBILE-SATELLITE (Earth-to-space) 5.209 5.A12 5.B12 5.220	399.9-400.05 MHz MOBILE-SATELLITE (Earth-to-space) 5.209 5.220	Mobile satellite uplinks	Region 1 allocations maximum e.i.r.p. of any emission of Earth stations in the mobile-satellite service shall not exceed 5 dBW for the stations that shall not have been notified or put in use before 22 November 2019. This will apply after 22 November 2022
400.05-400.15 MHz	400.05-400.15 MHz	Standard frequency and time signal	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
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		
400.15-401 MHz 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	400.15-401 MHz 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) 5.264	Meteorological aids Meteorological satellite downlink Mobile satellite downlink Space research downlink	Region 1 allocations
401-402 MHz METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile 5.C12 5.D12	401-402 MHz METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Land Mobile RW3	Meteorological aids Space operation downlink Earth exploration satellite uplink Meteorological satellite uplink	Region 1 allocations
402-403MHz METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE	402-403MHz METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE	Meteorological aids Earth exploration satellite uplink Meteorological satellite uplink	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
(Earth-to-space) Fixed Mobile except aeronautical mobile 5.C12 5.D12	(Earth-to-space) Fixed Mobile except aeronautical mobile		
403-406 MHz METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile 5.265	403-406 MHz METEOROLOGICAL AIDS Fixed Land Mobile RW3	403-404.2 MHz Met Aids	Secondary Fixed use by STL links to protect meteorological aids
		404.2-405.8 MHz assigned to STL links on a secondary basis	
		405.8-405.8 MHz Met Aids	
406-406.1 MHz MOBILE-SATELLITE (Earth-to-space) 5.265 5.266 5.267	406-406.1 MHz MOBILE-SATELLITE (Earth-to-space) 5.266 5.267	406.025 MHz reserved as international distress signal frequency	EPIRB/ELT transmit frequency
406.1-410 MHz FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.208A 5.265	406.1-410 MHz FIXED LAND MOBILE RADIO ASTRONOMY 5.149 5.265	Private Mobile Radiosers. Single frequency	Unpaired
410-420 MHz FIXED	410-420 MHz FIXED	410.2-413.8 MHz assigned to Fixed STL links	National allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) 5.268	LAND MOBILE SPACE RESEARCH (space-to-space) 5.268	410-411 MHz assigned to government use	National allocation
		414-420 MHz assigned to PMR dual frequency	. Paired with 421-430 MHz
420-430 MHz FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271	420-430 MHz FIXED LAND MOBILE RW3 Radiolocation 5.270	Private Mobile Radio users	National allocation. Available for national assignments.
		420-421 MHz PMR single frequency	Unpaired
		421-430 MHz PMR dual frequency	Paired with 411-420 MHz
430-432 MHz AMATEUR RADIOLOCATION 5.271 5.272 5.273 5.274 5.275 5.276 5.277	430-432 MHz AMATEUR FIXED RADIOLOCATION 5.277	Amateur users (70 cm band) Fixed users Radiolocation users	Additional national fixed allocation. Available for national assignments. Sub-band allocations to be defined.
432-438 MHz AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138 5.271 5.272 5.276 5.277 5.280 5.281 5.282	432-438 MHz AMATEUR FIXED RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138 5.277 5.281 5.282 RW1 RW2	Amateur users (70 cm band) Fixed users Radiolocation users	Additional national fixed allocation. Available for national assignments. Sub-band allocations to be defined. 433.05-434.79 MHz Industrial, Scientific & Medical use. See RURA ISM band guidelines. Short Range Devices permitted.

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
438-440 MHz AMATEUR RADIOLOCATION 5.271 5.273 5.274 5.275 5.276 5.277 5.283	438-440 MHz AMATEUR FIXED RADIOLOCATION 5.277	Amateur users (70 cm band) Fixed users Radiolocation users	Additional national fixed allocation. Sub-band allocations to be defined.
440-450 MHz FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271 5.284 5.285 5.286	440-450 MHz FIXED LAND MOBILE Radiolocation 5.270 5.284 5.285 5.286	440-446 MHz Single frequency Private Mobile Radio users	Available for national assignments. Unpaired
		446-446.1 MHz designated for low power analogue PMR licence exempt	PMR446 walkie talkie band.
		446.1-446.2 MHz designated for low power digital PMR licence exempt	PMR446 walkie talkie band.
		446.2-450 MHz Single frequency Private Mobile Radio users	Available for national assignments. Unpaired
450-455 MHz FIXED MOBILE 5.286A 5.209 5.271 5.286 5.286A 5.286B 5.286C 5.286D 5.286E	450-455 MHz FIXED MOBILE 5.286AA 5.209 5.286 5.286A	Mobile services	Identified for IMT.

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
455-456 MHz FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286 ^E	455-456 MHz FIXED MOBILE 5.286AA 5.209 5.286A	Mobile services	Identified for IMT
456-459 MHz FIXED MOBILE 5.286AA 5.271 5.287 5.288	456-459 MHz FIXED MOBILE 5.286AA 5.287 5.288	Mobile services	Identified for IMT
459-460 MHz FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286 ^E	459-460 MHz FIXED MOBILE 5.286AA 5.209 5.286A	Mobile services	Identified for IMT
460-470 MHz FIXED MOBILE 5.286AA Meteorological-satellite (space-to-Earth) 5.287 5.288 5.289 5.290	460-470 MHz FIXED MOBILE 5.286AA Meteorological-satellite (space-to-Earth) 5.287 5.288 5.289	Mobile services.	Identified for IMT
470-694 MHz BROADCASTING 5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.312 5.208A	470-694 MHz BROADCASTING 5.149 5.296 5.304 5.306 RW2	Assigned to Digital TV Broadcasting	Short Range Devices permitted subject to licensing
694-790 MHz MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING 5.300 5.312	694-790 MHz LAND MOBILE RW3 5.312A 5.317A	IMT	4G LTE

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
790-862 MHz FIXED BROADCASTING MOBILE except aeronautical mobile 5.316B 5.317A 5.312 5.319	790-862 MHz LAND MOBILE RW3 5.316B 5.317A	IMT	4G LTE
862-890 MHz FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.319 5.323	862-890 MHz FIXED LAND MOBILE 5.317A RW3	IMT	Short Range Devices permitted 863-870 MHz. Identified for IMT
890-942 MHz FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.319 5.323 5.325A	890-942 MHz FIXED LAND MOBILE RW3 5.317A	IMT	Identified for IMT

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
942-960 MHz FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.323	942-960 MHz FIXED LAND MOBILE 5.317A	IMT	Identified for IMT
960-1 164 MHz AERONAUTICAL RADIONAVIGATION 5.328 AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL MOBILE-SATELLITE (R) 5.328AA	960-1 164 MHz AERONAUTICAL RADIONAVIGATION 5.328 AERONAUTICAL MOBILE (R) 5.327A 5.328AA	1030/1090 MHz Secondary Surveillance Radar Distance Measuring Equipment Aircraft Radio Stations 1 087.7-1 092.3 MHz ADS-B	Region 1 allocation AERONAUTICAL MOBILE-SATELLITE (R) authorised to operate on primary basis in the band 1087.7-1092.3MHz
1 164-1 215 MHz AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to- Earth) (space-to-space) 5.328B 5.328A	1 164-1 215 MHz AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to- Earth) (space-to-space) 5.328B 5.328A	Distance Measuring Equipment Aircraft Radio Stations	Region 1 allocations
1 215-1 240 MHz EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to- Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active)	1 215-1 240 MHz EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to- Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active)	ATC Radar GNSS/GPS 1 227.6 MHz L2 signal	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5.330 5.331 5.332	5.332		
1 240-1 300 MHz 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	1 240-1 300 MHz 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 5.335 5.335A	ATC Radar	Region 1 allocations.
1 300-1 350 MHz AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION-SATELLITE (Earth-to-space) 5.149 5.337A	1 300-1 350 MHz AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION-SATELLITE (Earth-to-space) 5.149 5.337A	ATC Radar	Region 1 allocations
1 350-1 400 MHz FIXED MOBILE RADIOLOCATION 5.149 5.338 5.338A 5.339	1 350-1 400 MHz FIXED MOBILE RADIOLOCATION 5.149 5.338A 5.339	1 353.75-1 371.25 MHz (1.4 GHz Tx Band for FWS point to point radio relay links according to ITU-R Rec F.1242).	Available for national assignments.

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
1 400-1 427 MHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	1 400-1 427 MHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	Earth exploration satellite service (passive) Radio astronomy Space research (passive)	Region 1 allocations Sensitive receive-only band.
1 427-1 429 MHz SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.341A 5.341B 5.341C 5.338A 5.341	1 427-1 429 MHz SPACE OPERATION (Earth-to-space) FIXED LAND MOBILE RW3 5.341A 5.338A 5.341	IMT	Region 1 allocation
1 429-1 452 MHz FIXED MOBILE except aeronautical mobile 5.341A 5.338A 5.341 5.342	1 429-1 452 MHz FIXED LAND MOBILE RW3 5.341A 5.338A 5.341	IMT	Region 1 allocation
1 452-1 492 MHz FIXED MOBILE except aeronautical mobile 5.346 BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5.342 5.345	1 452-1 492 MHz FIXED LAND MOBILE 5.346 BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5.345	1 467-1 492 MHz IMT according to Res 761 (Rev. WRC-19)	Region 1 allocation.

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
1 492-1 518 MHz FIXED MOBILE except aeronautical mobile 5.341A 5.341 5.342	1 492-1 518 MHz FIXED LAND MOBILE RW3 5.341A 5.341	IMT	Region 1 allocations
1 518-1 525 MHz FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A 5.341 5.342	1 518-1 525 MHz FIXED LAND MOBILE RW3 MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A 5.341	1 518-1 525 MHz designated for Mobile Satellite Terminals (downlink)	Free circulation and use of radio equipment operating under the control of an authorized satellite system where no frequency planning or individual frequency assignment is needed.
1 525-1 530 MHz 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	1 525-1 530 MHz SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A Earth exploration-satellite Land Mobile 5.349 RW3 5.341 5.350 5.351 5.354	1 525-1 530 MHz designated for Mobile Satellite Terminals (downlink)	Free circulation and use of radio equipment operating under the control of an authorized satellite system where no frequency planning or individual frequency assignment is needed.

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
<p>1 530-1 535 MHz SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A Earth exploration-satellite Fixed Mobile except aeronautical mobile</p> <p>5.341 5.342 5.351 5.354</p>	<p>1 530-1 535 MHz SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A Earth exploration-satellite Fixed Land Mobile</p> <p>5.341 5.351 5.354</p>	<p>1 530-1 535 MHz designated for Mobile Satellite Terminals (downlink)</p>	<p>Free circulation and use of radio equipment operating under the control of an authorized satellite system where no frequency planning or individual frequency assignment is needed.</p>
<p>1 535-1 559 MHz 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</p>	<p>1 535-1 559 MHz MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.341 5.351 5.353A 5.354 5.356 5.357 5.357A 5.362A</p>	<p>1 535-1 544 MHz designated for Mobile Satellite Terminals (downlink)</p> <p>1 545-1 559 MHz designated for Mobile Satellite Terminals (downlink)</p>	<p>Free circulation and use of radio equipment operating under the control of an authorized satellite system where no frequency planning or individual frequency assignment is needed.</p>
<p>1 559-1 610 MHz AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to- Earth) (space-to-space) 5.208B 5.328B 5.329A</p> <p>5.341</p>	<p>1 559-1 610 MHz AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to- Earth) (space-to-space) 5.208B 5.328B 5.329A</p> <p>5.341</p>	<p>GNSS/GPS 1 575.42 MHz L1 signal</p>	<p>Region 1 allocations</p>

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
<p>1 610-1 610.6 MHz 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</p>	<p>1 610-1 610.6 MHz MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341 5.364 5.366 5.367 5.368 5.371 5.372</p>	<p>1 610-1 610.6 MHz designated for Mobile Satellite Terminals (uplink)</p>	<p>Free circulation and use of radio equipment operating under the control of an authorized satellite system where no frequency planning or individual frequency assignment is needed.</p>
<p>1 610.6-1 613.8 MHz 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</p>	<p>1 610.6-1 613.8 MHz MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.364 5.366 5.367 5.368 5.371 5.372</p>	<p>1 610.6-1 613.8 MHz designated for Mobile Satellite Terminals (uplink)</p>	<p>Free circulation and use of radio equipment operating under the control of an authorized satellite system where no frequency planning or individual frequency assignment is needed.</p>
<p>1 613.8-1 621.35 MHz 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</p>	<p>1 613.8-1 621.35 MHz 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 5.371 5.372</p>	<p>1 613.8-1 621.35 MHz designated for Mobile Satellite Terminals (uplink)</p>	<p>Free circulation and use of radio equipment operating under the control of an authorized satellite system where no frequency planning or individual frequency assignment is needed</p>

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
<p>1 621.35-1 626.5 MHz MARITIME MOBILE SATELLITE (space-to-Earth) 5.ADJ BAND 5.IN BAND MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) except maritime mobile satellite (space-to-Earth)</p> <p>5.208B 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372</p>	<p>1 621.35-1 626.5 MHz MARITIME MOBILE SATELLITE (space-to-Earth) 5.ADJ BAND 5.IN BAND MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) except maritime mobile satellite (space-to-Earth)</p> <p>5.208B 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372</p>	<p>Maritime mobile satellite Mobile satellite Aeronautical radionavigations</p>	<p>Region 1 allocations</p> <p>The provisions No.4.10 applies in the frequency band 1 621.35-1 626.5 MHz with respect to the maritime mobile-satellite service when used for GMDSS</p>
<p>1 626.5-1 660 MHz MOBILE-SATELLITE (Earth-to-space) 5.351A</p> <p>5.341 5.351 5.353A 5.354 5.355 5.357A 5.359 5.362A 5.374 5.375 5.376</p>	<p>1 626.5-1 660 MHz MOBILE-SATELLITE (Earth-to-space) 5.351A</p> <p>5.341 5.351 5.353A 5.354 5.357A 5.362A 5.374 5.375 5.376</p>	<p>1 626.5-1 645.5 MHz designated for Mobile Satellite Terminals (uplink)</p> <p>1 646.5-1 660 MHz designated for Mobile Satellite Terminals (uplink)</p>	<p>Free circulation and use of radio equipment operating under the control of an authorized satellite system where no frequency planning or individual frequency assignment is needed.</p>
<p>1 660-1 660.5 MHz MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY</p>	<p>1 660-1 660.5 MHz MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY</p>	<p>1 660-1 660.5 MHz designated for Mobile Satellite Terminals (uplink)</p>	<p>Free circulation and use of radio equipment operating under the control of an authorized satellite system where no frequency</p>

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5.149 5.341 5.351 5.354 5.362A 5.376A	5.149 5.341 5.351 5.354 5.362A 5.376A		planning or individual frequency assignment is needed.
1 660.5-1 668 MHz RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A	1 660.5-1 668 MHz RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Land Mobile RW3 5.149 5.341 5.379A	Radio astronomy Space research (passive)	Region 1 allocations
1 668-1 668.4 MHz 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	1 668-1 668.4 MHz MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Land Mobile RW3 5.149 5.341 5.379A	Mobile satellite uplink Radio astronomy Space research (passive)	Region 1 allocations
1 668.4-1 670 MHz 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	1 668.4-1 670 MHz METEOROLOGICAL AIDS FIXED LAND MOBILE RW3 MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY 5.149 5.341 5.379D 5.379E	Meteorological aids Fixed users Land mobile users Mobile satellite uplink Radio astronomy	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
1 670-1 675 MHz 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	1 670-1 675 MHz 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	1 670.0-1 675.0 MHz designated for Mobile Satellite Terminals (uplink)	Free circulation and use of radio equipment operating under the control of an authorized satellite system where no frequency planning or individual frequency assignment is needed.
1 675-1 690 MHz METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341	1 675-1 690 MHz METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) LAND MOBILE RW3 5.341	Meteorological aids Fixed users Meteorological satellite downlink Land mobile users	Region 1 allocations. Sub-band allocations to be defined.
1 690-1 700 MHz METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 5.289 5.341 5.382	1 690-1 700 MHz METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Land Mobile RW3 5.289 5.341	Meteorological aids Meteorological satellite downlink	Region 1 allocations.

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
1 700-1 710 MHz FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341	1 700-1 710 MHz FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) LAND MOBILE RW3 5.289 5.341	Fixed users Land mobile users Meteorological satellite users	Region 1 allocations. Sub-band allocations to be defined.
1 710-1 930 MHz FIXED MOBILE 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.386 5.387 5.388	1 710-1 930 MHz FIXED MOBILE 5.384A 5.388A 5.149 5.341 5.385 5.386 5.388	1 710-1 780 MHz IMT	Identified for IMT
		1 780-1 785 MHz IMT	Identified for IMT
		1 785-1 800 MHz IMT	Identified for IMT
		1 800-1 805 MHz IMT	Identified for IMT
		1 805- 1875 MHz IMT	Identified for IMT
		1 875-1 880 MHz IMT	Identified for IMT
		1 880-1 900 MHz IMT	Identified for IMT Authorised use of HAPS as IMT base stations with co-channel power flux-density limited to -127 dB(W/(m ² · MHz))
		1 900-1 920 MHz designated for IMT	
		1 920-1 930 MHz IMT	
1 930-1 970 MHz	1 930-1 970 MHz	1 930-1 970 MHz IMT	

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
FIXED MOBILE 5.388A 5.388B 5.388	FIXED MOBILE 5.388A 5.388		
1 970-1 980 MHz FIXED MOBILE 5.388A 5.388B 5.388	1 970-1 980 MHz FIXED MOBILE 5.388A 5.388B 5.388	1 970-1 980 MHz IMT	
1 980-2 010 MHz FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B 5.389F	1 980-2 010 MHz FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B	1 980-2 010 MHz designated for Mobile Satellite Terminals (uplink). Satellite component of IMT (according to Res 212(Rev. WRC-19)	Free circulation and use of radio equipment operating under the control of an authorized satellite system where no frequency planning or individual frequency assignment is needed.
2 010-2 025 MHz FIXED MOBILE 5.388A 5.388B 5.388	2 010-2 025 MHz FIXED MOBILE 5.388A 5.388	2 010-2 025 MHz designated for terrestrial IMT systems	Authorised use of HAPS as IMT base stations with co-channel power flux-density limited to -127 dB(W/(m ² · MHz))

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
2 025-2 110 MHz 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	2 025-2 110 MHz 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 uplink & downlink Earth exploration satellite uplink & downlink Fixed users Mobile users Space research uplink & downlink	Region 1 allocations
2 110-2 120 MHz FIXED MOBILE 5.388A 5.388B SPACE RESEARCH (deep space) (Earth-to-space) 5.388	2 110-2 120 MHz FIXED MOBILE 5.388A SPACE RESEARCH (deep space) (Earth-to-space) 5.388	2 110-2 120 MHz IMT	Identified for IMT Authorised use of HAPS as IMT base stations with co-channel power flux-density limited to -127 dB(W/(m ² · MHz))
2 120-2 160 MHz FIXED MOBILE 5.388A 5.388B 5.388	2 120-2 160 MHz FIXED MOBILE 5.388A 5.388	2 120-2 160 MHz IMT	Identified for IMT
2 160-2 170 MHz FIXED MOBILE 5.388A 5.388B 5.388	2 160-2 170 MHz FIXED MOBILE 5.388A 5.388	2 160-2 170 MHz IMT	Authorised use of HAPS as IMT base stations with co-channel power flux-density limited to -127 dB(W/(m ² · MHz))

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
2 170-2 200 MHz FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A 5.389F	2 170-2 200 MHz FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A	2 170-2 200 MHz designated for Mobile Satellite Terminals (downlink). Satellite component of IMT	Free circulation and use of radio equipment operating under the control of an authorized satellite system where no frequency planning or individual frequency assignment is needed.
2 200-2 290 MHz 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	2 200-2 290 MHz 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	2 200-2 290 MHz IMT	Wireless Access networks
2 290-2 300 MHz FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to- Earth)	2 290-2 300 MHz FIXED LAND MOBILE RW3 SPACE RESEARCH (deep space) (space-to- Earth)	2 290 – 2 300 MHz IMT	Wireless Access networks
2 300-2 450 MHz FIXED	2 300-2 450 MHz FIXED	2 300-2 400 MHz IMT	Identified for IMT

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
MOBILE 5.384A Amateur Radiolocation 5.150 5.282 5.395	MOBILE 5.384A Amateur Radiolocation 5.150 5.282 RW1 RW2	2 400-2 450 MHz	2 400-2 500 MHz Industrial, Scientific & Medical use. See RURA ISM band guidelines.
			2 400-2 483.5 MHz. Short Range Devices permitted
2 450-2 483.5 MHz FIXED MOBILE Radiolocation 5.150 5.397	2 450-2 483.5 MHz FIXED MOBILE Radiolocation 5.150 RW1 RW2	2 400-2483.5 MHz ISM and WLAN Band	2 400-2 500 MHz Industrial, Scientific & Medical use. See RURA ISM band guidelines.
			2 400-2 483.5 MHz. Short Range Devices permitted
2 483.5-2 500 MHz FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A Radiolocation 5.150 5.371 5.397 5.398 5.399 5.400 5.401 4urtu 5.402	2 483.5-2 500 MHz FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A Radiolocation 5.150 5.371 5.398 5.399 5.402 RW1	2 483.5- 2 500 MHz IMT	Wireless Access networks
		2 483.5-2 500 MHz ISM and WLAN Band	2 400-2 500 MHz Industrial, Scientific & Medical use. See RURA ISM band guidelines.

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
2 500-2 520 MHz FIXED 5.410 MOBILE except aeronautical mobile 5.384A 5.405 5.412	2 500-2 520 MHz FIXED 5.410 LAND MOBILE RW3 5.384A 5.412	2 500-2 520 MHz IMT	Identified for IMT
2 520-2 655 MHz FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.339 5.412 5.418B 5.418C	2 520-2 655 MHz FIXED 5.410 LAND MOBILE 5.384A RW3 BROADCASTING-SATELLITE 5.413 5.416 5.339 5.412 5.418B 5.418C	2 520-2 655 MHz IMT	Identified for IMT
2 655-2 670 MHz 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	2 655-2 670 MHz FIXED 5.410 LAND MOBILE 5.384A RW3 BROADCASTING-SATELLITE 5.208B 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	2 655-2 670 MHz IMT	Identified for IMT

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
2 670-2 690 MHz FIXED 5.410 MOBILE except aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	2 670-2 690 MHz FIXED 5.410 LAND MOBILE 5.384A RW3 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	2 670-2 690 MHz IMT	Identified for IMT
2 690-2 700 MHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.422	2 690-2 700 MHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite (passive) Radio astronomy Space research (passive)	Region 1 allocations
2 700-2 900 MHz AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424	2 700-2 900 MHz AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424	Aeronautical radionavigation radars	Region 1 allocation
2 900-3 100 MHz RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427	2 900-3 100 MHz RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427	Radar users	Region 1 allocations
3 100-3 300 MHz RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.149 5.428	3 100-3 300 MHz RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.149 5.428	Radar users	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
3 300-3 400 MHz RADIOLOCATION 5.149 5.429 5.429A 5.429B 5.430	3 300-3 400 MHz RADIOLOCATION 5.149 5.429A 5.429B	IMT	National allocation
3 400-3 600 MHz FIXED FIXED-SATELLITE (space-to-Earth) Mobile except aeronautical mobile 5.430A Radiolocation 5.431	3 400-3 600 MHz FIXED FIXED-SATELLITE (space-to-Earth) LAND MOBILE RW3 5.430A Radiolocation	IMT	Region 1 allocation Future VSAT (downlink) assignments to be excluded from this band
3 600-4 200 MHz FIXED FIXED-SATELLITE (space-to-Earth) Mobile	3 600-4 200 MHz FIXED FIXED-SATELLITE (space-to-Earth) Mobile	C Band VSAT (Downlink)	Region 1 allocation
4 200-4 400 MHz AERONAUTICAL RADIONAVIGATION 5.438AERONAUTICAL MOBILE (R) 5.436 5.439 5.440	4 200-4 400 MHz AERONAUTICAL RADIONAVIGATION 5.438 AERONAUTICAL MOBILE (R) 5.436 5.440	Radio altimeters – aircraft radio station Wireless Intra-Avionic Communication (WIAC) (5.436)	Region 1 allocation
4 400-4 500 MHz FIXED MOBILE 5.440A	4 400-4 500 MHz FIXED MOBILE 5.440A	Fixed users	Region 1 allocation.

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
4 500-4 800 MHz FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE 5.440A	4 500-4 800 MHz FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE 5.440A	C Band Fixed satellite downlink	Region 1 allocation
4 800-4 990 MHz FIXED MOBILE 5.440A 5.441A 5.441B 5.442 Radio astronomy 5.149 5.339 5.443	4 800-4 990 MHz FIXED MOBILE 5.440A 5.442 Radio astronomy 5.149 5.339 5.443	Fixed users	Region 1 allocation
4 990-5 000 MHz FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) 5.149	4 990-5 000 MHz FIXED LAND MOBILE RW3 RADIO ASTRONOMY Space research (passive) 5.149	Fixed users	Region 1 allocation
5 000-5 010 MHz AERONAUTICA MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-space)	5 000-5 010 MHz AERONAUTICA MOBILE-SATELLITE (R) 5.443AAAERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-space)	Aeronautical radionavigation Radio-navigation satellite uplink Aeronautical Mobile-Satellite (R)	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5 010-5 030 MHz AERONAUTICA MOBILE-SATELLITE (R) 5.443AAAERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.443B	5 010-5 030 MHz AERONAUTICA MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.443B	Aeronautical radionavigation Radio-navigation satellite uplink & downlink Aeronautical Mobile-Satellite (R)	Region 1 allocations
5 030-5 091 MHz AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION 5.444	5 030-5 091 MHz AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION 5.444	Aeronautical radionavigation Aeronautical Mobile (R) Aeronautical Mobile-Satellite (R)	Region 1 allocations
5 091-5 150 MHz FIXED-SATELLITE (Earth-to-space) 5.444A AERONAUTICAL RADIONAVIGATION AERONAUTICAL MOBILE 5.444BAERONAUTICAL MOBILE-SATELLITE (R) 5.443AA 5.444	5 091-5 150 MHz FIXED-SATELLITE (Earth-to-space) 5.444A AERONAUTICAL RADIONAVIGATION AERONAUTICAL MOBILE 5.444B AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA 5.444	Fixed Satellite (Eart-to-Space) Aeronautical radionavigation Aeronautical mobile Aeronautical Mobile-Satellite (R)	Region 1 allocations
5 150-5 250 MHz AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B	5 150-5 250 MHz AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (Earth-to-space) 5.447A LAND MOBILE 5.446A 5.446B	Land mobile 5 150-5 250 MHz WLAN	WLAN usage according to ITU-R Resolution 229 (WRC-19)

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5.446 5.446C 5.447 5.447B 5.447C 5.A116	5.446 5.446C 5.447B 5.447C		
5 250-5 255 MHz EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D MOBILE except aeronautical mobile 5.446A 5.447F 5.446C 5.447E 5.448 5.448A	5 250-5 255 MHz EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D LAND MOBILE 5.446A 5.447F RW3 5.447E 5.448A	Land mobile 5 250-5 255 MHz WLAN	WLAN usage according to ITU-R Resolution 229 (WRC-19)
5 255-5 350 MHz EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) MOBILE except aeronautical mobile 5.446A 5.447F 5.447E 5.448 5.448A	5 255-5 350 MHz EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) LAND MOBILE 5.446A 5.447F RW3 5.447E 5.448A	Land mobile 5 255-5 350 MHz WLAN	WLAN usage according to ITU-R Resolution 229 (WRC-19)
5 350-5 460 MHz EARTH EXPLORATION-SATELLITE (active) 5.448B SPACE RESEARCH (active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D	5 350-5 460 MHz EARTH EXPLORATION-SATELLITE (active) 5.448B SPACE RESEARCH (active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D	Aeronautical radionavigation - Airborne weather radar	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5 460-5 470 MHz RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.448D 5.448B	5 460-5 470 MHz RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.448D 5.448B	Radionavigation - airborne weather radar Earth exploration satellite service Space research Radiolocation	Region 1 allocations
5 470-5 570 MHz 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	5 470-5 570 MHz MARITIME RADIONAVIGATION LAND MOBILE 5.446A 5.450A RW3EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.450B 5.448B	Land mobile 5 470-5 5725 MHz WLAN	WLAN usage according to ITU-R Resolution 229 (WRC-19)
5 570-5 650 MHz MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B 5.450 5.451 5.452	5 570-5 650 MHz MARITIME RADIONAVIGATION LAND MOBILE 5.446A 5.450A RW3 RADIOLOCATION 5.450B 5.452	Land mobile 5 470-5 725 MHz WLAN	WLAN usage according to ITU-R Resolution 229 (WRC-19)

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5 650-5 725 MHz RADIOLOCATION MOBILE except aeronautical mobile 5.446A 5.450A Amateur Space research (deep space) 5.282 5.451 5.453 5.454 5.455	5 650-5 725 MHz RADIOLOCATION LAND MOBILE 5.446A 5.450A RW3 Amateur Space research (deep space) 5.282 5.453	Land mobile 5 470-5 725 MHz WLAN	WLAN usage according to ITU-R Resolution 229 (WRC-19)
5 725-5 830 MHz FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455	5 725-5 830 MHz FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.453 RW1 RW2	5 725-5 830 MHz WLAN and ISM.	Short Range Devices permitted.
5 830-5 850 MHz FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.451 5.453 5.455	5 830-5 850 MHz FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.453 RW1 RW2	5 830-5 850 MHz WLAN and ISM Band.	Short Range Devices permitted.
5 850-5 925 MHz FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.150	5 850-5 925 MHz FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.150 RW1 RW2	5 850-5 875 MHz WLAN and ISM Band	Short Range Devices permitted.
		5 850-5 925 MHz C Band VSAT (Uplink)	

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5 925-6 700 MHz FIXED 5.A120 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B MOBILE 5.457C 5.149 5.440 5.458	5 925-6 700 MHz FIXED FIXED-SATELLITE (Earth-to-space) 5.457A MOBILE 5.457C 5.149 5.440 5.458	5 925-6 425 MHz C Band VSAT (Uplink)	
		5 925-6 425 MHz FWS point to point radio relay links (6 GHz Lower Band according to ITU-R Rec F. 383.8)	Available for national fixed assignments
6 700-7 075 MHz FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE 5.458 5.458A 5.458B	6 700-7 075 MHz FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE 5.458 5.458A 5.458B	6 700-7 075 MHz FWS point to point radio relay links (6 GHz Upper Band according to ITU-R Rec F. 384.10)	Available for national fixed assignments
7 075-7 145 MHz FIXED MOBILE 5.458 5.459	7 075-7 145 MHz FIXED MOBILE 5.458	FWS point to point radio relay links (6 GHz Upper Band according to ITU-R Rec F. 384.10)	Available for national fixed assignments
7 145- 7 190MHz FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458 5.459	7 145- 7 190MHz FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458	FWS point to point radio relay links (7 GHz according to ITU-R Rec F. 385-6).	Available for national fixed assignments

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
7 190-7 235 MHz EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A 5.460B FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458 5.459	7 190-7 235 MHz EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A 5.460B FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458	FWS point to point radio relay links (7 GHz according to ITU-R Rec F. 385-6).	Available for national fixed assignments
7 235-7 250 MHz EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A FIXED MOBILE 5.458	7 235-7 250 MHz EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A FIXED MOBILE 5.458	FWS point to point radio relay links (7 GHz according to ITU-R Rec F. 385-6).	Available for national fixed assignments
7 250-7 300 MHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 5.461	7 250-7 300 MHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 5.461	FWS point to point radio relay links (7 GHz according to ITU-R Rec F. 385-6).	Available for national fixed assignments
7 300-7 375MHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461	7 300- 7 375MHz FIXED FIXED-SATELLITE (space-to-Earth) LAND MOBILE RW3 5.461	FWS point to point radio relay links (7 GHz according to ITU-R Rec F. 385-6).	Available for national fixed assignments
7 375-7 450 MHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile	375-7 450 MHz FIXED FIXED-SATELLITE (space-to-Earth)	FWS point to point radio relay links (7 GHz)	Available for national fixed assignments

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	LAND MOBILE RW3	according to ITU-R Rec F. 385-6).	
7 450-7 550 MHz FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB 5.461A	7 450-7 550 MHz FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) LAND MOBILE RW3 5.461A	FWS point to point radio relay links (7 GHz according to ITU-R Rec F. 385-6).	Available for national fixed assignments
7 550-7 750 MHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	7 550-7 750 MHz FIXED FIXED-SATELLITE (space-to-Earth) LAND MOBILE RW3	FWS point to point radio relay links (7 GHz according to ITU-R Rec F. 385-6).	Available for national fixed assignments
7 750-7 850 MHz FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B MOBILE except aeronautical mobile	7 750-7 850 MHz FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B LAND MOBILE RW3	FWS point to point radio relay links (8 GHz according to ITU-R Rec F. 386-8).	Available for national fixed assignments

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
7 850-7 900 MHz FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B MOBILE except aeronautical mobile	7 850-7 900 MHz FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B LAND MOBILE RW3	FWS point to point radio relay links (8 GHz according to ITU-R Rec F. 386-8).	Available for national fixed assignments
7 900-8 025 MHz FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.461	7 900-8 025 MHz FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.461	FWS point to point radio relay links (8 GHz according to ITU-R Rec F. 386-8).	Available for national fixed assignments
8 025-8 175 MHz EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	8 025-8 175 MHz EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	FWS point to point radio relay links (8 GHz according to ITU-R Rec F. 386-8).	Available for national fixed assignments
8 175-8 215 MHz EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	8 175-8 215 MHz EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	FWS point to point radio relay links (8 GHz according to ITU-R Rec F. 386-8).	Available for national fixed assignments

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
8 215-8 400 MHz EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	8 215-8 400 MHz EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	FWS point to point radio relay links (8 GHz according to ITU-R Rec F. 386-8).	Available for national fixed assignments
8 400-8 500 MHz FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.465 5.466	8 400-8 500 MHz FIXED LAND MOBILE RW3 SPACE RESEARCH (space-to-Earth) 5.465	FWS point to point radio relay links (8 GHz according to ITU-R Rec F. 386-8).	Available for national fixed assignments
8 500-8 550 MHz RADIOLOCATION 5.468 5.469	8 500-8 550 MHz RADIOLOCATION	Radiolocation	Region 1 allocation
8 550-8 650 MHz EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469 5.469A	8 550-8 650 MHz EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.469A	Earth exploration satellite Radiolocation Space research	Region 1 allocations
8 650-8 750 MHz RADIOLOCATION 5.468 5.469	8 650-8 750 MHz RADIOLOCATION	Radiolocation	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
8 750-8 850 MHz RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 5.471	8 750-8 850 MHz RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470	Radars for aeronautical radionavigation	Region 1 allocation
8 850-9 000 MHz RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473	8 850-9 000 MHz RADIOLOCATION	Radars	Region 1 allocation
9 000-9 200 MHz AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION 5.471 5.473A	9 000-9 200 MHz AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION 5.473A	Radars for aeronautical radionavigation (precision approach radars)	Region 1 allocation
9 200-9 300 MHz EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474 5.474D	9 200-9 300 MHz EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION 5.474	Earth Exploration-Satellite (active) Radiolocation radars for search & rescue radar transponders	Region 1 allocation
9 300-9 500 MHz RADIONAVIGATION 5.475 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.427 5.474 5.475A 5.475B 5.476A	9 300-9 500 MHz RADIONAVIGATION 5.475 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.427 5.474 5.475A 5.475B 5.476A	Radiolocation - weather radar	Region 1 allocation
9 500-9 800 MHz EARTH EXPLORATION-SATELLITE (active)	9 500-9 800 MHz EARTH EXPLORATION-SATELLITE (active)	Earth exploration satellite	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	Radiolocation Radionavigation Space research	
9 800-9 900 MHz RADIOLOCATION Earth exploration-satellite (active) Space research (active) Fixed 5.477 5.478 5.478A 5.478B	9 800-9 900 MHz RADIOLOCATION Earth exploration-satellite (active) Space research (active) Fixed 5.478A 5.478B	Radiolocation	Region 1 allocation
9 900-10 000 MHz EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Fixed 5.474D 5.477 5.478 5.479	9 900-10 000 MHz EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Fixed 5.474D 5.479	Earth Exploration-Satellite (active) Radiolocation	Region 1 allocation
10-10.4 GHz EARTH EXPLORATIONSATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.474D 5.479	10-10.4 GHz EARTH EXPLORATIONSATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.474D 5.479	Earth Exploration-Satellite(active) Fixed Mobile Radiolocation	Region 1 allocation
10.4-10.45 GHz FIXED	10.4-10.45 GHz FIXED	Fixed Mobile	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
MOBILE RADIOLOCATION Amateur	MOBILE RADIOLOCATION Amateur	Radiolocation	
10.45-10.5 GHz RADIOLOCATION Amateur Amateur-satellite 5.481	10.45-10.5 GHz RADIOLOCATION Amateur Amateur-satellite	Radiolocation	Region 1 allocation
10.5-10.55 GHz FIXED MOBILE Radiolocation	10.5-10.55 GHz FIXED MOBILE Radiolocation	FWS point to point radio relay links (10 GHz Band According to ITU-R Rec F. 747-10).	Available for national fixed assignments
10.55-10.6 GHz FIXED MOBILE except aeronautical mobile Radiolocation	10.55-10.6 GHz FIXED LAND MOBILE RW3 Radiolocation	FWS point to point radio relay links (10 GHz Band According to ITU-R Rec F. 747-10).	Available for national fixed assignments
10.6-10.68 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482 5.482A	10.6-10.68 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED LAND MOBILE RW3 RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482 5.482A	FWS point to point radio relay links (10 GHz Band According to ITU-R Rec F. 747-10).	Available for national fixed assignments

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
10.68-10.7 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.483	10.68-10.7 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite Radio astronomy Space research	Region 1 allocations
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 LAND MOBILE RW3	FWS point to point radio relay links (11GHz Band according to ITU-R Rec F. 387-10)	Available for national fixed assignments
		Ku Band VSAT downlink National allotment for fixed satellite downlink- Appendix 30B. 5.441	National allocations
		Fixed satellite uplinks are limited to feeder links for BSS. 5.484	
10.95-11.2 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	10.95-11.2 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 LAND MOBILE RW3	FWS point to point radio relay links (11GHz Band according to ITU-R Rec F. 387-10)	Available for national fixed assignments Identified also for Unmanned Aircraft
		Ku Band VSAT downlink	

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
		National allotment for fixed satellite downlink- Appendix 30B.	
11.2-11.45 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	11.2-11.45 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 LAND MOBILE RW3	FWS point to point radio relay links (11GHz Band according to ITU-R Rec F. 387-10) Ku Band VSAT downlink National allotment for fixed satellite downlink- Appendix 30B. 5.441 Fixed satellite uplinks are limited to feeder links for BSS. 5.484	Available for national fixed assignments
11.45-11.7 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	11.45-11.7 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 LAND MOBILE RW3	FWS point to point radio relay links (11GHz Band according to ITU-R Rec F. 387-10) Ku Band VSAT downlink	Available for national fixed assignments Identified also for Unmanned Aircraft

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
		National allotment for fixed satellite downlink- Appendix 30B. Fixed satellite uplinks are limited to feeder links for BSS. 5.484	
11.7-12.5 GHz FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492 5.487 5.487A	11.7-12.5 GHz FIXED LAND MOBILE RW3 BROADCASTING BROADCASTING-SATELLITE 5.492 5.487 5.487A	Broadcasting Satellite national plan assignments and listed operational downlinks - Appendix 30.	Digital and analogue satellite TV reception
12.5-12.75 GHz FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.494 5.495 5.496	12.5-12.75 GHz FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space)	Ku Band VSAT	Identified also for Unmanned Aircraft
12.75-13.25 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.441 MOBILE Space research (deep space) (space-to-Earth)	12.75-13.25 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.441 MOBILE Space research (deep space) (space-to-Earth)	FWS point to point radio relay links (13 GHz Band according to ITU-R Rec F. 497-7)	Available for national fixed assignments
13.25-13.4 GHz EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active)	13.25-13.4 GHz EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active)	Earth exploration satellite Aeronautical radionavigation	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
5.498A 5.499	5.498A 5.499	Space research	
13.4-13.65 GHz 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) 5.499E 5.500 5.501 5.501B	13.4-13.65 GHz EARTH EXPLORATION-SATELLITE (active) FIXED-SATELLITE (space-to-Earth) 5.499A 5.499B RADIOLOCATION SPACE RESEARCH Standard frequency and time signal-satellite (Earth-to-space) 5.501B	Earth exploration satellite Fixed satellite (Space-to-Earth) Radiolocation Space research	Region 1 allocations
13.65-13.75 GHz 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	13.65 -13.75 GHz EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A Standard frequency and time signal-satellite (Earth-to-space) 5.501B	Earth exploration satellite Radiolocation Space research	Region 1 allocations
13.75-14 GHz 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	13.75-14 GHz 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	Fixed satellite uplink Radiolocation	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
<p>14-14.25 GHz FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.504C 5.506A Space research 5.504A 5.505</p>	<p>14-14.25 GHz FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.506A Space research 5.504A</p>	<p>Ku Band VSAT (uplink)</p>	<p>Identified also for Unmanned Aircraft</p>
<p>14.25-14.3 GHz FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 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</p>	<p>14.25-14.3 GHz FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A 5.484B 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.508A Space research 5.504A</p>	<p>Ku Band VSAT (uplink)</p>	<p>Identified also for Unmanned Aircraft</p>

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
<p>14.3-14.4 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Radionavigation-satellite 5.504A</p>	<p>14.3-14.4 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A 5.484B 5.506 5.506B LAND MOBILE RW3 Mobile-satellite (Earth-to-space) 5.504B 5.506A Radionavigation-satellite 5.504A</p>	<p>Ku Band VSAT (uplink)</p>	<p>Identified also for unmanned aircraft</p>
<p>14.4-14.47 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 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</p>	<p>14.4-14.47 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A 5.484B 5.506 5.506B LAND MOBILE RW3 Mobile-satellite (Earth-to-space) 5.504B 5.506A Space research (space-to-Earth) 5.504A</p>	<p>Ku Band VSAT (uplink)</p>	<p>Identified also for unmanned aircraft</p>

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
14.47-14.5 GHz 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	14.47-14.5 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A 5.506 5.506B LAND MOBILE RW3 Mobile-satellite (Earth-to-space) 5.504B 5.506A Radio astronomy 5.149 5.504A	Ku Band VSAT (uplink)	
14.5-14.75 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.509B 5.509C 5.509D 5.509E 5.509F 5.510 MOBILE Space research	14.5-14.75 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.509F 5.510 MOBILE Space research	FWS point to point radio relay links (15 GHz Band according to ITU-R Rec F. 636-3)	Available for national fixed assignments
14.75-14.8 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.510 MOBILE Space research 5.509G	14.75-14.8 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.510 MOBILE Space research 5.509G	FWS point to point radio relay links (15 GHz Band according to ITU-R Rec F. 636-3)	Available for national fixed assignments
14.8-15.35 GHz FIXED MOBILE Space research 5.339	14.8-15.35 GHz FIXED MOBILE Space research 5.339	FWS point to point radio relay links (15 GHz Band according to ITU-R Rec F. 636-3)	Available for national fixed assignments

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
15.35-15.4 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.511	15.35-15.4 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite Radio astronomy Space research	Region 1 allocations
15.4-15.43 GHz RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	15.4-15.43 GHz RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	Aeronautical radionavigation	Region 1 allocation
15.43-15.63 GHz FIXED-SATELLITE (Earth-to-space) 5.511A RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511C	15.43-15.63 GHz FIXED-SATELLITE (Earth-to-space) 5.511A RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511C	Fixed satellite uplink Aeronautical radionavigation Radiolocation	Region 1 allocations
15.63-15.7 GHz RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	15.63-15.7 GHz RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	Aeronautical radionavigation Radiolocation	Region 1 allocation
15.7-16.6 GHz RADIOLOCATION 5.512 5.513	15.7-16.6 GHz RADIOLOCATION	Radiolocation	Region 1 allocation
16.6-17.1 GHz RADIOLOCATION Space research (deep space) (Earth-to-space) 5.512 5.513	16.6-17.1 GHz RADIOLOCATION Space research (deep space) (Earth-to-space)	Radiolocation	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
17.1-17.2 GHz RADIOLOCATION 5.512 5.513	17.1-17.2 GHz RADIOLOCATION	Radiolocation	Region 1 allocation
17.2-17.3 GHz EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.512 5.513 5.513A	17.2-17.3 GHz EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.513A	Earth exploration satellite Radiolocation Space research	Region 1 allocations
17.3-17.7 GHz FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A 5.516B Radiolocation 5.514	17.3-17.7 GHz FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A 5.516B Radiolocation	17.3-17.7 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B	Region 1 allocations
		17.3-17.7 GHz Feeder link plans for Broadcasting Satellite Service (Appendix 30A)	Region 1 allocations
17.7-18.1 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.A15 (Earth-to-space) 5.516	17.7-18.1 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.A15 (Earth-to-space) 5.516	FWS point to point radio links (18 GHz Band according to ITU-R Rec F. 595-9)	Available for national fixed assignments ESIM communication in accordance to Resolution COM5/6 (WRC-19)

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
MOBILE	MOBILE	17.7-18.1 GHz Feeder link plans for Broadcasting Satellite Service (Appendix 30A)	Region1 allocations ESIM communication in accordance to Resolution COM5/6 (WRC-19)
18.1-18.4 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5. A15 (Earth-to-space) 5.520 MOBILE 5.519 5.521	18.1-18.4 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.A15 (Earth-to-space) 5.520 MOBILE 5.519	FWS point to point radio links (18 GHz Band according to ITU-R Rec F. 595-9)	Available for national fixed assignments ESIM communication in accordance to Resolution COM5/6 (WRC-19)
18.4-18.6 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B MOBILE	18.4-18.6 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B MOBILE	FWS point to point radio links (18 GHz Band according to ITU-R Rec F. 595-9)	Available for national fixed assignments ESIM communication in accordance to Resolution COM5/6 (WRC-19)
18.6-18.8 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.522B 5.A15 MOBILE except aeronautical mobile Space research (passive) 5.522A 5.522C	18.6-18.8 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.522B LAND MOBILE RW3 Space research (passive) 5.522A	FWS point to point radio links (18 GHz Band according to ITU-R Rec F. 595-9)	Available for national fixed assignments ESIM communication in accordance to Resolution COM5/6 (WRC-19)

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
18.8-19.3 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.516.B 5.523A 5.A15 MOBILE	18.8-19.3 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.516.B 5.523A MOBILE	FWS point to point radio links (18 GHz Band according to ITU-R Rec F. 595-9)	Available for national fixed assignments ESIM communication in accordance to Resolution COM5/6 (WRC-19)
19.3-19.7 GHz FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.523B 5.523C 5.523D 5.523E 5.A15 MOBILE	19.3-19.7 GHz FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.523B 5.523C 5.523D 5.523E MOBILE	FWS point to point radio links (18 GHz Band according to ITU-R Rec F. 595-9)	Available for national fixed assignments ESIM communication in accordance to Resolution COM5/6 (WRC-19)
19.7-20.1GHz FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A Mobile-satellite (space-to-Earth)	19.7-20.1GHz FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A Mobile-satellite (space-to-Earth)	19.7-20.1 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B	Region 1 allocation Identified also for Unmanned Aircraft
20.1-20.2 GHz FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A 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 5.484B 5.516B 5.527A MOBILE-SATELLITE (space-to-Earth) 5.525 5.526 5.527 5.528	20.1-20.2 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B	Region 1 allocation Identified also for Unmanned Aircraft

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
20.2-21.2 GHz FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) 5.524	20.2-21.2 GHz FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth)	Fixed satellite downlink Mobile satellite downlink	Region 1 allocations
21.2-21.4 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	21.2-21.4 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	Earth exploration satellite Fixed Mobile Space research	Region 1 allocations
21.4-22 GHz FIXED MOBILE BROADCASTING-SATELLITE 5.208B 5.530A 5.530B	21.4-22 GHz FIXED MOBILE BROADCASTING-SATELLITE 5.208B 5.530A 5.530B	Fixed Mobile Broadcasting satellite	Region 1 allocations
22-22.21 GHz FIXED MOBILE except aeronautical mobile 5.149	22-22.21 GHz FIXED LAND MOBILE RW3 5.149	FWS point to point radio relay links (23 GHz Band according to ITU-R Rec F. 637-3 Annex 3)	Available for national fixed assignments

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
22.21-22.5 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.532	22.21-22.5 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED LAND MOBILE RW3 RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.532	FWS point to point radio relay links (23 GHz Band according to ITU-R Rec F. 637-3 Annex 3)	Available for national fixed assignments
22.5-22.55 GHz FIXED MOBILE	22.5-22.55 GHz FIXED MOBILE	FWS point to point radio relay links (23 GHz Band according to ITU-R Rec F. 637-3 Annex 3)	Available for national fixed assignments
22.55-23.15 GHz FIXED INTER-SATELLITE 5.338A MOBILE SPACE RESEARCH (Earth-to-space) 5.532A 5.149	22.55-23.55 GHz FIXED INTER-SATELLITE 5.338A MOBILE SPACE RESEARCH (Earth-to-space) 5.532A 5.149	FWS point to point radio relay links (23 GHz Band according to ITU-R Rec F. 637-3 Annex 3)	Available for national fixed assignments
23.15-23.55 GHz FIXED INTER-SATELLITE 5.338A MOBILE	23.15-23.55 GHz FIXED INTER-SATELLITE 5.338A MOBILE	FWS point to point radio relay links (23 GHz Band according to ITU-R Rec F. 637-3 Annex 3)	Available for national fixed assignments

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
23.55-23.6 GHz FIXED MOBILE	23.55-23.6 GHz FIXED MOBILE	FWS point to point radio relay links (23 GHz Band according to ITU-R RecF. 637-3 Annex 3)	Available for national fixed assignments
23.6-24 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	23.6-24 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite Radio astronomy Space research	Region 1 allocation
24-24.05 GHz AMATEUR AMATEUR-SATELLITE 5.150	24-24.05 GHz AMATEUR AMATEUR-SATELLITE 5.150 RW1 RW2	Amateur users Amateur satellite users	Short Range Devices permitted 24-24.25 GHz.
24.05-24.25 GHz RADIOLOCATION Amateur Earth exploration-satellite (active) 5.150	24.05-24.25 GHz RADIOLOCATION Amateur Earth exploration-satellite (active) 5.150 RW1 RW2	Radiolocation	Short Range Devices permitted 24-24.25 GHz.
24.25-24.45 GHz FIXED <u>MOBILE except aeronautical mobile 5.A113</u> <u>5.338A</u>	24.25-24.45 GHz FIXED LAND MOBILE	24.25-24.45 IMT according to Res 750 (Rev. WRC-19)	Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19) Authorised use by HAPS (WRC-19)

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
24.45-24.65 GHz FIXED INTER-SATELLITE MOBILE except aeronautical mobile ADD 5.A113 MOD 5.338A	24.45-24.65 GHz FIXED INTER-SATELLITE LAND MOBILE	24.45-24.65 IMT according to Res 750 (Rev. WRC-19)	Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19) Authorised use by HAPS (WRC-19)
24.65-24.75 GHz FIXED INTER-SATELLITE (Earth-to-space) 5.532B INTER-SATELLITE MOBILE except aeronautical mobile ADD 5.A113 5.338A	24.65-24.75 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.532B INTER-SATELLITE LAND MOBILE	24.65-24.75 IMT according to Res 750 (Rev. WRC-19)	Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19) Authorised use by HAPS (WRC-19)
24.75-25.25 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.532B MOBILE except aeronautical mobile ADD 5.A113 MOD 5.338A	24.75-25.25 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.532B	24.75-25.25 GHz IMT according to Res 750 (Rev. WRC-19)	Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19) Authorised use by HAPS (WRC-19)
25.25-25.5 GHz FIXED 5.D114 INTER-SATELLITE 5.536 MOBILE 5.A113 5.338A Standard frequency and time signal-satellite (Earth-to-space)	25.25-25.5 GHz FIXED INTER-SATELLITE 5.536 MOBILE Standard frequency and time signal-satellite (Earth-to-space)	25.25-25.5 GHz IMT according to Res 750 (Rev. WRC-19)	Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19)

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
25.5-27 GHz EARTH EXPLORATION-SATELLITE (space-to Earth) 5.536B FIXED 5.D114 INTER-SATELLITE 5.536 MOBILE 5.A113 5.338A SPACE RESEARCH (space-to-Earth) 5.536C Standard frequency and time signal-satellite (Earth-to-space) 5.536A	25.5-27 GHz EARTH EXPLORATION-SATELLITE (space-to Earth) FIXED INTER-SATELLITE 5.536 MOBILE SPACE RESEARCH (space-to-Earth) Standard frequency and time signal-satellite (Earth-to-space) 5.536A	25.5-27 GHz IMT according to Res 750 (Rev. WRC-19)	Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19)
27-27.5 GHz FIXED INTER-SATELLITE 5.536 MOBILE 5.A113 5.338A 5.540 5.542	27-27.5 GHz FIXED INTER-SATELLITE 5.536 MOBILE	27-27.5 GHz IMT according to Res 750 (Rev. WRC-19)	Globally Harmonised band for IMT (WRC-19)
27.5-28.5 GHz FIXED 5.537A FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 5.A15 MOBILE 5.538 5.540	27.5-28.5 GHz FIXED 5.537A FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 MOBILE 5.538 5.540	27.5-27.82 GHz designated for HDFSS uncoordinated Earth station uplinks according to Res.143 (Rev. WRC-07) and 5.516B 27.82-28.45 GHz (28 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F. 748-4)	To be made available for national fixed assignments

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
		28.45-28.5 GHz designated for HDFSS uncoordinated Earth station uplinks according to Res.143 (Rev. WRC-07) and 5.516B	
28.5-29.1 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.523A 5.539 5.A15 MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	28.5-29.1 GHz 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	28.5-28.94 GHz designated for HDFSS uncoordinated Earth station uplinks according to Res.143 (Rev. WRC-07) and 5.516B 28.94-29.1 GHz (28 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F. 748-4)	To be made available for national fixed assignments
29.1-29.5 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.516B 5.523C 5.523E 5.535A 5.539 5.541A 5.A15 MOBILE	29.1-29.5 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.516B 5.523C 5.523E 5.535A 5.539 5.541A 5.A15	29.1-29.46 GHz (28 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F. 748-4)	To be made available for national fixed assignments

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
Earth exploration-satellite (Earth-to-space) 5.541 5.540	MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	29.46-29.5 GHz designated for HDFSS uncoordinated Earth station uplinks according to Res.143 (Rev. WRC-07) and 5.516B	
29.5-29.9 GHz FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.527A 5.539 Earth exploration-satellite (Earth-to-space) 5.541 Mobile-satellite (Earth-to-space) 5.540 5.542	29.5-29.9 GHz FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.527A 5.539 Earth exploration-satellite (Earth-to-space) 5.541 Mobile-satellite (Earth-to-space) 5.540 5.542	29.5-29.9 GHz designated for HDFSS uncoordinated Earth station uplinks according to Res.143 (Rev. WRC-07) and 5.516B	Identified also for Unmanned Aircraft
29.9-30 GHz FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 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	29.9-30 GHz FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 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	29.9-30 GHz designated for HDFSS uncoordinated Earth station uplinks according to Res.143 (Rev. WRC-07) and 5.516B	To be made available for national fixed assignments Identified also for unmanned Aircraft
30-31 GHz FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE-SATELLITE (Earth-to-space) Standard frequency and time signal-satellite (space-to-Earth) 5.542	30-31 GHz FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE-SATELLITE (Earth-to-space) Standard frequency and time signal-satellite (space-to-Earth)	Fixed satellite uplink Mobile satellite uplink	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
31-31.3 GHz FIXED 5.338A 5.F114 MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research 5.544 5.545 5.149	31-31.3 GHz FIXED 5.338A 5.F114 MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research 5.544 5.545 5.149	31-31.3 GHz (31 GHz Band) designated for FWS (e.g. HDFSS according to ITU-R Rec F. 746-9)	To be made available for national fixed assignments Authorised use of HAPS according to Resolution COM4/5 (WRC-19)
31.3-31.5 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	31.3-31.5 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite Radio astronomy Space research	Region 1 allocations
31.5-31.8 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.546	31.5-31.8 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Land Mobile RW3 5.149	Earth exploration satellite Radio astronomy Space research	Region 1 allocations
31.8-32 GHz FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547B 5.548	31.8-32 GHz FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547B 5.548	31.8-32 GHz (32 GHz Band) designated for FWS (e.g. HDFS according to ITU-R Rec F. 1520-2)	To be made available for national fixed assignments

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
32-32.3 GHz FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547C 5.548	32-32.3 GHz FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547C 5.548	32-32.3 GHz (32 GHz Band) designated for FWS (e.g. HDFS according to ITU-R Rec F. 1520-2)	To be made available for national fixed assignments
32.3-33 GHz FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.547D 5.548	32.3-33 GHz FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.547D 5.548	32.3-33 GHz (32 GHz Band) designated for FWS (e.g. HDFS according to ITU-R Rec F. 1520-2)	To be made available for national fixed assignments
33-33.4 GHz FIXED 5.547A RADIONAVIGATION 5.547 5.547E	33-33.4 GHz FIXED 5.547A RADIONAVIGATION 5.547 5.547E	33-33.4 GHz (32 GHz Band) designated for FWS (e.g. HDFS according to ITU-R Rec F. 1520-2)	To be made available for national fixed assignments
33.4-34.2 GHz RADIOLOCATION 5.549	33.4-34.2 GHz RADIOLOCATION	Radiolocation	Region 1 allocation
34.2-34.7 GHz RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) 5.549	34.2-34.7 GHz RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space)	Radiolocation Space research feederlink	Region 1 allocation
34.7-35.2 GHz RADIOLOCATION	34.7-35.2 GHz RADIOLOCATION	Radiolocation	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
Space research 5.550 5.549	Space research		
35.2-35.5 GHz METEOROLOGICAL AIDS RADIOLOCATION 5.549	35.2-35.5 GHz METEOROLOGICAL AIDS RADIOLOCATION	Meteorological aids Radiolocation	Region 1 allocation
35.5-36 GHz METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549 5.549A	35.5-36 GHz METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549A	Meteorological aids Earth exploration satellite Radiolocation Space research	Region 1 allocation
36-37 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	36-37 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	Earth exploration satellite Fixed Mobile Space research	Region 1 allocation
37-37.5 GHz FIXED MOBILE except aeronautical mobile 5.BCD113 SPACE RESEARCH (space-to-Earth) 5.547	37-37.5 GHz FIXED MOBILE RW3 SPACE RESEARCH (space-to-Earth) 5.547	37-39.5 GHz (38 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F. 749-2)	Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19)

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
<p>37.5-38 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.A16 MOBILE except aeronautical mobile 5.BCD113 SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547</p>	<p>37.5-38 GHz FIXED FIXED-SATELLITE (space-to-Earth) LAND MOBILE RW3 SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547</p>	<p>37-39.5 GHz (38 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F. 749-2)</p>	<p>Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19)</p>
<p>38-39.5 GHz FIXED 5.G114 FIXED-SATELLITE (space-to-Earth) 5.A16 MOBILE 5.BCD113 Earth exploration-satellite (space-to-Earth) 5.547</p>	<p>38-39.5 GHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Earth exploration-satellite (space-to-Earth) 5.547</p>	<p>37-39.5 GHz (38 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F. 749-2)</p>	<p>Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19) Authorised use of HAPS according to Resolution COM4/6 (WRC-19)</p>
<p>39.5-40 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.A16 MOBILE 5.BCD113 MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547 5.B16</p>	<p>39.5-40 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547</p>	<p>39.5-40 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B</p>	<p>Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19)</p>

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
<p>40-40.5 GHz EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.A16 MOBILE 5.BCD113 MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth) 5.B16</p>	<p>40-40.5 GHz 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)</p>	<p>Earth exploration satellite uplink Fixed Fixed satellite downlink Mobile Mobile satellite downlink Space research uplink</p>	<p>Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19)</p>
<p>40.5-41 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.A16 LAND MOBILE 5.BCD113 BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile 5.547</p>	<p>40.5-41 GHz FIXED FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE LAND MOBILE 5.547</p>	<p>Fixed Fixed satellite downlink Broadcasting Broadcasting satellite</p>	<p>Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19)</p>

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
41-42.5 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.A16 LAND MOBILE 5. BCD113 BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile 5.547 5.551F 5.551H 5.551I	41-42.5 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.516B BROADCASTING BROADCASTING-SATELLITE LAND MOBILE 5.547 5.551F 5.551H 5.551I	Fixed Fixed satellite downlink Broadcasting Broadcasting satellite Land mobile	Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19)
42.5-43.5 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except aeronautical mobile 5.BCD113 RADIO ASTRONOMY 5.149 5.547	42.5-43.5 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.552 LAND MOBILE RW3 RADIO ASTRONOMY 5.149 5.547	Fixed Fixed satellite downlink	Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19)
43.5-47 GHz MOBILE 5.553 5.F113 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	43.5-47 GHz MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	Mobile Mobile satellite Radionavigation Radionavigation satellite	Region 1 allocations 45.5-47GHz authorised for use by IMT Regionally harmonised (WRC-19)
47-47.2 GHz AMATEUR AMATEUR-SATELLITE	47-47.2 GHz AMATEUR AMATEUR-SATELLITE	Amateur Amateur satellite	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
47.2-47.5 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.552 5.A16 MOBILE 5.H113 5.552A	47.2-47.5 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.H113 5.552A	Fixed Fixed satellite uplink Mobile	Region 1 allocations
47.5-47.9 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.552 5.A16 (space-to-Earth) 5.516B 5.554A MOBILE 5.H113	47.5-47.9 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B 5.554A MOBILE 5.H113	47.5-47.9 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B	47.2-48.2GHz authorised for use by IMT Regionally harmonised (WRC-19)
47.9-48.2 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.552 5.A16 MOBILE 5.H113 5.552A	47.9-48.2 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.H113 5.552A	Fixed Fixed satellite uplink Mobile	Region 1 allocations Identified for IMT
48.2-48.54 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.552 5.A16 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	48.2-48.54 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	48.2-48.54 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B	

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
48.54-49.44 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.552 5.A16 MOBILE 5.149 5.340 5.555	48.54-49.44 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.149 5.340 5.555	Fixed Fixed satellite uplink Mobile	Region 1 allocations
49.44-50.2 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.552 5.A16 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	49.44-50.2 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	49.44-50.2 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B	
50.2-50.4 GHz EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	50.2-50.4 GHz EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	Earth exploration satellite Space research	Region 1 allocations
50.4-51.4 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.A16 MOBILE Mobile-satellite (Earth-to-space)	50.4-51.4 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE Mobile-satellite (Earth-to-space)	Fixed Fixed satellite Mobile	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
51.4-52.4 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.A919 MOBILE 5.547 5.556 5.338A	51.4-52.4 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.A919 MOBILE 5.547 5.556 5.338A	51.4-52.4 GHz (52 GHz Band) designated for FWS (e.g. short-range digital point-to-point radio links in HDFS according to ITU-R Rec F.1496-1)	To be made available for national fixed assignments FIXED-SATELLITE
52.4-52.6 GHz FIXED 5.338A MOBILE 5.547 5.556	52.4-52.6 GHz FIXED 5.338A MOBILE 5.547 5.556	52.4-52.6 GHz (52 GHz Band) designated for FWS (e.g. short-range digital point-to-point radio links in HDFS according to ITU-R Rec F.1496-1)	To be made available for national fixed assignments
52.6-54.25 GHz EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	52.6-54.25 GHz EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	Earth exploration satellite Space research	Region 1 allocation
54.25-55.78 GHz EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive) 5.556B	54.25-55.78 GHz EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive) 5.556B	Earth exploration satellite Inter-satellite Space research	Region 1 allocation
55.78-56.9 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A	55.78-56.9 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A	55.78-59 GHz (57 GHz Band) designated for FWS (e.g. short-range digital point-to-point radio links in HDFS)	

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	according to ITU-R Rec F.1497-1)	
56.9-57GHz EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	56.9-57GHz EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	55.78-59 GHz (57 GHz Band) designated for FWS (e.g. short-range digital point-to-point radio links in HDFS according to ITU-R Rec F.1497-1)	To be made available for national fixed assignments
57-58.2 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	57-58.2 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	55.78-59 GHz designated for FWS (e.g. short-range digital point-to-point radio links in HDFS according to ITU-R Rec F.1497-1)	To be made available for national fixed assignments
58.2-59 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	58.2-59 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	55.78-59 GHz designated for FWS (e.g. short-range digital point-to-point radio links in HDFS according to ITU-R Rec F.1497-1)	To be made available for national fixed assignments

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
59-59.3 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	59-59.3 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	Earth exploration satellite Fixed Inter-satellite Mobile Radiolocation Space research	Region 1 allocations
59.3-64 GHz FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	59.3-64 GHz FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138 RW1 RW2	Fixed Inter-satellite Mobile Radiolocation	Short Range Devices permitted 61-61.5 GHz.
64-65 GHz FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	64-65 GHz FIXED INTER-SATELLITE LAND MOBILE RW3 5.547 5.556	Fixed Inter-satellite Land mobile	Region 1 and national allocations
65-66 GHz EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	65-66 GHz EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE LAND MOBILE RW3 SPACE RESEARCH 5.547	Earth exploration satellite Fixed Inter-satellite Land mobile Space research	Region 1 and national allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
66-71 GHz INTER-SATELLITE MOBILE 5.553 5.558 5.J113 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	66-71 GHz INTER-SATELLITE MOBILE 5.553 5.558 5.J113 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	Inter-satellite Mobile Mobile satellite Radionavigation Radionavigation satellite	Identified for IMT (terrestrial component) Globally Harmonised band for IMT (WRC-19)
71-74 GHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	71-74 GHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	Fixed Fixed satellite downlink Mobile Mobile satellite downlink	Region 1 allocations
74-76 GHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.561	74-76 GHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.561	Fixed Fixed satellite downlink Mobile Broadcasting Broadcasting satellite	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
76-77.5 GHz RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	76-77.5 GHz RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	Radio astronomy Radiolocation	Region 1 allocations
77.5-78 GHz AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.559B Radio astronomy Space research (space-to-Earth) 5.149	77.5-78 GHz AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.559B Radio astronomy Space research (space-to-Earth) 5.149	Amateur Amateur satellite Automotive Radars applications	Region 1 allocations
78-79 GHz RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) 5.149 5.560	78-79 GHz RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) 5.149 5.560	Radiolocation	Region 1 allocation

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
79-81 GHz RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	79-81 GHz RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	Radio astronomy Radiolocation	Region 1 allocations
81-84 GHz 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	81-84 GHz 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	Fixed Fixed satellite Uplink Mobile Mobile satellite uplink Radio astronomy	Region 1 allocations
84-86 GHz FIXED 5.338A FIXED-SATELLITE (Earth-to-space) 5.561B MOBILE RADIO ASTRONOMY 5.149	84-86 GHz FIXED 5.338A FIXED-SATELLITE (Earth-to-space) 5.561B MOBILE RADIO ASTRONOMY 5.149	Fixed Fixed satellite uplink Mobile Radio astronomy	Region 1 allocations
86-92 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	86-92 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite Radio astronomy Space research	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
92-94 GHz FIXED 5.338A MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	92-94 GHz FIXED 5.338A MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	Fixed Mobile Radio astronomy Radiolocation	Region 1 allocations
94-94.1 GHz EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	94-94.1 GHz EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	Earth exploration satellite Radiolocation Space research	Region 1 allocations
94.1-95 GHz FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	94.1-95 GHz FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	Fixed Mobile Radio astronomy Radiolocation	Region 1 allocations
95-100 GHz FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	95-100 GHz FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	Fixed Mobile Radio astronomy Radiolocation Radionavigation Radionavigation satellite	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
100-102 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	100-102 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	Earth exploration satellite Radio astronomy Space research	Region 1 allocations
102-105 GHz FIXED MOBILE RADIO ASTRONOMY 5.149 5.341	102-105 GHz FIXED MOBILE RADIO ASTRONOMY 5.149 5.341	Fixed Mobile Radio astronomy	Region 1 allocations
105-109.5 GHz FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	105-109.5 GHz FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	Fixed Mobile Radio astronomy Space research	Region 1 allocations
109.5-111.8 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	109.5-111.8 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	Earth exploration satellite Radio astronomy Space research	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
111.8-114.25 GHz FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	111.8-114.25 GHz FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	Fixed Mobile Radio astronomy Space research	Region 1 allocations
114.25-116 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	114.25-116 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	Earth exploration satellite Radio astronomy Space research	Region 1 allocations
116-119.98 GHz EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341	116-119.98 GHz EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341	Earth exploration satellite Inter-satellite Space research	Region 1 allocations
119.98-122.25 GHz EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.138 5.341	119.98-122.25 GHz EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.138 5.341 RW1 RW2	Earth exploration satellite Inter-satellite Space research	Region 1 allocations Short Range Devices permitted 122-123 GHz.

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
122.25-123 GHz FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138	122.25-123 GHz FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138 RW1 RW2	Fixed Inter-satellite Mobile	Region 1 allocations Short Range Devices permitted 122-123 GHz.
123-130 GHz FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio astronomy 5.562D 5.149 5.554	123-130 GHz FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio astronomy 5.562D 5.149 5.554	Fixed satellite downlink Mobile satellite downlink Radionavigation Radionavigation satellite	Region 1 allocations
130-134 GHz EARTH EXPLORATION-SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.149 5.562A	130-134 GHz EARTH EXPLORATION-SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.149 5.562A	Earth exploration satellite Fixed Inter-satellite Mobile Radio astronomy	Region 1 allocations
134-136 GHz AMATEUR AMATEUR-SATELLITE Radio astronomy	134-136 GHz AMATEUR AMATEUR-SATELLITE Radio astronomy	Amateur Amateur satellite	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
136-141 GHz RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.149	136-141 GHz RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.149	Radio astronomy Radiolocation	Region 1 allocations
141-148.5 GHz FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	141-148.5 GHz FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	Fixed Mobile Radio astronomy Radiolocation	Region 1 allocations
148.5-151.5 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	148.5-151.5 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite Radio astronomy Space research	Region 1 allocations
151.5-155.5 GHz FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	151.5-155.5 GHz FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	Fixed Mobile Radio Astronomy Radiolocation	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
155.5-158.5 GHz FIXED MOBILE RADIO ASTRONOMY 5.149	155.5-158.5 GHz FIXED MOBILE RADIO ASTRONOMY 5.149	Fixed Mobile Radio astronomy Space research	Region 1 allocations
158.5-164 GHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	158.5-164 GHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	Fixed Fixed satellite downlink Mobile Mobile satellite downlink	Region 1 allocations
164-167 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	164-167 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite Radio astronomy Space research	Region 1 allocations
167-174.5 GHz FIXED FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE 5.558 5.149 5.562D	167-174.5 GHz FIXED FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE 5.558 5.149 5.562D	Fixed Fixed satellite downlink Inter-satellite Mobile	Region 1 allocations
174.5-174.8 GHz FIXED INTER-SATELLITE MOBILE 5.558	174.5-174.8 GHz FIXED INTER-SATELLITE MOBILE 5.558	Fixed Inter-satellite Mobile	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
174.8-182 GHz EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	174.8-182 GHz EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	Earth exploration satellite Inter-satellite Space research	Region 1 allocations
182-185 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	182-185 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite Radio astronomy Space research	Region 1 allocations
185-190 GHz EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	185-190 GHz EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	Earth exploration satellite Inter-satellite Space research	Region 1 allocations
190-191.8 GHz EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	190-191.8 GHz EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	Earth exploration satellite Space research	Region 1 allocations
191.8-200 GHz FIXED INTER-SATELLITE MOBILE 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.341 5.554	191.8-200 GHz FIXED INTER-SATELLITE MOBILE 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.341 5.554	Fixed Inter-satellite Mobile Mobile-satellite Radionavigation Radionavigation-satellite	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
200-202 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	200-202 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	Earth exploration satellite Radio astronomy Space research	Region 1 allocations
202-209 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	202-209 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	Earth exploration satellite Radio astronomy Space research	Region 1 allocations
209-217 GHz FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.341	209-217 GHz FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.341	Fixed Fixed satellite uplink Mobile Radio astronomy	Region 1 allocations
217-226 GHz FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	217-226 GHz FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	Fixed Fixed satellite uplink Mobile Radio astronomy Space research	Region 1 allocations
226-231.5 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	226-231.5 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite Radio astronomy Space research	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
231.5-232 GHz FIXED MOBILE Radiolocation	231.5-232 GHz FIXED MOBILE Radiolocation	Fixed Mobile	Region 1 allocations
232-235 GHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation	232-235 GHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation	Fixed Fixed satellite downlink Mobile	Region 1 allocations
235-238 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) SPACE RESEARCH (passive) 5.563A 5.563B	235-238 GHz EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) SPACE RESEARCH (passive) 5.563A 5.563B	Earth exploration satellite Fixed satellite downlink Space research	Region 1 allocations
238-240 GHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE	238-240 GHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE	Fixed Fixed satellite downlink Mobile Radiolocation Radionavigation Radionavigation satellite	Region 1 allocations
240-241 GHz FIXED MOBILE RADIOLOCATION	240-241 GHz FIXED MOBILE RADIOLOCATION	Fixed Mobile Radiolocation	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
241-248 GHz RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.138 5.149	241-248 GHz RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.138 5.149 RW1 RW2	Radio astronomy Radiolocation	Region 1 allocations Short Range Devices permitted 244-246 GHz.
248-250 GHz AMATEUR AMATEUR-SATELLITE Radio astronomy 5.149	248-250 GHz AMATEUR AMATEUR-SATELLITE Radio astronomy 5.149	Amateur Amateur satellite	Region 1 allocations
250-252 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.563A	250-252 GHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.563A	Earth exploration satellite Radio astronomy Space research	Region 1 allocations
252-265 GHz FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	252-265 GHz FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	Fixed Mobile Mobile satellite uplink Radio astronomy Radionavigation Radionavigation satellite	Region 1 allocations

Table of Rwandan Frequency Allocations

ITU Region 1 Allocation	Rwandan National Allocation	Actual/Designated Utilisation	Comments
265-275 GHz FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.563A	265-275 GHz FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.563A	Fixed Fixed satellite uplink Mobile Radio astronomy	Region 1 allocations
275-3 000 GHz (Not allocated) 5.565 5.X115	275-3 000 GHz (Not allocated) 5.565 5.X115	No designated usage	

Table of Rwandan Frequency Allocations

National footnotes applying to Rwanda

Footnote RW1

FREQUENCY BANDS DESIGNATED FOR INDUSTRIAL, SCIENTIFIC AND MEDICAL USE

1. In Rwanda the use of industrial, scientific and medical (ISM)¹ apparatus, as defined in the ITU Radio Regulations is allowed provided it does not contravene the provisions of the Law No. 24/2016 of 18/06/2016 Governing Information and Communication Technology, both:-

- a. in regard to the compliance of such apparatus with regulations made by Ministerial Decree and/or other regulations in place to control its capacity to interfere with radiocommunications: and
- b. in regard to the likely interference of the use of such apparatus to radiocommunication services used for safety of life purposes, or its likely and actual interference to other radiocommunication services.

2. In pursuance of these provisions, regulations governing the control of interference from ISM apparatus, which include the limits of field strength and terminal voltage applicable to particular frequency bands, would be made, derived from the following international IEC standard: – CISPR 11. Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio frequency equipment.

3. Frequency bands designated for ISM applications and therefore subject to control legislation in Rwanda are listed below.

Frequency Band	Conditions of Use
6 765 - 6 795 kHz	5.138 applies. Radiocommunication services must accept harmful interference from ISM. Subject to special authorisation by RURA.
13 553 - 13 567 kHz	5.150 applies. Radiocommunication services must accept harmful interference from ISM. Subject to the provisions of No. 15.13 of the Radio Regulations.
26 957 - 27 283 kHz	5.150 applies. Radiocommunication services must accept harmful interference from ISM. Subject to the provisions of No. 15.13 of the Radio Regulations.
40.66 – 40.70 MHz	5.150 applies. Radiocommunication services must accept harmful interference from ISM. Subject to the provisions of No. 15.13 of the Radio Regulations.
433.05 - 434.79 MHz	5.138 applies. Radiocommunication services must accept harmful interference from ISM. Subject to special authorisation by RURA.
2 400-2 500 MHz	5.150 applies. Radiocommunication services must accept harmful interference from ISM. Subject to the provisions of No. 15.13 of the Radio Regulations.

¹ See Section I of Article 1 in the Radio Regulations for the definition of “ISM applications”

Table of Rwandan Frequency Allocations

Frequency Band	Conditions of Use
5 725 - 5 875 MHz	5.150 applies. Radiocommunication services must accept harmful interference from ISM. Subject to the provisions of No. 15.13 of the Radio Regulations.
24.0-24.25 GHz	5.150 applies. Radiocommunication services must accept harmful interference from ISM. Subject to the provisions of No. 15.13 of the Radio Regulations.
61.0-61.5 GHz	5.138 applies. Radiocommunication services must accept harmful interference from ISM. Subject to special authorisation by RURA.
122-123 GHz	5.138 applies. Radiocommunication services must accept harmful interference from ISM. Subject to special authorisation by RURA.
244-246 GHz	5.138 applies. Radiocommunication services must accept harmful interference from ISM. Subject to special authorisation by RURA.

References to 5.138 and 5.150 refer to the ITU Radio Regulations 2008, Article 5 footnotes. (Also appearing later in this document).

Footnote RW2

FREQUENCY BANDS DESIGNATED FOR SHORT RANGE DEVICES

This footnote covers frequency bands and regulatory as well as informative parameters recommended for short range devices (SRDs).

Non-specific use is primarily for Telemetry, Telecommand, Alarms and Data in general and other similar applications. Video applications should be preferably used above 2.4 GHz.

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

Radio microphones are small, low power (50 mW or less) transmitters designed to be worn on the body, or hand held, for the transmission of close, personal sound. The receivers are more tailored to specific uses and may range from small and portable to rack mounted modules as part of a multichannel system. Frequency band limits should be regarded as tuning ranges within which a device can be designated to operate.

Alarm systems include social alarms and alarms for security and safety.

Frequency Band	Power/Magnetic Field Limit	Spectrum Access	Channel Spacing	Type of Use
6765-6795 kHz	42 dBµA/m at 10m	No requirement	No spacing	Non-specific
13.553-13.567 MHz	42 dBµA/m at 10m	No requirement	No spacing	Non-specific

Table of Rwandan Frequency Allocations

Frequency Band	Power/Magnetic Field Limit	Spectrum Access	Channel Spacing	Type of Use
26.957-27.283 MHz	42 dB μ A/m at 10m 10 mW e.r.p	No requirement	No spacing	Non-specific
40.660-40.700 MHz	10 mW e.r.p.	No requirement	No spacing	Non-specific
87.5-108.0 MHz	50 nW e.r.p.	No requirement	200 kHz	Wireless audio devices
138.20-138.45 MHz	10 mW e.r.p.	< 1.0 % duty cycle	No spacing	Non-specific
174-216 MHz	50 mW e.r.p.	No requirement	No spacing	Radio microphones on a tuning range basis. (Licence required)
433.050-434.790 MHz	10 mW e.r.p.	< 10 % duty cycle	No spacing	Non-specific
470-862 MHz	50 mW e.r.p.	No requirement	No spacing	Radio microphones on a tuning range basis. (Licence required)
863-865 MHz	10 mW e.r.p.	No requirement	No spacing	Wireless audio devices
863-870 MHz	25 mW e.r.p.	<1% or Listen Before Talk (LBT)	No spacing	Non-specific
868.8-869.4 MHz	25 mW e.r.p.	<1% duty cycle	25 kHz	Alarms
1785-1800 MHz	50 mW e.i.r.p.	No requirement	No spacing	Radio microphones.
1795-1800 MHz	20 mW e.i.r.p.	No requirement	No spacing	Wireless audio devices
2400.0-2483.5 MHz	10 mW e.i.r.p.	No requirement	No spacing	Non-specific
5725-5875 MHz	25 mW e.i.r.p.	No requirement	No spacing	Non-specific
24.00-24.25 GHz	100 mW e.i.r.p.	No requirement	No spacing	Non-specific
61.0-61.5 GHz	100 mW e.i.r.p.	No requirement	No spacing	Non-specific
122-123 GHz	100 mW e.i.r.p.	No requirement	No spacing	Non-specific
244-246 GHz	100 mW e.i.r.p.	No requirement	No spacing	Non-specific

Note: Refer to RURA guidelines for the use of Short Range Devices

Table of Rwandan Frequency Allocations

Footnote RW3

CHANGE IN NATIONAL ALLOCATIONS APPLYING TO THE MOBILE SERVICE

In general terms, there is no requirement for maritime mobile frequency allocations in Rwanda. Therefore wherever the class of service **MOBILE excluding aeronautical mobile** appears in a Region 1 allocation, an allocation to the **LAND MOBILE** service is made in the corresponding national allocation

Footnote RW4

FREQUENCY BANDS DESIGNATED FOR PROGRAMME MAKING & SPECIAL EVENTS (PMSE)

To be developed following discussions with broadcasters, programme makers and special event operators on their requirements for PMSE frequencies. PMSE includes the categories of Services Ancillary to Programme Making (SAP) and Services Ancillary to Broadcasting (SAB). Typical SAP/SAB applications include radio microphones, in-ear monitors (IEM), talkback systems, wireless camera links, audio links, video links, outside broadcast (OB) and electronic news gathering (ENG). Some radio microphone frequency bands are already indicated by footnote RW2 above.

Table of Rwandan Frequency Allocations

Relevant ITU footnotes applying to Rwanda

The following footnotes to the international table of frequency allocations, as contained in Article 5 of the ITU Radio Regulations, appear in the Table of Rwandan Frequency Allocations, and therefore apply to Rwanda.

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

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

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)

5.57 The use of the bands 14-19.95 kHz, 20.05-70 kHz and 70-90 kHz (72-84 kHz and 86-90 kHz in Region 1) by the maritime mobile service is limited to coast radiotelegraph stations (A1A and F1B only). Exceptionally, the use of class J2B or J7B emissions is authorized subject to the necessary bandwidth not exceeding that normally used for class A1A or F1B emissions in the band concerned.

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)

5.68 *Alternative allocation:* in Angola, Burundi, Congo (Rep. of the), Malawi, the Dem. Rep. of the Congo, Rwanda and South Africa, the band 160-200 kHz is allocated to the fixed service on a primary basis. (WRC-03)

5.70 *Alternative allocation:* in Angola, Botswana, Burundi, the Central African Rep., Congo (Rep. of the), Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Nigeria, Oman, the Dem. Rep. of the Congo, South Africa, Tanzania, Chad, Zambia and Zimbabwe, the

Table of Rwandan Frequency Allocations

frequency band 200-283.5 kHz is allocated to the aeronautical radionavigation service on a primary basis. (WRC-19)

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.

5.79 5.79 In the maritime mobile service, the frequency bands 415-495 kHz and 505-526.5 kHz are limited to radiotelegraphy and may also be used for the NAVDAT system in accordance with the most recent version of Recommendation ITU-R M.2010, subject to agreement between interested and affected administrations. NAVDAT transmitting stations are limited to coast stations. (WRC-19)

5.79A When establishing coast stations in the NAVTEX service on the frequencies 490 kHz, 518 kHz and 4 209.5 kHz, administrations are strongly recommended to coordinate the operating characteristics in accordance with the procedures of the International Maritime Organization (IMO) (see Resolution **339 (Rev.WRC-07)**). (WRC-07)

5.A18 The frequency band 495-505 kHz is used for the international NAVDAT system as described in the most recent version of Recommendation ITU-R M.2010. NAVDAT transmitting stations are limited to coast stations. (WRC-19)

5.90 In the band 1 605-1 705 kHz, in cases where a broadcasting station of Region 2 is concerned, the service area of the maritime mobile stations in Region 1 shall be limited to that provided by ground-wave propagation.

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.

5.104 In Region 1, the use of the band 2 025-2 045 kHz by the meteorological aids service is limited to oceanographic buoy stations.

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.

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The same applies to the frequencies 10 003 kHz, 14 993 kHz and 19 993 kHz, but in each of these cases emissions must 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.

5.117 Alternative allocation: in Côte d'Ivoire, Egypt, Liberia, Sri Lanka and Togo, the frequency band 3 155-3 200 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)

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, 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 frequency 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-19)

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).

5.133B 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 countries and territories within the Kingdom 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-19)

5.134 The use of the frequency 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

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procedure of Article 12. Administrations are encouraged to use these frequency bands to facilitate the introduction of digitally modulated emissions in accordance with the provisions of Resolution 517 (Rev.WRC-19). (WRC-19)

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.

5.142 The use of the band 7 200-7 300 kHz in Region 2 by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3. (WRC-12)

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)

5.146 *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)

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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 must 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.

5.156A The use of the band 23 200-23 350 kHz by the fixed service is limited to provision of services related to aircraft flight safety.

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5.160 *Additional allocation:* in Botswana, Burundi, Dem. Rep. of the Congo and Rwanda, the band 41-44 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-12)

5. A11 In Region 1, stations in the amateur service operating on a secondary basis shall not cause harmful interference to, or claim protection from, stations of the broadcasting service. The field strength generated by an amateur station in Region 1 in the frequency band 50-52 MHz shall not exceed a calculated value of +6 dB ($\mu\text{V}/\text{m}$) at a height of 10 m above ground for more than 10% of time along the border of a country with operational analogue broadcasting stations in Region 1 and of neighbouring countries with broadcasting stations in Region 3 listed in Nos. **5.167** and **5.168**. (WRC-19)

5. B11 In Region 1, stations in the amateur service in the frequency band 50-52 MHz, with the exception of those countries listed in No. **5.169**, shall not cause harmful interference to, or claim protection from, wind profiler radars operating in the radiolocation service under No. **5.162A**. (WRC-19)

5.A11bis Except countries listed under No. **5.169**, stations in the amateur service used in Region 1, in all or part of the 50-54 MHz frequency band, shall not cause harmful interference to, or claim protection from, stations of other services used in accordance with the Radio Regulations in Algeria, Armenia, Azerbaijan, Belarus, Egypt, Russian Federation, Iran (Islamic Republic of), Iraq, Kazakhstan, Kyrgyzstan, Libya, Uzbekistan, Palestine*, the Syrian Arab Republic, Sudan, Tunisia and Ukraine. The field strength generated by an amateur station in the frequency band 50-54 MHz shall not exceed a value of +6 dB($\mu\text{V}/\text{m}$) at a height of 10 m above ground for more than 10% of time along the borders of the countries listed in this provision. (WRC-19)

5.169 *Alternative allocation:* in Botswana, Eswatini, Lesotho, Malawi, Namibia, Rwanda, South Africa, Zambia and Zimbabwe, the frequency band 50-54 MHz is allocated to the amateur service on a primary basis. In Senegal, the frequency band 50-51 MHz is allocated to the amateur service on a primary basis. (WRC-19)

5.171 *Additional allocation:* in Botswana, Eswatini, Lesotho, Malawi, Mali, Namibia, Dem. Rep. of the Congo, Rwanda, South Africa, Zambia and Zimbabwe, the frequency band 54-68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)

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-12). 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

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- Pursuant to Resolution 99 (Rev. Dubai, 2018) and taking into account the Israeli-Palestinian Interim Agreement of 28 September 1995.
 - Pursuant to Resolution 99 (Rev. Dubai, 2018) and taking into account the Israeli-Palestinian Interim Agreement of 28 September 1995.

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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.A17 The use of the space operation service (space-to-Earth) with non-geostationary satellite short-duration mission systems in the frequency band 137-138 MHz is subject to Resolution **COM5/9 (WRC-19)**. Resolution **COM5/5 (WRC-19)** applies. These systems shall not cause harmful interference to, or claim protection from, the existing services to which the frequency band is allocated on a primary basis. (WRC-19)

5.AA17 The use of the frequency band 137.175-137.825 MHz by non-geostationary satellite systems in the space operation service identified as short-duration mission in accordance with Appendix **4** is not subject to No. **9.11A**. (WRC-19)

5.208A In making assignments to space stations in the mobile-satellite service in the frequency bands 137-138 MHz, 387-390 MHz and 400.15-401 MHz and in the maritime mobile-satellite service (space-to-Earth) in the frequency bands 157.1875-157.3375 MHz and 161.7875- 161.9375 MHz, administrations shall take all practicable steps to protect the radio astronomy service in the frequency bands 150.05-153 MHz, 322-328.6 MHz, 406.1-410 MHz and 608-614 MHz from harmful interference from unwanted emissions as shown in the most recent version of Recommendation ITU-R RA.769. (WRC-19)

5.208B* In the frequency bands:

137-138 MHz,
157.1875-157.3375 MHz,
161.7875-161.9375 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-19) applies. (WRC-19)

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), Eswatini, 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, Chad, Togo, Zambia and Zimbabwe, the frequency band 138-144 MHz is allocated to the fixed and mobile services on a primary basis. (WRC-19)

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 frequency 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 frequency band 148-149.9 MHz. The use of the

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frequency band 148-149.9 MHz by non-geostationary-satellite systems in the space operation service identified as short-duration mission is not subject to No. 9.11A. (WRC-19)

5.BB17 The frequency band 148-149.9 MHz in the space operation service (Earth-to-space) may be used by non-geostationary satellite systems with short-duration missions. Non-geostationary satellite systems in the space operation service used for a short-duration mission in accordance with Resolution **COM5/5 (WRC-19)** of the Radio Regulations are not subject to agreement under No. **9.21**. At the stage of coordination, the provisions of Nos. **9.17** and **9.18** also apply. In the frequency band 148-149.9 MHz, non-geostationary satellite systems with short-duration missions shall not cause unacceptable interference to, or claim protection from, existing primary services within this frequency band, or impose additional constraints on the space operation and mobile-satellite services. In addition, earth stations in non-geostationary satellite systems in the space operation service with short-duration missions in the frequency band 148-149.9 MHz shall ensure that the power flux-density does not exceed $-149 \text{ dB(W/(m}^2 \cdot 4 \text{ kHz))}$ for more than 1% of time at the border of the territory of the following countries: Armenia, Azerbaijan, Belarus, China, Korea (Rep. of), Cuba, Russian Federation, India, Iran (Islamic Republic of), Japan, Kazakhstan, Malaysia, Uzbekistan, Kyrgyzstan, Thailand and Viet Nam. In case this power flux-density limit is exceeded, agreement under No. **9.21** is required to be obtained from countries mentioned in this footnote. (WRC-19)

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) 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)

5.228 The use of the frequency bands 156.7625-156.7875 MHz and 156.8125-156.8375 MHz by the mobile-satellite service (Earth-to-space) is limited to the reception of automatic identification system (AIS) emissions of longrange AIS broadcast messages (Message 27, see the most recent version of Recommendation ITU-R M.1371). With the exception of AIS emissions, emissions in these frequency bands by systems operating in the maritime mobile service for communications shall not exceed 1 W. (WRC-12)

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5.A192 The use of the frequency bands 157.1875-157.3375 MHz and 61.7875-161.9375 MHz by the maritime mobile-satellite service (Earth-to-space) is limited to non-GSO satellite systems operating in accordance with Appendix 18. (WRC-19)

5.228A The frequency bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz may be used by aircraft stations for the purpose of search and rescue operations and other safety-related communications. (WRC-12)

5.228B The use of the frequency bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz by the fixed and land mobile services shall not cause harmful interference to, or claim protection from, the maritime mobile service. (WRC-12)

5.228C The use of the frequency bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz by the maritime mobile service and the mobile-satellite (Earth-to-space) service is limited to the automatic identification system (AIS). The use of these frequency bands by the aeronautical mobile (OR) service is limited to AIS emissions from search and rescue aircraft operations. The AIS operations in these frequency bands shall not constrain the development and use of the fixed and mobile services operating in the adjacent frequency bands. (WRC-12)

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.

5.256 The frequency 243 MHz is the frequency in this band for use by survival craft stations and equipment used for survival purposes. (WRC-07)

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).

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

5.A12 In the frequency band 399.9-400.05 MHz, the maximum e.i.r.p. of any emission of Earth stations in the mobile-satellite service shall not exceed 5 dBW in any 4 kHz band and the maximum e.i.r.p. of each earth station in the mobile-satellite service shall not exceed 5 dBW in the whole 399.9-400.05 MHz frequency band. Until 22 November 2022, this limit shall not apply to satellite systems for which complete notification information has been received by the Radiocommunication Bureau by 22 November 2019 and that have been brought into use by that date. After 22 November 2022, these limits shall apply to all systems within the mobile-satellite service operating in this frequency band. In the frequency band 399.99-400.02 MHz, the e.i.r.p. limits as specified above shall apply after 22 November 2022 to all systems within the mobile-satellite service. Administrations are requested that their mobile-satellite service satellite links in the 399.99-400.02 MHz frequency band comply with the e.i.r.p. limits as specified above, after 22 November 2019. (WRC-19)

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5.B12 In the frequency band 400.02-400.05 MHz, the provisions of No. 5.A12 are not applicable for telecommand uplinks within the mobile-satellite service. (WRC-19)

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.C12 In the frequency band 401-403 MHz, the maximum e.i.r.p. of any emission of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 22 dBW in any 4 kHz band for geostationary systems and non-geostationary systems with an orbit of apogee equal or greater than 35 786 km. The maximum e.i.r.p. of any emission of each earth station in the meteorological satellite service and the Earth exploration-satellite service shall not exceed 7 dBW in any 4 kHz band for non-geostationary systems with an orbit of apogee lower than 35 786 km. The maximum e.i.r.p. of each earth station in the meteorological-satellite service and the earth exploration-satellite service shall not exceed 22 dBW for geostationary systems and nongeostationary systems with an orbit of apogee equal or greater than 35 786 km in the whole 401-403 MHz frequency band. The maximum e.i.r.p. of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 7 dBW for non-geostationary systems with an orbit of apogee lower than 35 786 km in the whole 401-403 MHz frequency band. Until 22 November 2029, these limits shall not apply to satellite systems for which complete notification information has been received by the Radiocommunication Bureau by 22 November 2019 and that have been brought into use by that date. After 22 November 2029, these limits shall apply to all systems within the meteorological-satellite service and the Earth exploration-satellite service operating in this frequency band. (WRC-19)

5.D12 Non-geostationary satellite systems in the meteorological-satellite service and the Earth exploration-satellite service for which complete notification information has been received by the Radiocommunication Bureau before 28 April 2007 are exempt from provisions of No. 5.C12 and may continue to operate in the frequency band 401.898-402.522 MHz on a primary basis without exceeding a maximum e.i.r.p. level of 12 dBW. (WRC-19)

5.265 In the frequency band 403-410 MHz, Resolution 205 (Rev.WRC-19) applies. (WRC-19)

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.

5.268 Use of the frequency band 410-420 MHz by the space research service is limited to space-to-space communication links with an orbiting, manned space vehicle. The power flux-density at the surface of the Earth produced by emissions from transmitting stations of the space research service (space-to-space) in the frequency band 410-420 MHz shall not exceed -153 dB(W/m²) for $0^\circ \leq \delta \leq 5^\circ$, $-153 + 0.077(\delta - 5)$ dB(W/m²) for $5^\circ \leq \delta \leq 70^\circ$ and -148 dB(W/m²) for $70^\circ \leq \delta \leq 90^\circ$, where δ is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. In this frequency band, stations of the space research service (space-to-space) shall not claim protection from, nor constrain the use and development of, stations of the fixed and mobile services. No. 4.10 does not apply. (WRC-15) 5.277 Additional allocation: in Angola, Armenia, Azerbaijan, Belarus, Cameroon, Congo (Rep. of the), Djibouti, the Russian Federation, Georgia, Hungary, Israel, Kazakhstan, Mali, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, Romania, Rwanda, Tajikistan, Chad, Turkmenistan and Ukraine, the band 430-440 MHz is also allocated to the fixed service on a primary basis. (WRC-12)

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5.277 *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, Cameroon, Congo (Rep. of the), Djibouti, the Russian Federation, Georgia, Hungary, Israel, Kazakhstan, Mali, Uzbekistan, Poland, the Dem. Rep. of the Congo, Kyrgyzstan, Slovakia, Romania, Rwanda, Tajikistan, Chad, Turkmenistan and Ukraine, the frequency band 430-440 MHz is also allocated to the fixed service on a primary basis. (WRC-19)

5.279A 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.1260-2. 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 (active) to operate as a secondary service in accordance with Nos. 5.29 and 5.30. (WRC-19)

5.286 The band 449.75-450.25 MHz may be used for the space operation 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-19). 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-19)

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.1174-4. The use of these frequency bands in territorial waters is subject to the national regulations of the administration concerned. (WRC-19)

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, Eswatini, Finland, France, Gabon, Georgia, Ghana, Hungary, Iraq, Ireland, Iceland, Israel, Italy, Jordan, Kenya, Kuwait, Lesotho, Latvia, Lebanon, Libya, Liechtenstein, Lithuania, Luxembourg, North Macedonia, 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, Romania, the United Kingdom, Rwanda, San Marino, Serbia, Sudan, South Africa, Sweden, Switzerland, 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-19)

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.

5.312A 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 (Rev.WRC-19). See also Resolution 224 (Rev.WRC-19). (WRC-19)

5.316B 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

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of the procedures of that Agreement. Resolutions 224 (Rev.WRC-19) and 749 (Rev.WRC-19) shall apply, as appropriate. (WRC-19)

5.317A The parts of the frequency band 698-960 MHz in Region 2 and the frequency bands 694-790 MHz in Region 1 and 790-960 MHz in Regions 1 and 3 which are allocated to the mobile service on a primary basis are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) – see Resolutions 224 (Rev.WRC-19), 760 (Rev.WRC-19) and 749 (Rev.WRC-19), where applicable. 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-19)

5.327A The use of the 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 (WRC-07)**. (WRC-07)

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 (Rev.WRC-19) shall apply. (WRC-19)

5.328A Stations in the radionavigation-satellite service in the band 1 164-1 215 MHz shall operate in accordance with the provisions of Resolution 609 (Rev.WRC-07) and shall not claim protection from stations in the aeronautical radionavigation service in the band 960-1 215 MHz. No. 5.43A does not apply. The provisions of No. 21.18 shall apply. (WRC-07)

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)

5.329 Use of the radionavigation-satellite service in the frequency 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 frequency 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 (Rev.WRC-19) shall apply. (WRC-19)

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)

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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..

5.337A The use of the band 1 300-1 350 MHz by earth stations in the radionavigation-satellite service and by stations in the radiolocation service shall not cause harmful interference to, nor constrain the operation and development of, the aeronautical-radionavigation service. (WRC-2000)

5.338A In the frequency bands 1 350-1 400 MHz, 1 427-1 452 MHz, 22.55-23.55 GHz, 24.25-27.5 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-19) applies. (WRC-19)

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 GHz³,
52.6-54.25 GHz,
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 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.

5.341A 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)

³ **5.340.1** 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)

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5.345 Use of the frequency 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 (Rev.WRC-19). (WRC-19)

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, Eswatini, 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, Senegal, Seychelles, Sudan, South Sudan, South Africa, 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-19). (WRC-19)

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/m²) 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)

5.351 The bands 1 525-1 544 MHz, 1 545-1 559 MHz, 1 626.5-1 645.5 MHz and 1 646.5-1 660.5 MHz shall not be used for feeder links of any service. In exceptional circumstances, however, an earth station at a specified fixed point in any of the mobile-satellite services may be authorized by an administration to communicate via space stations using these bands..

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.ADJBAND Maritime mobile earth stations receiving in the frequency band 1 621.35-1 626.5 MHz shall not impose additional constraints on earth stations operating in the maritime mobile-satellite service or maritime earth stations of the radiodetermination-satellite service operating in accordance with the Radio Regulations in the frequency band 1 610-1 621.35 MHz or on earth stations operating in the maritime mobile-satellite service operating in accordance with the Radio Regulations in the frequency band 1 626.5-1 660.5 MHz, unless otherwise agreed between the notifying administrations. (WRC-19)

5.INBAND Maritime mobile earth stations receiving in the frequency band 1 621.35-1 626.5 MHz shall not impose constraints on the assignments of earth stations of the mobile satellite service (Earth-to-space) and the radiodetermination-satellite service (Earth-to-space) in the frequency band 1 621.35-1 626.5 MHz in networks for which complete coordination information has been received by the Radiocommunication Bureau before 28 October 2019. (WRC-19)

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

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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)³ 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.

5.357A In applying the procedures of Section II of Article 9 to the mobile-satellite service in the 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 (WRC-12)³ 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 bands 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**

5.368 The provisions of No. 4.10 do not apply with respect to the radiodetermination-satellite and mobile-satellite services in the frequency band 1 610-1 626.5 MHz. However, No. 4.10 applies in the frequency band 1 610-1 626.5 MHz with respect to the aeronautical radionavigation-satellite service when operating in accordance with No. 5.366, the aeronautical mobile satellite (R) service when operating in accordance with No. 5.367, and in the frequency band 1 621.35-1 626.5 MHz with respect to the maritime mobile-satellite service when used for GMDSS. (WRC-19)

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5.371 *Additional allocation:* Region 1, the bands 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**.

5.372 Harmful interference shall not be caused to stations of the radio astronomy service using the frequency band 1 610.6-1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services (No. 29.13 applies). The equivalent power flux-density (epfd) produced in the frequency band 1 610.6-1 613.8 MHz by all space stations of a non-geostationary-satellite system in the mobile-satellite service (space-to-Earth) operating in frequency band 1 613.8-1 626.5 MHz shall be in compliance with the protection criteria provided in Recommendations ITU-R RA.769-2 and ITU-R RA.1513-2, using the methodology given in Recommendation ITU-R M.1583-1, and the radio astronomy antenna pattern described in Recommendation ITU-R RA.1631-0. (WRC-19)

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/m²) in 10 MHz and -194 dB(W/m²) 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)

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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 (Rev.WRC-15)). (WRC-15)

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, Lebanon, 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 frequency bands referred to in No. 5.388A, shall not exceed a co-channel power flux-density of $-127 \text{ dB(W)/(m}^2 \cdot \text{MHz)}$ 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-19)

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**)⁴. (WRC-07))

5.389E The use of the bands 2 010-2 025 MHz and 2 160-2 170 MHz by the mobile-satellite service in Region 2 shall not cause harmful interference to or constrain the development of the fixed and mobile services in Regions 1 and 3.

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)

5.392 are urged to take all practicable measures to ensure that space-to-space transmissions between two or more non-geostationary satellites, in the space research, space operations and Earth exploration-satellite services in the bands 2 025-2 110 MHz and 2 200-2 290 MHz, shall not impose any constraints on Earth-to-space, space-to-Earth and other space-to-space transmissions of those services and in those bands between geostationary and non-geostationary satellites.

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.

5.399 Except for cases referred to in No. **5.401**, stations of the radiodetermination-satellite service operating in the frequency band 2 483.5-2 500 MHz for which notification information is received by the Bureau after 17 February 2012, and the service area of which includes Armenia, Azerbaijan, Belarus, the Russian Federation, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan and Ukraine, shall not cause harmful interference to, and shall not claim protection from stations of the radiolocation service operating in these countries in accordance with No. 5.398A. (WRC-12).

5.402 The use of the band 2 483.5-2 500 MHz by the mobile-satellite and the radiodetermination-satellite services is subject to the coordination under No. **9.11A**. Administrations are urged to take all

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practicable steps to prevent harmful interference to the radio astronomy service from emissions in the 2 483.5-2 500 MHz band, especially those caused by second-harmonic radiation that would fall into the 4 990-5 000 MHz band allocated to the radio astronomy service worldwide..

5.403 Subject to agreement obtained under No. 9.21, the band 2 520-2 535 MHz may also be used for the mobile-satellite (space-to-Earth), except aeronautical mobile-satellite, service for operation limited to within national boundaries. The provisions of No. 9.11A apply. (WRC-07)

5.410 The band 2 500-2 690 MHz may be used for tropospheric scatter systems in Region 1, subject to agreement obtained under No. **9.21**. No. **9.21** does not apply to tropospheric scatter links situated entirely outside Region 1. Administrations shall make all practicable efforts to avoid developing new tropospheric scatter systems in this band. When planning new tropospheric scatter radio-relay links in this band, all possible measures shall be taken to avoid directing the antennas of these links towards the geostationary-satellite orbit. (WRC-12)

5.413 In the design of systems in the broadcasting-satellite service in the bands between 2 500 MHz and 2 690 MHz, administrations are urged to take all necessary steps to protect the radio astronomy service in the band 2 690-2 700 MHz.

5.414 The allocation of the frequency band 2 500-2 520 MHz to the mobile-satellite service (space-to-Earth) is subject to coordination under No. **9.11A**. (WRC-07)

5.416 The use of the band 2 520-2 670 MHz by the broadcasting-satellite service is limited to national and regional systems for community reception, subject to agreement obtained under No. **9.21**. The provisions of No. **9.19** shall be applied by administrations in this band in their bilateral and multilateral negotiations. (WRC-07)

5.418B Use of the band 2 630-2 655 MHz by non-geostationary-satellite systems in the broadcasting-satellite service (sound), pursuant to No. **5.418**, for which complete Appendix 4 coordination information, or notification information, has been received after 2 June 2000, is subject to the application of the provisions of No. **9.12**. (WRC-03)

5.418C Use of the band 2 630-2 655 MHz by geostationary-satellite networks for which complete Appendix 4 coordination information, or notification information, has been received after 2 June 2000 is subject to the application of the provisions of No. **9.13** with respect to non-geostationary-satellite systems in the broadcasting-satellite service (sound), pursuant to No. **5.418** and No. **22.2** does not apply. (WRC-03)

5.419 When introducing systems of the mobile-satellite service in the band 2 670-2 690 MHz, administrations shall take all necessary steps to protect the satellite systems operating in this band prior to 3 March 1992. The coordination of mobile-satellite systems in the band shall be in accordance with No. **9.11A**. (WRC-07)

5.420 The band 2 655-2 670 MHz may also be used for the mobile-satellite (Earth-to-space), except aeronautical mobile-satellite, service for operation limited to within national boundaries, subject to agreement obtained under No. **9.21**. The coordination under No. **9.11A** applies. (WRC-07)

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)

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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, Djibouti, Eswatini, Ghana, Guinea, Guinea-Bissau, Lesotho, Liberia, Malawi, Mauritania, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sudan, South Sudan, South Africa, 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-19)

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, Eswatini, 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, 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-19)

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)

5.436 Use of the frequency band 4 200-4 400 MHz by stations in the aeronautical mobile (R) service is reserved 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)

5.438 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).

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

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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 frequency 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, Mexico, Paraguay, Uruguay and Venezuela), and in Australia, the frequency 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-15)

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)

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)

5.444A 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

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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)

5.444B 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-19);
- aeronautical telemetry transmissions from aircraft stations (see No. 1.83) in accordance with Resolution 418 (Rev.WRC-19). (WRC-19)

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-19). (WRC-19)

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)

5.446C *Additional allocation:* in Region 1 (except in Algeria, Saudi Arabia, Bahrain, Egypt, United Arab Emirates, Iraq, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Syrian Arab Republic, Sudan, South Sudan and Tunisia), the frequency band 5 150-5 250 MHz is also allocated to the aeronautical mobile service on a primary basis, limited to aeronautical telemetry transmissions from aircraft stations (see No. 1.83), in accordance with Resolution 418 (Rev.WRC-19). These stations shall not claim protection from other stations operating in accordance with Article 5. No. 5.43A does not apply. (WRC-19)

5.447A The allocation to the fixed-satellite service (Earth-to-space) 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/m²) 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). The radiolocation service, the Earth exploration-satellite service (active) and the space research service (active) shall not impose more stringent conditions upon the mobile service than those stipulated in Resolution 229 (Rev.WRC-19). (WRC-19)

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

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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. The radiodetermination services shall not impose more stringent conditions upon the mobile service than those stipulated in Resolution 229 (Rev.WRC-19). (WRC-19)

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.

5.457A In the frequency bands 5 925-6 425 MHz and 14-14.5 GHz, earth stations located on board vessels may communicate with space stations of the fixed-satellite service. Such use shall be in accordance with Resolution 902 (WRC-03). In the frequency band 5 925-6 425 MHz, earth stations located on board vessels and communicating with space stations of the fixed-satellite service may employ transmit antennas with minimum diameter of 1.2 m and operate without prior agreement of any administration if located at least 330 km away from the low-water mark as officially recognized by the coastal State. All other provisions of Resolution 902 (WRC-03) shall apply. (WRC-15)

5.458 In the band 6 425-7 075 MHz, passive microwave sensor measurements are carried out over the oceans. In the band 7 075-7 250 MHz, passive microwave sensor measurements are carried out. Administrations should bear in mind the needs of the Earth exploration-satellite (passive) and space research (passive) services in their future planning of the bands 6 425-7 025 MHz and 7 075-7 250 MHz.

5.458A In making assignments in the band 6 700-7 075 MHz to space stations of the fixed-satellite service, administrations are urged to take all practicable steps to protect spectral line observations of the radio astronomy service in the band 6 650-6 675.2 MHz from harmful interference from unwanted emissions.

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**.

5.460 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)

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

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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 provisional 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°	≤	θ	<	5°
-135 + 0.5 ($\theta - 5$) dB(W/m ²) in a 1 kHz band	for	5°	≤	θ	<	25°
-125 dB(W/m ²) in a 1 kHz band	for	25°	≤	θ	≤	90°

(WRC-12)

5.463 Aircraft stations are not permitted to transmit in the band 8 025-8 400 MHz. (WRC-97)

5.465 In the space research service, the use of the band 8 400-8 450 MHz is limited to deep space.

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.

5.473A 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).

5.474A The use of the frequency bands 9 200-9 300 MHz and 9 900-10 400 MHz by the Earth exploration-satellite service (active) is limited to systems requiring necessary bandwidth greater than 600 MHz that cannot be fully accommodated within the frequency band 9 300-9 900 MHz. Such use is subject to agreement to be obtained under No. 9.21 from Algeria, Saudi Arabia, Bahrain, Egypt, Indonesia, Iran (Islamic Republic of), Lebanon and Tunisia. An administration that has not replied under No. 9.52 is considered as not having agreed to the coordination request. In this case, the notifying

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administration of the satellite system operating in the Earth exploration-satellite service (active) may request the assistance of the Bureau under Sub-Section IID of Article 9. (WRC-15)

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 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, Libyan Arab Jamahiriya, Kazakhstan, Kuwait, Lebanon, 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, service 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)

5.484A 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

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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)

5.484 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)

5.487 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)

5.488 The use of the band 11.7-12.2 GHz by geostationary-satellite networks in the fixed-satellite service in Region 2 is subject to application of the provisions of No. **9.14** for coordination with stations of terrestrial services in Regions 1, 2 and 3. For the use of the band 12.2-12.7 GHz by the broadcasting-satellite service in Region 2, see Appendix **30**. (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)

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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)

5.501A 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)

5.501B In the band 13.4-13.75 GHz, the Earth exploration-satellite (active) and space research (active) services shall not cause harmful interference to, or constrain the use and development of, the radiolocation service. (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:

- $-115 \text{ dB(W/(m}^2 \cdot 10 \text{ MHz))}$ 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;
- $-115 \text{ dB(W/(m}^2 \cdot 10 \text{ MHz))}$ 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) $4.7D + 28 \text{ dB(W/40 kHz)}$, 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) $49.2 + 20 \log(D/4.5) \text{ dB(W/40 kHz)}$, 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;

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- 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)

5.506 The band 14-14.5 GHz may be used, within the fixed-satellite service (Earth-to-space), for feeder links for the broadcasting-satellite service, subject to coordination with other networks in the fixed-satellite service. Such use of feeder links is reserved for countries outside Europe.

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)

5.509F 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-to-space) 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 fixed-satellite 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 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 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)

5.511B 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)

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5.511C 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)

5.511E In the frequency band 15.4-15.7 GHz, stations operating in the radiolocation service shall not cause harmful interference to, or claim protection from, stations operating in the aeronautical radionavigation service. (WRC-12)

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/m²) 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.A15 The operation of earth stations in motion communicating with geostationary fixed-satellite service space stations within the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) shall be subject to the application of Resolution **COM5/6 (WRC-19)**. (WRC-19)

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)

5.515 In the band 17.3-17.8 GHz, sharing between the fixed-satellite service (Earth-to-space) and the broadcasting-satellite service shall also be in accordance with the provisions of § 1 of Annex 4 of Appendix **30A**.

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,

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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)**⁴. (WRC-03)

5.517 In Region 2, use of the fixed-satellite (space-to-Earth) service in the band 17.7-17.8 GHz shall not cause harmful interference to nor claim protection from assignments in the broadcasting-satellite service operating in conformity with the Radio Regulations. (WRC-07)

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)

5.520 The use of the band 18.1-18.4 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links of geostationary-satellite systems in the broadcasting-satellite service. (WRC-2000)

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)

5.522B The use of the band 18.6-18.8 GHz by the fixed-satellite service is limited to geostationary systems and systems with an orbit of apogee greater than 20 000 km. (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.

⁴ This Resolution was revised by WRC-07.

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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)

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**.

5.529 The use of the bands 19.7-20.1 GHz and 29.5-29.9 GHz by the mobile-satellite service in Region 2 is limited to satellite networks which are both in the fixed-satellite service and in the mobile-satellite service as described in No. **5.526**.

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)

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)

5.530D 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.

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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.A113 The frequency band 24.25-27.5 GHz is identified for use by administrations wishing to implement the terrestrial component of 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. Resolution **COM4/8 (WRC-19)** applies. (WRC-19)

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)

5.533 The inter-satellite service shall not claim protection from harmful interference from airport surface detection equipment stations of the radionavigation service..

5.535 In the band 24.75-25.25 GHz, feeder links to stations of the broadcasting-satellite service shall have priority over other uses in the fixed-satellite service (Earth-to-space). Such other uses shall protect and shall not claim protection from existing and future operating feeder-link networks to such broadcasting satellite stations.

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. Resolution COM4/8 (WRC-19) applies. (WRC-19)

5.537 Space services using non-geostationary satellites operating in the inter-satellite service in the band 27-27.5 GHz are exempt from the provisions of No. **22.2**.

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.

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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.

5.544 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.F114 The allocation to the fixed service in the frequency band 31-31.3 GHz is identified for worldwide use by high-altitude platform stations (HAPS). This identification does not preclude the use of this frequency band by other fixed-service applications or by other services to which this frequency band is allocated on a co-primary basis, and does not establish priority in the Radio Regulations. Such use of the fixed-service allocation by HAPS shall be in accordance with the provisions of Resolution **COM4/5 (WRC-19)**. (WRC-19)

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 \square 73.3 dB(W/m²) 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.G114 The allocation to the fixed service in the frequency band 38-39.5 GHz is identified for worldwide use by administrations wishing to implement high-altitude platform stations (HAPS). In the HAPS-to-ground direction, the HAPS ground station shall not claim protection from stations in the fixed,

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mobile and fixed-satellite services; and No. **5.43A** does not apply. This identification does not preclude the use of this frequency band by other fixed-service applications or by other services to which this frequency band is allocated on a co-primary basis and does not establish priority in the Radio Regulations. Furthermore, the development of the fixed-satellite, fixed and mobile services shall not be unduly constrained by HAPS. Such use of the fixed-service allocation by HAPS shall be in accordance with the provisions of Resolution **COM4/6 (WRC-19)**. (WRC-19)

5.A16 The use of the frequency bands 37.5-39.5 GHz (space-to-Earth), 39.5-42.5 GHz (space-to-Earth), 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space) by a nongeostationary-satellite systems in the fixed-satellite service is subject to the application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed satellite service but not with non-geostationary systems in other services. Resolution **COM5/11 (WRC-19)** shall also apply, and No. 22.2 shall continue to apply. (WRC-19)

5.B16 The use of the frequency bands 39.5-40 GHz and 40-40.5 GHz by non-geostationary-satellite systems in the mobile-satellite service (space-to-Earth) and by non-geostationary-satellite systems in the fixed-satellite service (space-to-Earth) is subject to the application of the provisions of No. 9.12 for coordination with other non-geostationary satellite systems in the fixed-satellite and mobile-satellite services but not with non-geostationary satellite systems in other services. No. 22.2 shall continue to apply for non-geostationary-satellite systems. (WRC-19)

5.BCD113 The frequency band 37-43.5 GHz, or portions thereof, is identified for use by administrations wishing to implement the terrestrial component of 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. Because of the potential deployment of FSS earth stations within the frequency range 37.5-42.5 GHz and high-density applications in the fixed-satellite service in the bands 39.5-40 GHz in Region 1, 40-40.5 GHz in all Regions and 40.5-42 GHz in Region 2 (see No. **5.516B**), administrations should further take into account potential constraints to IMT in these bands, as appropriate. Resolution **COM4/9 (WRC-19)** applies. (WRC-19)

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/m²) in 1 GHz and -246 dB(W/m²) 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/m²) 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.1631-0 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).

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

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- 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)

5.551I 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:

- 137 dB(W/m²) in 1 GHz and –153 dB(W/m²) 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
- 116 dB(W/m²) 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 values shall apply at the site of 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-03)

5.552 The allocation of the spectrum for the fixed-satellite service in the bands 42.5-43.5 GHz and 47.2-50.2 GHz for Earth-to-space transmission is greater than that in the band 37.5-39.5 GHz for space-to-Earth transmission in order to accommodate feeder links to broadcasting satellites. Administrations are urged to take all practicable steps to reserve the band 47.2-49.2 GHz for feeder links for the broadcasting-satellite service operating in the band 40.5-42.5 GHz.

5.552A The allocation to the fixed service in the frequency bands 47.2-47.5 GHz and 47.9-48.2 GHz is identified for use by high-altitude platform stations (HAPS). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated on a co-primary basis, and does not establish priority in the Radio Regulations. Such use of the fixed-service allocation in the frequency bands 47.2-47.5 GHz and 47.9-48.2 GHz by HAPS shall be in accordance with the provisions of Resolution 122 (Rev.WRC-19). (WRC-19)

5.H113 In Region 2 and Algeria, Angola, Saudi Arabia, Australia, Bahrain, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Rep., Comoros, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Djibouti, Egypt, United Arab Emirates, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Equatorial Guinea, India, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kenya, Kuwait, Lesotho, Liberia, Libya, Lithuania, Madagascar, Malaysia, Malawi, Mali, Morocco, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Oman, Uganda, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Singapore, Slovenia, Somalia, Sudan, South Africa, Sweden, Tanzania, Chad, Togo, Tunisia, Zambia and Zimbabwe, the frequency band 47.2-48.2 GHz is identified for use by administrations wishing to implement 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

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allocated, and does not establish any priority in the Radio regulations. Resolution **COM4/9 (WRC-19)** applies. (WRC-19)

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/m²) 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.A919 The use of the frequency band 51.4-52.4 GHz by the fixed-satellite service (Earth-to-space) is limited to geostationary-satellite networks. The earth stations shall be limited to gateway earth stations with a minimum antenna diameter of 2.4 metres. (WRC-19)

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/(m² · 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/(m² · 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.J113 In Regions 1 and 3, and Brazil, and Region 2 the frequency band 66-71 GHz is identified for use by administrations wishing to implement the terrestrial component of

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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. Resolution **COM4/7 (WRC-19)** applies. (WRC-19)

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 and 217-226 GHz, the use of this allocation is limited to space-based radio astronomy only. (WRC-19)

5.562C Use of the band 116-122.25 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 km 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 $-148 \text{ dB(W/(m}^2 \cdot \text{MHz))}$ for all angles of arrival. (WRC-2000)

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

5.562H 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 $-144 \text{ dB(W/(m}^2 \cdot \text{MHz))}$ 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)

5.563B The band 237.9-238 GHz is also allocated to the Earth exploration-satellite service (active) and the space research service (active) for spaceborne cloud radars only. (WRC-2000)

5.X115 For the operation of fixed and land mobile service applications in frequency bands in the range 275-450 GHz:

The frequency bands 275-296 GHz, 306-313 GHz, 318-333 GHz and 356-450 GHz are identified for use by administrations for the implementation of land mobile and fixed service applications, where no specific conditions are necessary to protect Earth exploration-satellite service (passive) applications.

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The frequency bands 296-306 GHz, 313-318 GHz and 333-356 GHz may only be used by fixed and land mobile service applications when specific conditions to ensure the protection of Earth exploration-satellite service (passive) applications are determined in accordance with Resolution **731 (Rev.WRC-19)**.

In those portions of the frequency range 275-450 GHz where radio astronomy applications are used, specific conditions (e.g. minimum separation distances and/or avoidance angles) may be necessary to ensure protection of radio astronomy sites from land mobile and/or fixed service applications, on a case-by-case basis in accordance with Resolution **731 (Rev.WRC-19)**.

The use of the above-mentioned frequency bands by land mobile and fixed service applications does not preclude use by, and does not establish priority over, any other applications of radio services in the range of 275-450 GHz. (WRC-19)

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)