

UNITED REPUBLIC OF TANZANIA

**TANZANIA COMMUNICATIONS
REGULATORY AUTHORITY**



**NATIONAL FREQUENCY
ALLOCATION TABLE**

2020

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Abbreviations used in the Table

AM	Amplitude Modulation
BS	Broadcasting Service
BSS	Broadcasting Satellite Service
E-GSM	Extended Global System for Mobile Communications
EHF	Extra High Frequency (30 GHz – 300 GHz)
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)
GPS	Global Positioning System
GSM	Global System for Mobile Communications
HDFS	High Density Fixed Service
HDFSS	High Density Fixed Satellite Service
HF	High Frequency (3 MHz – 30 MHz)
IEC	International Electrotechnical Commission
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
LF	Low Frequency (30 kHz – 300 kHz)
LMSS	Land Mobile Satellite Service
MF	Medium Frequency (300 kHz – 3 MHz)
MHz	megahertz, 10^6 hertz (cycles per second)
MS	Mobile Service
MSS	Mobile Satellite Service
NFAT	National Frequency Allocation Table
RF	Radio Frequency
Tx	Transmitter

UMTS	Universal Mobile Telecommunications System
UHF	Ultra High Frequency (300 MHz – 3 GHz)
VHF	Very High Frequency (30 – 300 MHz)
VLf	Very Low Frequency (9 kHz – 30 kHz)
VSAT	Very Small Aperture Terminal
WRC	World Radiocommunication Conference
WiMAX	Worldwide Interoperability for Microwave Access
WLAN	Wireless Local Area Network
SRDs	Short Range Devices
PMR	Public Mobile Radio
PAMR	Public Access Mobile Radio

1. Introduction

The National Frequency Allocation Table (NFAT) specifies purposes for which various frequency bands may be used in the United Republic of Tanzania. The Table, however, does not present any right for a frequency band use (or a specific frequency). The use of radio frequency in the United Republic of Tanzania requires Authorization from Tanzania Communication Regulatory Authority which has been mandated to manage spectrum resource under TCRA Act, 2003 and Electronic and Postal Communications Act, 2010.

The National Frequency Allocation Table has been developed in conformity with the International Telecommunications Union (ITU) Radio Regulations, 2020 governing radio spectrum and regional agreements concluded or acceded to TCRA, considering the existing and future requirements of the radio frequencies in the United Republic of Tanzania.

The objective of developing the National Frequency Allocation Table is to provide the framework for the allocation of radio frequencies to various Radiocommunications services to be used by Government and non-Government entities in the United Republic of Tanzania.

2. Amendments

The NFAT may be amended whenever necessary as a result of changes in the ITU radio regulations made by the World Radiocommunication Conference (WRC), Regional Agreements, Public Interests or change in Spectrum Licensing Policy.

3. General Terms

3.1 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 (CS 1002).

3.2 Industrial, Scientific and Medical (ISM) applications

Operation of equipment or appliances designed to generate and use locally radio frequency energy for industrial, scientific, medical, and domestic.

3.3 Radio

A general term applied to the use of radio waves.

3.4 Radio astronomy

Astronomy based on the reception of radio waves of cosmic origin.

3.5 Radio direction-finding

Radiodetermination using the reception of radio waves for the purpose of determining the direction of a station or object.

3.6 Radio waves or Hertzian waves

Electromagnetic waves of frequencies arbitrarily lower than 3000 GHz, propagated in space without artificial guide.

3.7 Radiocommunication

Telecommunication by means of radio waves.

3.8 Radiodetermination

The determination of the position, velocity and/or other characteristics of an object, or the obtaining of information relating to these parameters, by means of the propagation properties of radio waves.

3.9 Radiolocation

Radiodetermination used for purposes other than those of radionavigation.

3.10 Radionavigation

Radiodetermination used for the purposes of navigation, including obstruction warning.

3.11 Space radiocommunication

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

3.12 Telecommunication

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

3.13 Terrestrial radiocommunication

Any radiocommunication other than space radiocommunication or radio astronomy.

4. Specific Terms Related to Frequency Management

4.1 Allocation (of a frequency band)

Refers to 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.

4.2 Allotment (of a radio frequency or radio frequency channel)

Refers to entry of a designated frequency channel in an agreed plan, adopted by a competent conference, for use by one or more administrations for a terrestrial or space radiocommunication service in one or more identified countries or geographical areas and under specified conditions.

4.3 Assignment (of a radio frequency or radio frequency channel)

Refers to authorization given by an administration for a radio.

5. Classification of Radiocommunication Services

The allocation of frequencies shall be classified in accordance with the following services:

5.1 Aeronautical Fixed Service

Such term shall refer to a radiocommunication service between specified fixed points. It is provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air transportation.

5.2 Aeronautical Mobile Service

Such term shall refer to a mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-indicating radio beacon stations may also participate in this service on designated distress and emergency frequencies.

5.3 Aeronautical Mobile-Satellite Service

Such term shall refer to a mobile-satellite service in which mobile earth stations are located on board aircraft. Survival craft stations and emergency position-indicating radio beacon stations may also participate in this service.

5.4 Aeronautical Radionavigation Satellite Service

Such term shall refer to a radio-navigation satellite service in which earth stations are located in the aircraft.

5.5 Aeronautical Radionavigation Service

Such term shall refer to a radionavigation service intended for the benefit and the safe operation of aircraft.

5.6 Amateur Service

Such term shall refer to 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 personal aim and without pecuniary interest.

5.7 Amateur - Satellite Service

Such term shall refer to a radiocommunication service using space stations on earth satellites for the same purposes as those of the amateur service.

5.8 Broadcasting Service

Such term shall refer to a radiocommunication service in which the transmission is intended for direct reception by the general public. This service may include sound transmissions, television transmissions or other types of transmission.

5.9 Broadcasting-Satellite Service

Such term shall refer to 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.

5.10 Earth Exploration-Satellite Service

Such term shall refer to a radiocommunication service between earth stations and one or more space stations; it may include links between space stations. This service shall include the following:

- (1) Data relating to the characteristics of the Earth and its natural phenomena which is obtained from active sensors or passive sensors on Earth satellites;
- (2) Similar data is collected from air or earth-based stations
- (3) Such data can be distributed to earth stations within the system concerned;
- (4) Base station interrogation may be included.

5.11 Fixed Service

Such term shall refer to a radiocommunication service between specified fixed points.

5.12 Fixed-Satellite Service

Such term shall refer to a radiocommunication service between earth stations at given positions, when one or more satellites are used 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.

5.13 Inter-Satellite Service

Such term shall refer to a radiocommunication service for links between artificial satellites.

5.14 Land Mobile Service

Such term shall refer to a mobile service between base stations and land mobile stations, or between land mobile stations.

5.15 Land Mobile-Satellite Service

Such term shall refer to a mobile-satellite service in which mobile earth stations are located on land.

5.16 Maritime Mobile Service

Such term shall refer to 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 radio beacon stations may also participate in this service.

5.17 Maritime Mobile-Satellite Service

Such term shall refer to a mobile-satellite service in which mobile earth stations are located on board ships. Survival craft stations and emergency

position-indicating radio beacon stations may also participate in this service.

5.18 Maritime Radionavigation Satellite Service

Such term shall refer to a radionavigation satellite service in which earth stations are located on board ships.

5.19 Maritime Radionavigation Service

Such term shall refer to a radionavigation service intended for the benefit and the safe operation of ships.

5.20 Meteorological Aids Service

Such term shall refer to a radiocommunication service used for meteorological (including hydrological) observation and exploration.

5.21 Meteorological-Satellite Service

Such term shall refer to an earth exploration-satellite service for meteorological purposes.

5.22 Mobile Service

Such term shall refer to a radiocommunication service between mobile and land stations, or between mobile stations.

5.23 Mobile-Satellite Service

Such term shall refer to the following services:

- (1) A radiocommunication service between mobile earth stations and one or more space stations, or between space stations used by this service.
- (2) A radiocommunication service executed between mobile earth stations by means of one or more space stations. This service may also include feeder links necessary for its operation.

5.24 Port Operations Service

Such term shall refer to a maritime mobile service in or near a port, between coast stations and ship stations, or between ship stations, in which messages are restricted to those relating to the operational handling, the movement and the safety of ships, the communication for safety in case of emergency. Some communications which are correspondence nature shall be excluded from this service.

5.25 Radio Astronomy Service

Such term shall refer to a radiocommunication service involving the use of radio astronomy.

5.26 Radiodetermination Service

Such term shall refer to a radiocommunication service for the purpose of radiodetermination.

5.27 Radiodetermination-Satellite Service

Such term shall refer to a radiocommunication service for the purpose of radiodetermination involving the use of one or more space stations.

5.28 Radiolocation Service

Such term shall refer to a radiodetermination service for the purpose of radiolocation.

5.29 Radionavigation Satellite Service

Such term shall refer to a radiodetermination satellite service for the purpose of radionavigation.

5.30 Radionavigation Service

Such term shall refer to a radiodetermination service for the purpose of radionavigation.

5.31 Safety Service

Such term shall refer to a radiocommunication service used for the safeguarding of human life and property permanently or temporarily.

5.32 Ship Movement Service

Such term shall refer to a maritime mobile safety service between coast stations and ship stations, or between ship stations other than the port operations service. Its messages are restricted to those relating to the movement of ships.

5.33 Space Operation Service

Such term shall refer to 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.

5.34 Space Research Service

Such term shall refer to a radiocommunication service in which spacecraft or other objects in space are used for scientific or technological research purposes.

5.35 Standard Frequency and Time Signal Service

Such term shall refer to a radiocommunication service for scientific, technical and other purposes; it provides the transmission of high precision frequencies, time signals, or both, intended for general reception.

5.36 Standard Frequency and Time Signal-Satellite Service

Such term shall refer to 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.

6. ITU's Radio Frequency Division

Band Number (N)	Band Name	Frequency Scope	Wave Length
4	VLF	3-30kHz	10,000m
5	LF	30-300 kHz	1000 m
6	MF	300-3000 kHz	100 m
7	HF	3-30MHz	10 m
8	VHF	30-300 MHz	1 m
9	UHF	300-3000 MHz	1/10 m
10	SHF	3-30GHz	1/100 m
11	EHF	30-300 GHz	1/1000 m
12	-	300-3000 GHz	1/10,000 m

Remark : Band Number (N) means band is between $0.3 * 10^n$ and $3 * 10^n$.

7. Categories of Services as Primary or Secondary

Where, in this Plan, a band is indicated as allocated to more than one service, such services are listed in the following order:

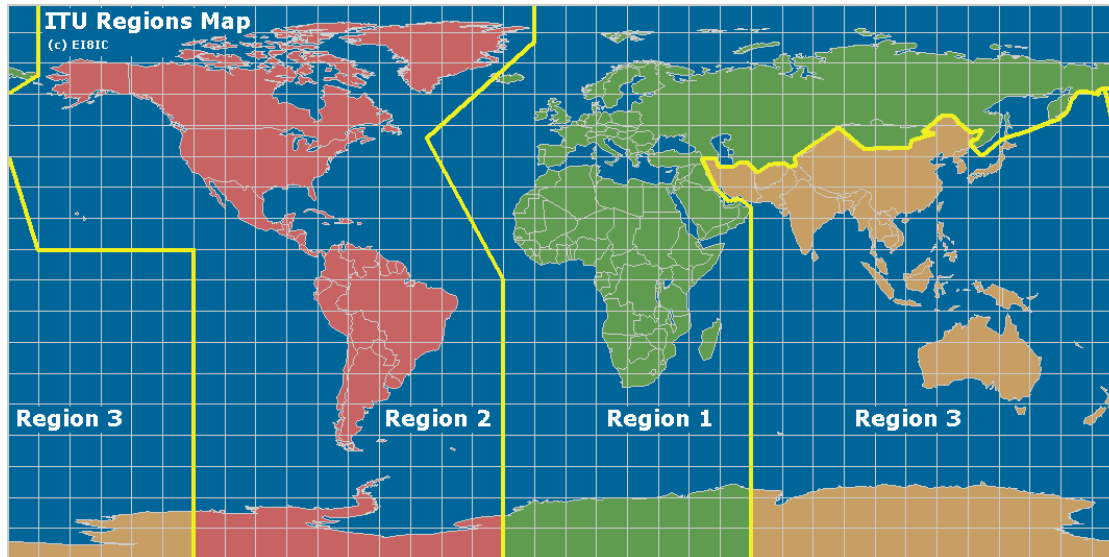
- (1) Services the names of which are printed in **“capital”** (example: FIXED); these are called **“primary”** services;
- (2) Services the names of which are printed in **“normal characters”** (example: Mobile); these are called **“secondary”** services.

The Stations of secondary service:

- (i) shall not cause harmful interference to stations of primary service to which frequencies are already assigned or to which frequencies may be assigned at a later date;
- (ii) 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;
- (iii) can claim protection, however, from harmful interference from stations of the same or other secondary services(s) to which frequencies may be assigned at a later date.

8. ITU Regions of the world

For the allocation of frequencies, The ITU has divided the world into three Regions (United Republic of Tanzania is in Region 1) as shown on the following map:



9. National Table of Frequency Allocations Structure

The National Frequency Allocation Table consists of four columns:

- (1) Column 1- contains frequency bands arranged in kHz, MHz or GHz
- (2) Column 2 – contains ITU allocation of frequency bands for various radiocommunication services in Region 1 and ITU-R article 5 footnotes of radio regulations relevant to Region 1.
- (3) Column 3 –It contains allocation of frequency bands for various radiocommunication services in Tanzania and ITU-R article 5 footnotes of Radio Regulations relevant to Tanzania.
- (4) Column 4 – contains where appropriate information on the band plans, channel arrangement and the main use in Tanzania. However, the main use does not preclude other radiocommunication services allocated to the band. Other relevant information may also be included in this column.

10. National Frequency Allocation Table

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
Below 8.3 kHz	(Not allocated) 5.53 5.54	(Not allocated)	(Not allocated)
8.3 - 9 kHz	METEOROLOGICAL AIDS 5.54A 5.54B 5.54C	METEOROLOGICAL AIDS 5.54A	Lightning detection systems
9 - 11.3 kHz	METEOROLOGICAL AIDS 5.54A RADIONAVIGATION	METEOROLOGICAL AIDS 5.54A RADIONAVIGATION	Lightning detection systems Inductive short -range radiocommunications
11.3 - 14 kHz	RADIONAVIGATION	RADIONAVIGATION	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Navigational Aids
14 - 19.95 kHz	FIXED MARITIME MOBILE 5.57 5.55 5.56	FIXED MARITIME MOBILE 5.57 5.56	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Maritime mobile communications
19.95 - 20.05 kHz	STANDARD FREQUENCY AND TIME SIGNAL (20kHz)	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153
20.05 - 70 kHz	FIXED MARITIME MOBILE 5.57 5.56 5.58	FIXED MARITIME MOBILE 5.57 5.56	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Maritime mobile communications
70 - 72 kHz	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Navigational Aids
72 - 84 kHz	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.56	5.56	Maritime mobile communications Navigational Aids
84 - 86 kHz	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Navigational Aids
86 - 90 kHz	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Maritime mobile communications Navigational Aids
90 - 110 kHz	RADIONAVIGATION 5.62 Fixed 5.64	RADIONAVIGATION 5.62 Fixed 5.64	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Navigational Aids
110 - 112 kHz	FIXED MARITIME MOBILE RADIONAVIGATION 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.64	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Maritime mobile communications Navigational Aids
112 - 115 kHz	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Navigational Aids
115 - 117.6 kHz	RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64 5.66	RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Maritime mobile communications Navigational Aids

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
117.6 - 126 kHz	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Maritime mobile communications Navigational Aids
126 - 129 kHz	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Navigational Aids
129 - 130 kHz	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Maritime mobile communications Navigational Aids
130 - 135.7 kHz	FIXED MARITIME MOBILE 5.64 5.67	FIXED MARITIME MOBILE 5.64	SRDs-Inductive short -range radiocommunications (9kHz-135kHz) as per ITU-R Rec. SM2153 Maritime mobile communications
135.7 - 137.8 kHz	FIXED MARITIME MOBILE Amateur 5.67A 5.64 5.67 5.67B	FIXED MARITIME MOBILE Amateur 5.67A 5.64	Maritime mobile communications Amateur Amateur (135.7-137.8kHz) are limited to maximum radiated power of 1W(e.i.r.p)
137.8 - 148.5 kHz	FIXED MARITIME MOBILE 5.64 5.67	FIXED MARITIME MOBILE 5.64	Maritime mobile communications
148.5 - 255 kHz	BROADCASTING 5.68 5.69 5.70	148.5-200kHz BROADCASTING 5.68	Frequency assignment plan GE075 applies

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
		200kHz-255kHz AERONAUTICAL RADIONAVIGATIONAL SERVICE 5.70	Aeronautical radionavigation service
255 - 283.5 kHz	BROADCASTING AERONAUTICAL RADIONAVIGATION 5.70	AERONAUTICAL RADIONAVIGATION 5.70	Aeronautical radionavigation service
283.5 - 315 kHz	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radio beacons) 5.73 5.74	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73 5.74	Aeronautical radionavigation service
315 - 325 kHz	AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radio beacons) 5.73 5.75	AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radiobeacons) 5.73	Aeronautical radionavigation service
325 - 405 kHz	AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	Aeronautical radionavigation service
405 - 415 kHz	RADIONAVIGATION 5.76	RADIONAVIGATION 5.76	Radionavigation service
415 - 435 kHz	MARITIME MOBILE 5.79 AERONAUTICAL RADIONAVIGATION	MARITIME MOBILE (radiotelegraphy) 5.79 AERONAUTICAL RADIONAVIGATION	Aeronautical radionavigation service Maritime mobile communications Under the MMS, the use of the band 415-495 kHz is limited to radiotelegraphy.
435 - 472 kHz	MARITIME MOBILE 5.79 Aeronautical radionavigation 5.77 5.82	MARITIME MOBILE (radiotelegraphy) 5.79 Aeronautical radionavigation 5.82	Aeronautical radionavigation service Maritime mobile communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
472 - 479 kHz	MARITIME MOBILE 5.79 Amateur 5.80A Aeronautical radionavigation 5.77 5.80 5.80 B 5.82	MARITIME MOBILE (radiotelegraphy) Amateur 5.80A Aeronautical radionavigation 5.82	Aeronautical radionavigation service Maritime mobile communications Coast Stations in the NAVTEX service on 490 kHz; resolution 339 applies. Transmission of navigational and meteorological warning and urgent info for ships (NBDP telegraphy). Article 31 and 52 applies.
479 - 495 kHz	MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.77 5.82	MARITIME MOBILE (radiotelegraphy) 5.79 5.79A Aeronautical radionavigation 5.82	Aeronautical radionavigation service Maritime mobile communications
495 - 505 kHz	MARITIME MOBILE 5.82C	MARITIME MOBILE 5.82C	Maritime mobile communications limited to radiotelegraphy article 31 and 52 applies For International NAVDAT systems Rec ITU R M.2010 applies
505 - 526.5 kHz	MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION	MARITIME MOBILE (radiotelegraphy) 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION	Aeronautical radionavigation service Maritime mobile communications Coastal Stations in the NAVTEX service on 518kHz; Res. 339 applies. Article 31 and 52 apply Under the MMS the use of the band 505-526.5 kHz is limited to radiotelegraphy For NAVDAT system Rec ITU-R M.2010 applies
526.5 - 1606.5 kHz	BROADCASTING	526.5-535kHz BROADCASTING	Land and/or maritime mobile communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.87 5.87A	Mobile 5.87	
		535-1606.5kHz BROADCASTING 5.87	AM Radio broadcasting (Frequency assignment plan GE075 applies) MW Sound Broadcasting
1606.5 - 1625 kHz	FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	Maritime mobile communications Land mobile communications
1625 - 1635 kHz	RADIOLOCATION 5.93	RADIOLOCATION	Radiolocation services Navigational Aids
1635 - 1800 kHz	FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92 5.96	FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	Maritime mobile communications Land mobile communications
1800 - 1810 kHz	RADIOLOCATION 5.93	RADIOLOCATION 5.93	Radiolocation services Navigational Aids
1810 - 1850 kHz	AMATEUR 5.98 5.99 5.100 5.101	AMATEUR	Amateur communications
1850 - 2000 kHz	FIXED MOBILE except aeronautical Mobile 5.92 5.96 5.103	FIXED MOBILE except aeronautical Mobile 5.92 5.103	Maritime and/or land mobile communication
2000 - 2025 kHz	FIXED MOBILE except aeronautical Mobile 5.92 5.103	FIXED MOBILE except aeronautical Mobile 5.92 5.103	Maritime and/or land mobile communication
2025 - 2045 kHz	FIXED	FIXED	Maritime and/or land mobile

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	MOBILE except aeronautical mobile (R) Meteorological aids 5.104 5.92 5.103	MOBILE except aeronautical mobile (R) Meteorological (oceanographic) 5.104 5.92 5.103	communication
2045 - 2160 kHz	FIXED MARITIME MOBILE LAND MOBILE 5.92	FIXED MARITIME MOBILE LAND MOBILE 5.92	Maritime and/or land mobile communication
2160 - 2170 kHz	RADIOLOCATION 5.93 5.107	RADIOLOCATION	Radiolocation Services Navigational Aids
2170 - 2173.5 kHz	MARITIME MOBILE	MARITIME MOBILE	Maritime mobile communications
2173.5 - 2190.5 kHz	MOBILE (distress and calling) 5.108 5.109 5.110 5.111	MOBILE (distress and calling) 5.108 5.109 5.110 5.111	2182 kHz is an international distress and calling frequency for radiotelephony. 2187.5 kHz – DSC for distress and calling; Article 31 applies. 2174.5 kHz – international distress frequency for NBDP telegraphy; Article 31 applies.
2190.5 - 2194 kHz	MARITIME MOBILE	MARITIME MOBILE	Maritime mobile communications
2194 - 2300 kHz	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.112	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	Maritime and/or land mobile communication
2300 - 2498 kHz	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.103	Maritime and/or land mobile communication

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.103		
2498 - 2501 kHz	STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	Standard Frequency And Time Signal Services (2500 kHz)
2501 - 2502 kHz	STANDARD FREQUENCY AND TIME SIGNAL Space Research	STANDARD FREQUENCY AND TIME SIGNAL Space Research	Standard Frequency And Time Signal Services
2502 - 2625 kHz	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.114	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	Maritime and/or land mobile communication
2625 - 2650 kHz	MARITIME MOBILE MARITIME RADIONAVIGATION 5.92	MARITIME MOBILE MARITIME RADIONAVIGATION 5.92	Maritime mobile communications Navigational Aids
2650 - 2850 kHz	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	Maritime and/or land mobile communication
2850 - 3025 kHz	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) 5.111 5.115	Aeronautical communications Aeronautical mobile (R) 3023 kHz may be used under the MMS for search and rescue operations (see Article 31)
3025 - 3155 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical communications Aeronautical (OR)
3155 - 3200 kHz	FIXED	FIXED MOBILE except aeronautical mobile (R)	Maritime and/or land mobile communication SDRs: Wireless Hearing aids

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	MOBILE except aeronautical mobile (R) 5.116 5.117	5.116	Worldwide channel for low power hearing aids (3155-3195 kHz).Additional channel may be assigned in the band 3155-3400kHz; see also ITU R SM 2153
3200 - 3230 kHz	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	Maritime and/or land mobile communication Worldwide channel for low power hearing aids (3155-3195 kHz). Additional channel may be assigned in the band 3155-3400kHz;
3230 - 3400 kHz	FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116 5.118	FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116	Maritime and/or land mobile communication Worldwide channel for low power hearing aids (3155-3195 kHz). Additional channel may be assigned in the band 3155-3400kHz;
3400 - 3500 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical communications Appendix 27 allotment Plan applies
3500 - 3800 kHz	AMATEUR FIXED MOBILE except aeronautical Mobile 5.92	AMATEUR FIXED MOBILE except aeronautical Mobile 5.92	Amateur communications Maritime and/or Land mobile communications
3800 - 3900 kHz	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	Aeronautical communications Aeronautical mobile (OR) Appendix 26 allotment plan applies

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
3900 - 3950 kHz	AERONAUTICAL MOBILE (OR) 5.123	AERONAUTICAL MOBILE (OR)	Aeronautical communications Aeronautical mobile (OR) Appendix 26 allotment plan applies
3950 - 4000 kHz	FIXED BROADCASTING	FIXED BROADCASTING	Fixed communications
4000 - 4063 kHz	FIXED MARITIME MOBILE 5.127 5.126	FIXED MARITIME MOBILE (radiotelephone) 5.127	Fixed Maritime mobile communications Use of the band 4000-4063kHz by MMS is limited to ship stations using radiotelephony
4063 - 4438 kHz	MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128	MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128	Maritime mobile communications 4209.5 kHz- Coast Stations in the NAVTEX service; Res 339 applies. Article 31 and 52 apply. 4207.5kHz-DSC for distress and calling; Article 31 applies. 4177.5 kHz- international distress frequency for NBDP telegraphy; article 31 applies. 4125 kHz use of this frequency is prescribed in Article 31. 4209.5 kHz-exclusive for transmission by coastal station of meteorological and navigational warnings and urgent information to ships (NBDP) 4210kHz-maritime safety information (MSI); appendix 17 applies.
4438 - 4488 kHz	FIXED MOBILE except	FIXED MOBILE except aeronautical	Maritime and/or land mobile communication

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	aeronautical mobile (R) Radiolocation 5.132A 5.132B	mobile (R) Radiolocation 5.132A	Radiolocation Services
4488 - 4650 kHz	FIXED MOBILE except aeronautical mobile (R)	FIXED MOBILE except aeronautical mobile (R)	Fixed/ Land mobile communications
4650 - 4700 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical communications Aeronautical Mobile (R) Appendix 27 Allotment Plan applies
4700 - 4750 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical communications Aeronautical Mobile (R) Appendix 26 Allotment Plan applies
4750 - 4850 kHz	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 5.113	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 5.113	Aeronautical and/or Land mobile Sound Broadcasting
4850 - 4995 kHz	FIXED LAND MOBILE BROADCASTING 5.113	FIXED LAND MOBILE BROADCASTING 5.113	Fixed/ Land mobile communications Land Mobile Sound Broadcasting
4995 - 5003 kHz	STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	Standard Frequency And Time Signal Services
5003 - 5005 kHz	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research	Standard Frequency And Time Signal Services
5005 - 5060 kHz	FIXED	FIXED	Fixed communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	BROADCASTING 5.113	BROADCASTING 5.113	Sound Broadcasting
5060 - 5250 kHz	FIXED Mobile except aeronautical mobile 5.133	FIXED Mobile except aeronautical mobile	Fixed/ Land mobile communications Harmonised HF frequencies for cross border mobile communication within SADC countries
5250 - 5275 kHz	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A 5.133A	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A	Fixed/ Land mobile communications Radiolocation services Harmonised HF frequencies for cross border mobile communication within SADC countries
5275 - 5351.5 kHz	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	Fixed/ Land mobile communications Aeronautical Mobile
5351.5 - 5366.5 kHz	FIXED MOBILE except aeronautical mobile Amateur 5.133B	FIXED MOBILE except aeronautical mobile Amateur	Fixed/ Land mobile communications Amateur services
5366.5 - 5450 kHz	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	Fixed/ Land mobile communications
5450 - 5480 kHz	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	Fixed/ Land mobile communications Aeronautical communications Appendix 27 Allotment Plan applies
5480 - 5680 kHz	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) 5.111 5.115	Aeronautical communications Appendix 27 Allotment Plan applies
5680 - 5730 kHz	AERONAUTICAL MOBILE (OR) 5.111 5.115	AERONAUTICAL MOBILE (OR) 5.111 5.115	5680kHz may be used under the MMS for search and rescue operations (see article 31)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
			6215kHz-use of this frequency prescribed in Article 31 SRD applications (6765-6795kHz) Common international SRD band; ITU-R Rec SM [SRD] Appendix 26 Allotment Plan applies
5730 - 5900 kHz	FIXED LAND MOBILE	FIXED LAND MOBILE	Fixed/ Land mobile communications
5900 - 5950 kHz	BROADCASTING 5.134 5.136	BROADCASTING 5.134 5.136	HF sound broadcasting Article 12 planning Procedures and Res 517 (WRC-19)applies
5950 - 6200 kHz	5 950-6 200 kHz BROADCASTING	5 950-6 200 kHz BROADCASTING	HF sound broadcasting ITU RR Article 12 planning procedure applies
6200 - 6525 kHz	MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137	MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137	Maritime mobile communications 6312 kHz and 6215 kHz – DSC for distress and calling; Article 31 applies 6268 kHz – international distress frequency for NBDP telegraphy; Article 31 applies. 6314 kHz – maritime safety information (MSI); App.17 applies Maritime mobile communications 6312 kHz and 6215 kHz – DSC for distress and calling; Article 31 applies 6268 kHz – international distress frequency for NBDP telegraphy; Article 31 applies.

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
			6314 kHz – maritime safety information (MSI); App.17 applies
6525 - 6685 kHz	AERONAUTICAL MOBILE (R)	6 525-6 685 kHz AERONAUTICAL MOBILE (R)	Aeronautical communications Appendix 27 allotment applies
6685 - 6765 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical communications Appendix 26 allotment applies
6765 - 7000 kHz	FIXED MOBILE except aeronautical mobile (R) 5.138	FIXED MOBILE except aeronautical mobile (R) 5.138	ISM band limited to 6765-6795 kHz
7000 - 7100 kHz	AMATEUR AMATEUR-SATELLITE 5.140 5.141 5.141A	AMATEUR AMATEUR-SATELLITE	Amateur communications
7100 - 7200 kHz	AMATEUR 5.141A 5.141B	AMATEUR	Amateur communications
7200 - 7300 kHz	BROADCASTING	BROADCASTING	HF sound broadcasting ITU RR Article 12 Planning procedure applies
7300 - 7400 kHz	BROADCASTING 5.134 5.143 5.143A 5.143B 5.143C 5.143D	BROADCASTING 5.134 5.143 5.143B	HF sound broadcasting ITU RR Article 12 Planning procedure and Res. 517 apply
7400 - 7450 kHz	BROADCASTING 5.143B 5.143C	BROADCASTING 5.143B	HF sound broadcasting ITU RR Article 12 Planning procedure applies
7450 - 8100 kHz	FIXED MOBILE except aeronautical mobile (R) 5.144	FIXED MOBILE except aeronautical mobile (R)	Fixed/ Land mobile communications Harmonised HF frequencies for cross border mobile communication within SADC countries
8100 - 8195 kHz	FIXED MARITIME MOBILE	FIXED MARITIME MOBILE	Fixed communications Maritime mobile communications
8195 - 8815 kHz	MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111	MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111	Maritime mobile communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
			8414.5 kHz – DSC for distress and calling; Article 31 applies 8 376.5 kHz – international distress frequency for NBDP telegraphy; Article 31 applies. 8416.5 kHz – maritime safety information (MSI); App.17 applies. ITU RR Appendix 17 Channelling Plan applies ITU RR Appendix 25 Allotment Plan applies
8815 - 8965 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical communications Appendix 27 Allotment Plan applies
8965 - 9040 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical communications Appendix 26 Allotment Plan applies
9040 - 9305 kHz	FIXED	FIXED	Fixed communications
9305 - 9355 kHz	FIXED Radiolocation 5.145A 5.145B	FIXED Radiolocation (oceanographic radars) 5.145A	Fixed communications Radiolocation services
9355 - 9400 kHz	FIXED	FIXED	Fixed communications
9400 - 9500 kHz	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	HF sound broadcasting Article 12 Planning Procedures and Res.517 (WRC-19) applies
9500 - 9900 kHz	BROADCASTING 5.147	BROADCASTING 5.147	HF sound broadcasting Article 12 Planning Procedures applies
9900 - 9995 kHz	FIXED	FIXED	Fixed communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
9995 - 10003 kHz	STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 5.111	Standard Frequency And Time Signal Services
10003 - 10005 kHz	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	Standard Frequency And Time Signal Services
10005 - 10100 kHz	AERONAUTICAL MOBILE (R) 5.111	AERONAUTICAL MOBILE (R) 5.111	Aeronautical communications Appendix 27 Allotment Plan applies
10100 - 10150 kHz	FIXED Amateur	FIXED Amateur	Fixed communications Amateur communications
10150 - 11175 kHz	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	Fixed/ Land mobile communications Harmonised HF frequencies for cross border mobile communication within SADC countries
11175 - 11275 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical communications Appendix 26 Allotment Plan applies
11275 - 11400 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical communications Appendix 27 Allotment Plan applies
11400 - 11600 kHz	FIXED	FIXED	Fixed communications
11600 - 11650 kHz	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	HF sound broadcasting Article 12 Planning Procedures and Res.517 (WRC 19) applies
11650 - 12050 kHz	BROADCASTING 5.147	BROADCASTING 5.147	HF sound broadcasting Article 12 Planning Procedures applies
12050 - 12100 kHz	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	HF sound broadcasting Article 12 Planning Procedures and Res.517 (WRC 19) applies
12100 - 12230 kHz	FIXED	FIXED	Fixed communications
12230 - 13200 kHz	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.145	Maritime mobile communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
			12 577 kHz – DSC for distress and calling; Article 31 applies 12 520 kHz – international distress frequency for NBDP telegraphy; Article 31 applies. 12 579 kHz – maritime safety information (MSI); App.17 applies. ITU RR Appendix 17 Channelling Plan applies ITU RR Appendix 25 Allotment Plan applies
13200 - 13260 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical communications Appendix 26 Allotment Plan Applies
13260 - 13360 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical communications Appendix 27 Allotment Plan Applies
13360 - 13410 kHz	FIXED RADIO ASTRONOMY 5.149	FIXED RADIO ASTRONOMY 5.149	Fixed communications Radio Astronomy
13410 - 13450 kHz	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	Maritime and/or land mobile communications The band 13 553-13 567 kHz is designated for ISM applications (5.150). SRD applications (13 553-13 567kHz)
13450 - 13550 kHz	FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132A	FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132A	Fixed/ Land mobile communications Radiolocation services

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.149A		
13550 - 13570 kHz	FIXED Mobile except aeronautical mobile (R) 5.150	FIXED Mobile except aeronautical mobile (R) 5.150	Fixed/ Land mobile communications
13570 - 13600 kHz	BROADCASTING 5.134 5.151	BROADCASTING 5.134 5.151	HF sound broadcasting Article 12 Planning Procedures and Res.517 (WRC-19) applies
13600 - 13800 kHz	BROADCASTING	BROADCASTING	HF sound broadcasting ITU RR Article 12 Planning Procedures applies
13800 - 13870 kHz	BROADCASTING 5.134 5.151	BROADCASTING 5.134 5.151	HF sound broadcasting ITU RR Article 12 Planning Procedures applies
13870 - 14000 kHz	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	Fixed/ Land mobile communications
14000 - 14250 kHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	Amateur communications
14250 - 14350 kHz	AMATEUR 5.152	AMATEUR	Amateur communications
14350 - 14990 kHz	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	Fixed/ Land mobile communications
14990 - 15005 kHz	STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 5.111	Standard Frequency And Time Signal Services
15005 - 15010 kHz	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research	Standard Frequency And Time Signal Services
15010 - 15100 kHz	AERONAUTICAL MOBILE	AERONAUTICAL MOBILE (OR)	Aeronautical communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	(OR)		Appendix 26 Allotment Plan applies
15100 - 15600 kHz	BROADCASTING	BROADCASTING	HF sound broadcasting ITU RR Article 12 Planning Procedures applies
15600 - 15800 kHz	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	HF sound broadcasting Article 12 Planning Procedures and Res.517 (WRC-19) applies
15800 - 16100 kHz	FIXED 5.153	FIXED	Fixed communications
16100 - 16200 kHz	FIXED Radiolocation 5.145A 5.145B	FIXED Radiolocation 5.145A	Fixed communications Radiolocation services
16200 - 16360 kHz	FIXED	FIXED	Fixed communications
16360 - 17410 kHz	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.145	Maritime mobile communications Maritime mobile communications 16 804.5kHz – DSC for distress and calling; Article 31 applies. 16 695 kHz – international distress frequency for NBDP telegraphy; Article 31 applies. 16 806.5 kHz – maritime safety information (MSI); App.17 applies ITU RR Appendix 17 Channelling Plan applies ITU RR Appendix 25 Allotment Plan applies
17410 - 17480 kHz	FIXED	FIXED	Fixed communications
17480 - 17550 kHz	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	HF sound broadcasting Article 12 Planning Procedures and Res.517 (WRC-19) applies

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
17550 - 17900 kHz	BROADCASTING	BROADCASTING	HF sound broadcasting ITU RR Article 12 Planning Procedures applies
17900 - 17970 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical communications Appendix 27 Allotment Plan applies
17970 - 18030 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical communications Appendix 26 Allotment Plan applies
18030 - 18052 kHz	FIXED	FIXED	Fixed communications
18052 - 18068 kHz	FIXED Space research	FIXED Space research	Fixed communications
18068 - 18168 kHz	AMATEUR AMATEUR-SATELLITE 5.154	AMATEUR AMATEUR-SATELLITE	Amateur services
18168 - 18780 kHz	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile	Fixed/ Land mobile communications
18780 - 18900 kHz	MARITIME MOBILE	MARITIME MOBILE	Maritime mobile communications ITU RR appendix 17 Channel plan applies
18900 - 19020 kHz	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	HF sound broadcasting Article 12 Planning Procedures and Res.517 (WRC-19) applies
19020 - 19680 kHz	FIXED	FIXED	Fixed communications
19680 - 19800 kHz	MARITIME MOBILE 5.132	MARITIME MOBILE 5.132	Maritime mobile communications 19 680.5 kHz – maritime safety information (MSI); App.17 applies The frequency 19 680.5 kHz is the international frequency for transmission of MSI.
19800 - 19990 kHz	FIXED	FIXED	Fixed communications
19990 - 19995 kHz	STANDARD FREQUENCY	STANDARD FREQUENCY AND	Standard Frequency

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	AND TIME SIGNAL Space research 5.111	TIME SIGNAL Space research 5.111	And Time Signal Services
19995 - 20010 kHz	STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 5.111	Standard Frequency And Time Signal Services
20010 - 21000 kHz	FIXED	FIXED	Fixed communications
21000 - 21450 kHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	Amateur services
21450 - 21850 kHz	BROADCASTING	BROADCASTING	HF sound broadcasting ITU RR Article 12 Planning Procedures applies
21850 - 21870 kHz	FIXED 5.155A 5.155	FIXED	Fixed communications
21870 - 21924 kHz	FIXED 5.155B	FIXED 5.155B	Fixed communications This band is used by the FS for services related to aircraft flight safety (5.155B)
21924 - 22000 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical communications Appendix 27 Allotment Plan applies
22000 - 22855 kHz	MARITIME MOBILE 5.132 5.156	MARITIME MOBILE 5.132	Maritime mobile communications 22 376 kHz – maritime safety information (MSI); App.17 applies 22 376 kHz – maritime safety information (MSI); App.17 applies ITU RR Appendix 17 Channelling Plan applies. ITU RR Appendix 25 Allotment Plan applies. The frequency 22 376 kHz is the

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
			international frequency for transmission of MSI.
22855 - 23000 kHz	FIXED 5.156	FIXED 5.156	Fixed communications
23000 - 23200 kHz	FIXED Mobile except aeronautical mobile (R) 5.156	FIXED Mobile except aeronautical mobile (R)	Fixed/ Land mobile communications
23200 - 23350 kHz	FIXED 5.156A AERONAUTICAL MOBILE (OR)	FIXED (flight safety) 5.156A AERONAUTICAL MOBILE (OR)	Aeronautical communications The use of this band by the FS is limited to the provision of services related to aircraft flight safety (5.156A)
23350 - 24000 kHz	FIXED MOBILE except aeronautical mobile 5.157	FIXED MOBILE except aeronautical mobile 5.157	Fixed/ Land mobile communications The use of this band by the MMS is limited to inter-ship radiotelegraphy (5.157).
24000 - 24450 kHz	FIXED LAND MOBILE	FIXED LAND MOBILE	Fixed/ Land mobile communications
24450 - 24600 kHz	FIXED LAND MOBILE Radiolocation 5.132A 5.158	FIXED LAND MOBILE Radiolocation 5.132A	Fixed/ Land mobile communications Radiolocation services
24600 - 24890 kHz	FIXED LAND MOBILE	FIXED LAND MOBILE	Fixed/ Land mobile communications
24890 - 24990 kHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	Amateur communications
24990 - 25005 kHz	STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	Standard Frequency And Time Signal Services
25005 - 25010 kHz	STANDARD FREQUENCY AND TIME SIGNAL	STANDARD FREQUENCY AND TIME SIGNAL	Standard Frequency And Time Signal Services

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	Space research	Space research	
25010 - 25070 kHz	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	Fixed/ Land mobile communications
25070 - 25210 kHz	MARITIME MOBILE	MARITIME MOBILE	Maritime mobile communications ITU RR Appendix 17 Channelling Planning procedures applies
25210 - 25550 kHz	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	Fixed/ Land mobile communications
25550 - 25670 kHz	RADIO ASTRONOMY 5.149	RADIO ASTRONOMY 5.149	Radio Astronomy
25670 - 26100 kHz	BROADCASTING	BROADCASTING	HF sound broadcasting ITU RR Article 12 Planning Procedures applies
26100 - 26175 kHz	MARITIME MOBILE 5.132	MARITIME MOBILE 5.132	Maritime mobile communications 26 100.5 kHz – maritime safety information (MSI); App.17 applies ITU RR Appendix 17 Channelling Plan applies. ITU RR Appendix 25 Allotment Plan applies. The frequency 26 100.5 kHz is the international frequency for transmission of MSI.
26175 - 26200 kHz	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	Fixed/ Land mobile communications Mobile systems (single frequency) CB Radio (26.96-27.410 MHz)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
			ISM applications (26.975-27.283 MHz) SRD applications (26 957-27 283 kHz) Common international SRD band; see ITU-R Rec.SM.2153
26200 - 26350 kHz	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A 5.133A	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A	Fixed/ Land mobile communications Radiolocation services
26350 - 27500 kHz	FIXED MOBILE except aeronautical Mobile 5.150	FIXED MOBILE except aeronautical Mobile 5.150	Fixed/ Land mobile communications
27.5 - 28 MHz	METEOROLOGICAL AIDS FIXED MOBILE	METEOROLOGICAL AIDS FIXED MOBILE	Metrological Aids Fixed/ Land mobile communications
28 - 29.7 MHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	Amateur communications
29.7 - 30.005 MHz	FIXED MOBILE	FIXED MOBILE	Fixed/ Land mobile communications
30.005 - 30.01 MHz	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	Fixed/ Land mobile communications
30.01 - 37.5 MHz	FIXED	FIXED	Fixed/ Land mobile communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	MOBILE	MOBILE	PMR
37.5 - 38.25 MHz	FIXED MOBILE Radio astronomy 5.149	FIXED MOBILE Radio astronomy 5.149	Fixed/ Land mobile communications Radio astronomy PMR
38.25 - 39 MHz	FIXED MOBILE	FIXED MOBILE	Fixed/ Land mobile communications
39 - 39.5 MHz	FIXED MOBILE Radiolocation 5.132A 5.159	FIXED MOBILE Radiolocation 5.132A	Fixed/ Land mobile communications Radiolocation Services
39.5 - 39.986 MHz	FIXED MOBILE	FIXED MOBILE	Fixed/ Land mobile communications
39.986 - 40.02 MHz	FIXED MOBILE Space research	FIXED MOBILE Space research	Fixed/ Land mobile communications PMR
40.02 - 40.98 MHz	FIXED MOBILE 5.150	FIXED MOBILE 5.150	PMR ISM band limited to 40.66-40.70 MHz SRD applications (40.66-40.77MHz) Common international SRD band; see ITU-R Rec.SM.2153
40.98 - 41.015 MHz	FIXED MOBILE Space research 5.160 5.161	FIXED MOBILE Space research	Fixed/ Land mobile communications PMR
41.015 - 42 MHz	FIXED MOBILE 5.160 5.161 5.161A	FIXED MOBILE	Fixed/ Land mobile communications PMR
42 - 42.5 MHz	FIXED MOBILE	FIXED MOBILE	Fixed/ Land mobile communications Radiolocation services

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	Radiolocation 5.132A 5.160 5.161B	Radiolocation 5.132A	
42.5 - 44 MHz	FIXED MOBILE 5.160 5.161 5.161A	FIXED MOBILE	Fixed/ Land mobile communications
44 - 47 MHz	FIXED MOBILE 5.162 5.162A	FIXED MOBILE	Fixed/ Land mobile communications PMR Meteor Burst (45.3-46.9 MHz) CT0 Cordless Telephony BTx (46.61-46.97 MHz) Paired with 47.5-49.1 MHz
47 - 50 MHz	BROADCASTING 5.162A 5.163 5.164 5.165	BROADCASTING 5.162A 5.163 5.164 5.165	Broadcasting PMR Meteor Burst (47.5-49.1 MHz) CT0 Cordless Telephony MTx (49.67-49.97 MHz) Paired with 45.3-46.9 MHz Paired with (46.61-46.97 MHz)
50 - 52 MHz	50-52 BROADCASTING ^[1] _{SEP} Amateur 5.166A 5.166B 5.166C 5.166D 5.166E 5.169 5.169A 5.169B ^[1] _{SEP} 5.162A 5.164 5.165	50-52 BROADCASTING ^[1] _{SEP} Amateur 5.166A 5.166B 5.166C 5.166D 5.166E 5.169 5.169A 5.169B ^[1] _{SEP} 5.162A 5.164 5.165	Armature services
52 - 68 MHz	BROADCASTING 5.162A 5.163 5.164 5.165	BROADCASTING 5.162A 5.163 5.164 5.165	HF sound broadcasting Fixed/ Land mobile communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.169 5.169A 5.169 B 5.171	5.169 5.169A 5.169 B 5.171	Armature services
68 - 74.8 MHz	FIXED MOBILE except aeronautical mobile 5.149 5.175 5.177 5.179	FIXED MOBILE except aeronautical Mobile 5.149	Fixed/ Land mobile communications PMR and/or PAMR
74.8 - 75.2 MHz	AERONAUTICAL RADIONAVIGATION 5.180 5.181	AERONAUTICAL RADIONAVIGATION 5.180	Aeronautical Radionavigation services Instrument Landing System (ILS) Mark beacons (75MHz)
75.2 - 87.5 MHz	FIXED MOBILE except aeronautical Mobile 5.175 5.179 5.187	FIXED MOBILE except aeronautical Mobile	Fixed/ Land mobile communications
87.5 - 100 MHz	BROADCASTING 5.190	BROADCASTING	FM Radio broadcasting (in accordance to GE 84 agreement)
100 - 108 MHz	BROADCASTING 5.192 5.194	BROADCASTING	FM Radio broadcasting (in accordance to GE 84 agreement)
108 - 117.975 MHz	AERONAUTICAL RADIONAVIGATION 5.197 5.197A	AERONAUTICAL RADIONAVIGATION 5.197A	Aeronautical Radionavigation services Instrument Landing System (ILS) / Localiser (108-112 MHz) VHF Omni-directional Range (VOR) (112-117.975 MHz) Aeronautical mobile communications (108-117.975 MHz) AM(R)S shall operate in accordance with Res.413 (Rev.WRC-07). Safety and regularity of flights; in the band

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
			108-112 MHz AM(R)S limited to ground based transmitters.
117.975 - 137 MHz	AERONAUTICAL MOBILE (R) 5.111 5.200 5.201 5.202	AERONAUTICAL MOBILE (R) 5.111 5.200	117.975-121.450 MHz Aeronautical mobile communications (Safety and regularity of flights)
			121.450-121.550 MHz International Distress Frequency (121.5 MHz) (EPIRBs at 121.5 MHz ITU RR Article 31 applies)
			121.550-137.000 MHz Aeronautical mobile communications (123.1 MHz - auxiliary emergency frequency)
137 - 137.025 MHz	SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A,5.208B, 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	SPACE OPERATION (space-to-Earth) 5.203C 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	Fixed/ Land mobile communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
137.025 - 137.175 MHz	SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.204 5.205 5.206 5.207 5.208	SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.204 5.205 5.206 5.207 5.208	Fixed/ Land mobile communications
137.175 - 137.825 MHz	SPACE OPERATION (space-to-Earth) 5.203C 5.2029A METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	SPACE OPERATION (space-to-Earth) 5.203C 5.209A 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	Fixed/ Land mobile communications NOAA meteorology satellite (137.500-137.620 MHz)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
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137.825 - 138 MHz	SPACE OPERATION (space-to-Earth)5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.204 5.205 5.206 5.207 5.208	SPACE OPERATION (space-to-Earth)5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.204 5.205 5.206 5.207 5.208	Fixed/ Land mobile communications
138 - 143.6 MHz	AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	AERONAUTICAL MOBILE (OR) MARITIME MOBILE MOBILE FIXED 5.211 5.214	Aeronautical communications Fixed/ Land mobile communications Maritime mobile communications PMR and/or PAMR
143.6 - 143.65 MHz	AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space-to-Earth) 5.211 5.212 5.214	AERONAUTICAL MOBILE (OR) SPACE RESEARCH MARITIME MOBILE MOBILE FIXED (space-to-Earth)5.211 5.214	Aeronautical communications Fixed/ Land mobile communications Maritime mobile communications PMR and/or PAMR

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
143.65 - 144 MHz	AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	AERONAUTICAL MOBILE (OR) MARITIME MOBILE MOBILE FIXED 5.211 5.214	Aeronautical communications Fixed/ Land mobile communications Maritime mobile communications PMR and/or PAMR
144 - 146 MHz	AMATEUR AMATEUR-SATELLITE 5.216	AMATEUR AMATEUR-SATELLITE	Amateur services
146 - 148 MHz	FIXED MOBILE except aeronautical mobile (R)	FIXED MOBILE except aeronautical mobile (R)	Fixed/ Land mobile communications PMR and/or PAMR
148 - 149.9MHz	FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219 5.221	FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219 5.221	Fixed/ Land mobile communications Mobile satellite communications (little LEO)
149.9 - 150.05 MHz	MOBILE-SATELLITE (Earth-to-space) 5.209 5.224A RADIONAVIGATION- SATELLITE 5.224B 5.220 5.222 5.223	MOBILE-SATELLITE (Earth-to- space) 5.209 RADIONAVIGATION-SATELLITE 5.224B 5.220 5.222 5.223	Mobile satellite communications (little LEO) This band is supplemented by the band 149.9-150.05 MHz
150.05 - 153 MHz	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	Fixed/ Land mobile communications PMR and/or PAMR Paging
153 - 154 MHz	FIXED	FIXED	Fixed/ Land mobile communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	MOBILE except aeronautical mobile (R) Meteorological aids	MOBILE except aeronautical mobile (R) Meteorological aids	Metrological services PMR and/or PAMR
154 -156.4875 MHz	FIXED MOBILE except aeronautical mobile (R) 5.225A 5.226	FIXED MOBILE except aeronautical mobile (R) 5.226	Fixed/ Land mobile communications 154-156 MHz(PMR and/or PAMR)
156.4875 - 156.5625 MHz	MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227	MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227	156.00-156.4875 MHz Maritime mobile communications (Ship stations) Land mobile in areas remote from coast The above frequency is Paired with 160.625-160.950 MHz, single frequency 156.3 MHz and in the band 156.375-156.475 MHz. ITU RR Articles 31 and 52 and Appendix 18 apply.
156.5625 - 156.7625 MHz	FIXED MOBILE except aeronautical mobile (R) 5.226	FIXED MOBILE except aeronautical mobile (R) 5.226	156.5625-156.7625 MHz Maritime mobile communications. Land mobile in areas remote from coast. Single frequency applications, ITU RR Articles 31 and 52 and Appendix 18 apply.
156.7625 - 156.7875 MHz	MARITIME MOBILE Mobile-satellite (Earth-to-space) 5.111 5.226 5.228	MARITIME MOBILE Mobile-satellite (Earth-to-space) 5.111 5.226 5.228	International distress, safety and calling frequency at 156.8 MHz for the maritime mobile VHF radiotelephone service. ITU RR Article 31 and Appendix 18

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
			apply to the use of the frequency 156.8 MHz and this band.
156.7875 - 156.8375 MHz	MARITIME MOBILE (distress and calling) 5.111 5.226	MARITIME MOBILE (distress and calling) 5.111 5.226	Maritime communications
156.8375 - 157.1875 MHz	FIXED MOBILE except aeronautical mobile 5.226	FIXED MOBILE except aeronautical mobile 5.226	Fixed/ Land mobile communications 156.8375-157.45 MHz Maritime mobile communications (ship stations). Land mobile in areas remote from coast. The frequency above is Paired with 161.5-162.0 MHz and single frequency applications; ITU RR Articles 31 and 52 and Appendix 18 applies
157.1875 - 157.3375 MHz	FIXED MOBILE except aeronautical mobile Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228 AC 5.226	FIXED MOBILE except aeronautical mobile Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228 AC 5.226	Maritime mobile communications (ship Stations). Land mobile in areas remote from coast.
157.3375 - 161.7875 MHz	FIXED MOBILE except aeronautical mobile 5.226	FIXED MOBILE except aeronautical mobile 5.226	PMR/PAMR Maritime Communications 157.450-160.6 MHz (PMR and/or PAMR)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
			160.600-160.975 MHz Maritime mobile communications (Coast stations). Land mobile in areas remote from coast. This frequency is Paired with 156.025-156.350 MHz; ITU RR Articles 31 and 52 and Appendix 18 applies 160.975-161.475 MHz(PMR and/or PAMR
161.7875 - 161.9375 MHz	FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.208A 5.208B 5.228AB 5.228AC 5.226	FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.208A 5.208B 5.228AB 5.228AC 5.226	Fixed/ Land `mobile communication
161.9375 - 162.0125 MHz	FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226 5.229	FIXED MOBILE except aeronautical mobile	Fixed/ Land mobile communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
162.0125 - 162.0375 MHz	FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B 5.229	FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B	Fixed/ Land mobile communications
162.0375 - 174 MHz	FIXED MOBILE except aeronautical mobile 5.226 5.229	FIXED MOBILE except aeronautical mobile 5.226	Fixed/ Land mobile communications
174 - 223 MHz	BROADCASTING 5.235 5.237 5.243	BROADCASTING	Geneva Agreement 2006 (GE06). Digital Sound Broadcasting T-DAB (174-230 MHz)
223 - 230 MHz	BROADCASTING Fixed Mobile 5.243 5.246 5.247	BROADCASTING Fixed Mobile	Geneva Agreement 2006 (GE06). Digital Sound Broadcasting T-DAB (174-230 MHz)
230 - 235MHz	FIXED MOBILE 5.247 5.251 5.252	FIXED MOBILE	Fixed/ Land mobile communications
235 - 267 MHz	FIXED MOBILE 5.111 5.252 5.254 5.256 5.256A	235-238 MHz FIXED	Fixed/ Land mobile communications
		MOBILE	
		238-246 MHz MOBILE 5.111 5.254 5.256	238-242.95 MHz PMR and/or PAMR
			242.95-243.05 MHz International Distress Frequency (243 MHz)
			243.05-246.00 MHz

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
			Low-power devices ancillary to the broadcasting service.
		246-254 MHz FIXED MOBILE	Fixed/ Land mobile communications
		254-267 MHz MOBILE 5.254	PMR and/or PAMR
267 - 272 MHz	FIXED MOBILE Space operation (space-to-Earth) 5.254 5.257	FIXED MOBILE Space operation (space-to-Earth) 5.254 5.257	Fixed/ Land mobile communications
272 - 273 MHz	SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	Fixed/ Land mobile communications
273 - 312 MHz	FIXED MOBILE 5.254	FIXED MOBILE 5.254	Point to point Studio to Transmitter Links (STL) within the band 290-312 MHz
312 - 315 MHz	FIXED MOBILE Mobile-satellite (Earth-to-space) 5.254 5.255	FIXED MOBILE Mobile-satellite (Earth-to-space) 5.254 5.255	Fixed/ Land mobile communications
315 - 322 MHz	FIXED MOBILE 5.254	FIXED MOBILE 5.254	Fixed/ Land mobile communications
322 - 328.6 MHz	FIXED MOBILE	FIXED MOBILE	Fixed/ Land mobile communications Radio astronomy services

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	RADIO ASTRONOMY 5.149	RADIO ASTRONOMY 5.149	
328.6 - 335.4 MHz	AERONAUTICAL RADIONAVIGATION 5.258 5.259	AERONAUTICAL RADIONAVIGATION 5.258	Band 328.6-335.4 MHz is limited to Instrument Landing Systems (glide path).
335.4 - 387 MHz	FIXED MOBILE 5.254	FIXED MOBILE 5.254	335.4-336 MHz PMR and/or PAMR
			336-346 MHz Fixed Wireless Access
			346.0-356.0 MHz PMR and/or PAMR
			356.0-366.0 MHz Fixed Wireless Access
			366.0-380.0 MHz PMR and/or PAMR
			380.0-385.0 MHz Public Protection and Disaster Relief (PPDR)
387 - 390 MHz	FIXED MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255	FIXED MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255	387.0-390.0 MHz PMR and/or PAMR
390 - 399.9 MHz	FIXED MOBILE 5.254	FIXED MOBILE 5.254	390.0-395.0 MHz Public Protection and Disaster Relief (PPDR)
			395.0-399.9 MHz PMR and/or PAMR
399.9 - 400.05 MHz	MOBILE-SATELLITE (Earth-to-space) 5.209 5.220 5.260A 5.260B	MOBILE-SATELLITE (Earth-to-space) 5.209 5.220 5.260A 5.260B	Mobile satellite services - Uplink
400.05 - 400.15 MHz	STANDARD FREQUENCY AND TIME SIGNALSATELLITE (400.1 MHz) 5.261 5.262	STANDARD FREQUENCY AND TIME SIGNALSATELLITE (400.1 MHz) 5.261	Standard Frequency and Time Signal Satellite Services (400.1 MHz)
400.15 - 401 MHz	METEOROLOGICAL AIDS	METEOROLOGICAL AIDS	

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) 5.263 Space operation (space-to-Earth) 5.262 5.264	METEOROLOGICAL-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	
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 5.264A 5.264B	METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile 5.264A 5.264B	Meteorological Aids (Weather satellite)
402 - 403 MHz	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space)	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed	Meteorological Aids (Weather satellite) SDRs-ultra low power active medical implants SDRs- see ITU-R Rec SM 2153 and Rec RS 1346

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	Fixed Mobile except aeronautical mobile 5.264A 5.264B	Mobile except aeronautical mobile 5.264A 5.264B	
403 - 406 MHz	METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile 5.265	METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile	Meteorological Aids Fixed/ Land mobile communications
406 - 406.1 MHz	MOBILE-SATELLITE (Earth-to-space) 5.265 5.266 5.267	MOBILE-SATELLITE (Earth-to- space)5.265 5.266 5.267	Mobile Satellite Services Low power satellite EPIRBs (Distress and Safety purposes) ITU RR Article 32 and 34 and appendix 15 applies
406.1 - 410 MHz	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.265	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY	Fixed/ Land mobile communications Radio astronomy services PMR and/or PAMR PPDR The use of this band for PPDR to be studied

410 - 420 MHz	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) 5.268	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to- space) 5.268	Fixed/ Land mobile communications PMR and/or PAMR PPDR The use of this band for PPDR to be studied
420 - 430 MHz	FIXED	FIXED	Fixed/ Land mobile communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271	MOBILE except aeronautical mobile Radiolocation	Radiolocation Services PMR and/or PAMR PPDR The use of this band for PPDR to be studied
430 - 432 MHz	AMATEUR RADIOLOCATION 5.271 5.274 5.275 5.276 5.277	FIXED MOBILE except aeronautical mobile AMATEUR RADIOLOCATION	Fixed/ Land mobile communications Amateur Communications Radiolocation Services
432 - 438 MHz	AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138 5.271 5.276 5.277 5.280 5.281 5.282	FIXED MOBILE except aeronautical mobile AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.138	Fixed/ Land mobile communications Amateur (432-438MHz) Amateur. Satellite (435-438MHz) Condition for amateur satellite services is given in 5.282 Radiolocation Services
438 - 440 MHz	AMATEUR RADIOLOCATION 5.271 5.274 5.275 5.276 5.277 5.283	FIXED MOBILE except aeronautical mobile AMATEUR RADIOLOCATION	Fixed/ Land mobile communications Amateur Communications Radiolocation Services
440 - 450 MHz	FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271 5.286	FIXED MOBILE except aeronautical mobile Radiolocation 5.286	Fixed/ Land mobile communications Amateur Communications Radiolocation Services PMR and/or PAMR PPDR PMR446 (446-446.1 MHz) FIXED (telemetry, dual frequency alarm systems)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
			The use of this band for PPDR to be studied. PMR446-ERC/DEC/(98)25
450 - 455 MHz	FIXED MOBILE 5.286AA 5.209 5.271 5.286 5.286A 5.286B 5.286C 5.286D 5.286E	FIXED MOBILE 5.286AA 5.209 5.286 5.286A	International Mobile Telecommunications systems (IMT) IMT (450-470 MHz)
455 - 456 MHz	FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E	FIXED MOBILE 5.286AA 5.209 5.286A	International Mobile Telecommunication systems (IMT) IMT (450-470 MHz)
456 - 459 MHz	FIXED MOBILE 5.286AA 5.271 5.287 5.288	FIXED MOBILE 5.286AA 5.287	International Mobile Telecommunication systems (IMT) IMT (450-470 MHz)
459 - 460 MHz	FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E	FIXED MOBILE 5.286AA 5.209 5.286A	International Mobile Telecommunication systems (IMT) IMT (450-470 MHz)
460 - 470 MHz	FIXED MOBILE 5.286AA	FIXED MOBILE 5.286AA Meteorological-satellite (space- to-Earth) 5.287 5.289	International Mobile Telecommunication systems (IMT) IMT (450-470 MHz)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	Meteorological-satellite (space-to-Earth) 5.287 5.288 5.289 5.290		
470 - 694 MHz	BROADCASTING 5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.311A 5.312	BROADCASTING 5.149 5.296 5.304 5.311A	Digital Terrestrial Television (DTT) broadcasting (in accordance to GE 06 agreement)
694 - 790 MHz	MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING 5.300 5.312	MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING 5.300 5.312	Digital dividend band II for International mobile telecommunication systems (IMT) IMT (703-733/758-788 MHz)
790 - 862 MHz	FIXED MOBILE except aeronautical mobile 5.316B 5.317A BROADCASTING 5.312 5.319	FIXED MOBILE except aeronautical mobile 5.316B 5.317A BROADCASTING 5.312 5.319	Digital dividend band I for International mobile telecommunication systems (IMT) IMT (832-862 MHz / 791-821)
862 - 890 MHz	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.319 5.323	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.319 5.323	Mobile cellular networks GSM-R (876-880/921-925 MHz) GSM (880-915 MHz/925-960 MHz) IMT (880-915 MHz/925-960 MHz)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
890 - 942 MHz	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 Radiolocation 5.323	FIXED MOBILE except aeronautical mobile 5.317A Radiolocation	Mobile cellular networks GSM-R (876-880/921-925 MHz) GSM (880-915 MHz/925-960 MHz) IMT (880-915 MHz/925-960 MHz)
942 - 960 MHz	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.323	FIXED MOBILE except aeronautical mobile 5.317A	Mobile cellular networks GSM-R (876-880/921-925 MHz) GSM (880-915 MHz/925-960 MHz) IMT (880-915 MHz/925-960 MHz)
960 - 1164 MHz	AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL RADIONAVIGATION 5.328 5.328AA	AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL RADIONAVIGATION 5.328	Distance measuring equipment Secondary surveillance radar 1087.7-1092.3 MHz Automatic Dependent Surveillance-Broadcast (ADS-B) Res. 425 (WRC-19) applies (global flight tracking for civil aviation)
1164 - 1215 MHz	AERONAUTICAL RADIONAVIGATION 5.328	AERONAUTICAL RADIONAVIGATION 5.328	GPS systems-Galileo (1164-1214 MHz) GLONASS (1190.3- 1213.8 MHz)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.328A	RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.328A	
1215 - 1240 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332	GLONASS (1237.8- 1253.8 MHz) GPS (1215.6-1239.6 MHz)
1240 - 1300 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	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) Amateur 5.282 5.332 5.335A	GLONASS (1237.8- 1253.8 MHz) Galileo (1260-1300 MHz)
1300 - 1350 MHz	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 RADIONAVIGATION-	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 RADIONAVIGATION-SATELLITE (Earth-to-space) 5.149 5.337A	ATC Radar

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	SATELLITE (Earth-to-space) 5.149 5.337A		
1350 - 1400 MHz	FIXED MOBILE RADIOLOCATION 5.149 5.338 5.338A 5.339	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).
1400 - 1427 MHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	Earth exploration satellite service (passive) Radio astronomy Space research (passive)
1427 - 1429 MHz	SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.341A 5.341B 5.341C 5.338A 5.341	SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.338A 5.341	International Mobile Telecommunications (IMT) 1427-1518 MHz
1429 - 1452 MHz	FIXED MOBILE except aeronautical mobile 5.341A 5.338A 5.341 5.342	FIXED MOBILE except aeronautical mobile 5.338A 5.341 5.342	International Mobile Telecommunications (IMT) 1427-1518 MHz

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
1452 - 1492 MHz	FIXED MOBILE except aeronautical mobile 5.346 BROADCASTING BROADCASTING- SATELLITE 5.208B 5.341 5.342 5.345	FIXED MOBILE except aeronautical mobile 5.346	International Mobile Telecommunications (IMT) 1427-1518 MHz
1492 - 1518 MHz	FIXED MOBILE except aeronautical mobile 5.341A 5.341 5.342	FIXED MOBILE except aeronautical mobile 5.341A 5.341 5.342	International Mobile Telecommunications (IMT) 1427-1518 MHz
1518 - 1525 MHz	FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A 5.341 5.342	FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to- Earth) 5.348 5.348A 5.348B 5.351A 5.341	The band 1518-1559 MHz is allocated for satellite component of IMT; Res.225 applies.
1525 - 1530 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	SPACE OPERATION (space-to- Earth) FIXED MOBILE-SATELLITE (space-to- Earth) 5.208B 5.351A Earth exploration-satellite Mobile except aeronautical mobile 5.341 5.351 5.352A 5.354	The band 1518-1559 MHz is allocated for satellite component of IMT; Res.225 applies.

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.341 5.342 5.350 5.351 5.352A 5.354		
1530 - 1535 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 5.341 5.342 5.351 5.354	SPACE OPERATION (space-to- Earth) MOBILE-SATELLITE (space-to- Earth) 5.208B 5.351A 5.353A Earth exploration-satellite Fixed Mobile except aeronautical mobile 5.341 5.351 5.354	The band 1518-1559 MHz is allocated for satellite component of IMT; Res.225 applies. In the band 1530-1544 MHz priority for maritime mobile distress, urgency and safety communications (GMDSS); Res.222 applies.
1535 - 1559 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	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	The band 1518-1559 MHz is allocated for satellite component of IMT; Res.225 applies. In the band 1530-1544 MHz priority for maritime mobile distress, urgency and safety communications (GMDSS); Res.222 applies.
1559 - 1610 MHz	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION- SATELLITE (space-to- Earth) (space-to-space) 5.208B 5.328B 5.329A 5.341	AERONAUTICAL- RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.208B 5.328B 5.329A 5.341	Galileo (1559.42-1591.42 MHz) GLONASS (1592.9-1610.5 MHz) GPS (1563.42-1587.42 MHz)
1610 - 1610.6 MHz	MOBILE-SATELLITE (Earth-to-space) 5.351A	MOBILE-SATELLITE (Earth-to-space) 5.351A	GLONASS (1592.9-1610.5 MHz) The band 1610-1645.5 MHz is allocated

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	AERONAUTICAL RADIONAVIGATION 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.371 5.372	AERONAUTICAL RADIONAVIGATION 5.341 5.364 5.366 5.367 5.368 5.369 5.371 5.372	for satellite component of IMT; Res.225 applies. This band is designated world- wide for the MSS. Paired with 2483.5- 2484.1 MHz for some systems.
1610.6 - 1613.8 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	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.355 5.364 5.366 5.367 5.368 5.371 5.372	The band 1610-1645.5 MHz is allocated for satellite component of IMT; Res.225 applies. This band is designated world- wide for the MSS. Paired with 2484.1- 2487.3 MHz for some systems.
1613.8 - 1621.35 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	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) 5.208B 5.341 5.355 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	The band 1610-1645.5 MHz is allocated for satellite component of IMT; Res.225 applies. Paired with 1593-1594 MHz for aeronautical public correspondence

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
1621.35 - 1626.5 MHz	MARITIME MOBILE-SATELLITE (space-to-Earth) 5.373 5.373A MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) except maritime 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	MARITIME MOBILE-SATELLITE (space-to-Earth) 5.373 5.373A MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) except maritime 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	The bands 1610-1645.5 MHz and 1646.5-1660.5 MHz are allocated for satellite component of IMT; Res.225 applies. In the band 1626.5-1645.5 MHz priority is given to maritime mobile distress, urgency and safety communications (GMDSS); Res.222 applies
1626.5 - 1660.5 MHz	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.362A 5.376A	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.362A 5.376A	The band 1610-1645.5 MHz and 1646.5-1660.5 MHz are allocated for satellite component of IMT; Res.225 applies.
1660.5 - 1668 MHz	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379A	Radio Astronomy services Fixed/ Land mobile communication
1668 - 1668.4 MHz	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY	The band 1668-1675 MHz is allocated for satellite component of IMT; Res.225 applies.

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A	SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379A	
1668.4 - 1670 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	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	The band 1668-1675 MHz is allocated for satellite component of IMT; Res.225 applies.
1670 - 1675 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	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	The band 1668-1675 MHz is allocated for satellite component of IMT; Res.225 applies.
1675 - 1690 MHz	METEOROLOGICAL AIDS FIXED	METEOROLOGICAL AIDS FIXED	Meteorological aids Fixed users Meteorological satellite downlink

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341	METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341	Land mobile users (Weather Satellite)
1690 - 1700 MHz	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 5.289 5.341 5.382	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 5.289 5.341 5.382	Meteorological aids Meteorological satellite downlink
1700 - 1710 MHz	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) Mobile except aeronautical mobile 5.289 5.341	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) Mobile except aeronautical mobile 5.289 5.341	Fixed users Land mobile users Meteorological satellite users
1710 - 1930 MHz	FIXED MOBILE 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.386 5.387 5.388	FIXED MOBILE 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.388	Cellular mobile networks within 1710-1785/1805-1880 MHz and 1920-1980 GSM/IMT
1930 - 1970 MHz	FIXED MOBILE 5.388A 5.388B 5.388	FIXED MOBILE 5.388A 5.388B 5.388	Cellular mobile networks within 1920-1980 MHz IMT (Terrestrial) Paired with 2110-2170 MHz

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
1970 - 1980 MHz	FIXED MOBILE 5.388A 5.388B 5.388	FIXED MOBILE 5.388A 5.388B 5.388	Cellular mobile networks within 1920-1980 MHz IMT (Terrestrial)
1980 - 2010 MHz	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B 5.389F	FIXED MOBILE MOBILE-SATELLITE (Earth-to- space) 5.351A 5.388 5.389A 5.389B 5.389F	IMT (satellite) (1980-2010 MHz) Paired with 2170 - 2200 MHz. The development of satellites for IMT services to be monitored.
2010 - 2025 MHz	FIXED MOBILE 5.388A 5.388B 5.388	FIXED MOBILE 5.388A 5.388B 5.388	Fixed/Land mobile communications
2025 - 2110 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 (Earth-to- space) (space-to-space) EARTH EXPLORATION- SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to- space) (space-to-space) 5.392	Fixed/Land mobile communications Fixed links (2025-2110 MHz paired with 2200-2285 MHz) Radio Frequency channel arrangement according to ITU-R F.1098.
2110 - 2120 MHz	FIXED MOBILE 5.388A 5.388B SPACE RESEARCH (deep space) (Earth-to-space) 5.388	FIXED MOBILE 5.388A 5.388B SPACE RESEARCH (deep space) (Earth-to-space) 5.388	Cellular mobile networks IMT (terrestrial) (2110-2170 MHz) paired with 1920- 1980 MHz

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
2120 - 2160 MHz	FIXED MOBILE 5.388A 5.388B 5.388	FIXED MOBILE 5.388A 5.388B 5.388	Cellular mobile networks IMT (terrestrial) (2110-2170 MHz) paired with 1920-1980 MHz
2160 - 2170 MHz	FIXED MOBILE 5.388A 5.388B 5.388	FIXED MOBILE 5.388A 5.388B 5.388	Cellular mobile networks IMT (terrestrial) (2110-2170 MHz) paired with 1920-1980 MHz
2170 - 2200 MHz	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A 5.389F	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A	Fixed/Land mobile communications Mobile Satellite Services IMT (satellite) (2170-2200 MHz) Paired with 1980-2010 MHz. The development of satellites for IMT services to be monitored.
2200 - 2290 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	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	TV point to point Studio to Transmitter Links (STL) within the band 2207.5-2277.5 MHz
2290 - 2300 MHz	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	Fixed/Land mobile communications

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	SPACE RESEARCH (deep space) (space-to-Earth)	SPACE RESEARCH (deep space) (space-to-Earth)	
2300 - 2450 MHz	FIXED MOBILE 5.384A Amateur Radiolocation 5.150 5.282 5.395	FIXED MOBILE 5.384A Amateur Radiolocation 5.150	IMT within the band 2300-2400 MHz. Also allocated to ISM within 2400-2500 MHz
2450 - 2483.5 MHz	FIXED MOBILE Radiolocation 5.150 5.397	FIXED MOBILE Radiolocation 5.150	Allocated to ISM within 2400-2500 MHz (5.150) SRD applications (2 400-2 483.5 MHz)
2483.5 - 2500 MHz	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIODETERMINATION SATELLITE (space-to-Earth) 5.398 Radiolocation 5.398A 5.150 5.399 5.401 5.402	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIODETERMINATION SATELLITE (space-to-Earth) 5.398 Radiolocation 5.150 5.402	Allocated to within ISM 2400-2500 MHz(5.150) 2400-2500 MHz SRD applications (2 400-2 483.5 MHz)
2500 - 2520 MHz	FIXED 5.410 MOBILE except aeronautical mobile 5.384A 5.412	FIXED 5.410 MOBILE except aeronautical mobile 5.384A 5.412	International Mobile Telecommunication (IMT)
2520 - 2655 MHz	FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE	FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416	International Mobile Telecommunication (IMT)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.413 5.416 5.339 5.405 5.412 5.418B 5.418C	5.339 5.405 5.412 5.418B 5.418C	
2655 - 2670 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	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	International Mobile Telecommunication (IMT)
2670 - 2690 MHz	FIXED 5.410 MOBILE except aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	FIXED 5.410 MOBILE except aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149	International Mobile Telecommunication (IMT)
2690 - 2700 MHz	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.422	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Radio Astronomy

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
2700 - 2900 MHz	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423	Civilian, military and meteorological radars systems (weather radar)
2900 - 3100 MHz	RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427	RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427	Radiolocation services
3100 - 3300 MHz	RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.149 5.428	RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.149	Radiolocation services
3300 - 3400 MHz	RADIOLOCATION 5.149 5.429 5.429A 5.429B 5.430	RADIOLOCATION FIXED 5.149	International Mobile Telecommunication (IMT)
3400 - 3600 MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 5.430A Radiolocation 5.431	FIXED FIXED-SATELLITE (space-to- Earth) MOBILE 5.430A Radiolocation 5.431	International Mobile Telecommunication (IMT)
3600 - 4200 MHz	FIXED FIXED-SATELLITE (space-to-Earth) Mobile	FIXED FIXED-SATELLITE (space-to- Earth) Mobile	Fixed-satellite (space-to-earth) C Band VSAT (Downlink)
4200 - 4400 MHz	AERONAUTICAL MOBILE (R) 5.440 AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION 5.438 5.440	Radio altimeters – aircraft radio station Wireless Intra-Avionic Communication (WIAC) (5.436)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.438 5.437 5.439 5.440		
4400 - 4500 MHz	FIXED MOBILE 5.440A	FIXED MOBILE	Point to point fixed links for network mobile operators
4500 - 4800 MHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE 5.440A	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE	Point to point fixed links for network mobile operators
4800 - 4990 MHz	FIXED MOBILE 5.440A 5.441A 5.441B 5.442 Radio astronomy 5.149 5.339 5.443	FIXED MOBILE 5.442 Radio astronomy 5.149 5.339	Point to point fixed links for network mobile operators Band allocated for IMT
4990 - 5000 MHz	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) 5.149	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) 5.149	Point to point fixed links for network mobile operators
5000 - 5010 MHz	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-space)	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-space)	Aeronautical radionavigation Radio-navigation satellite uplink Aeronautical Mobile-Satellite (R)
5010 - 5030 MHz	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL 5.328B 5.443B RADIONAVIGATION	Aeronautical radionavigation Radio-navigation satellite uplink & downlink Aeronautical Mobile-Satellite (R)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION- SATELLITE (space-to- Earth) (space-to-space) 5.328B 5.443B	RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space)	
5030 - 5091 MHz	AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION 5.444	AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE- SATELLITE (R) 5.443D AERONAUTICAL- RADIONAVIGATION 5.444	Aeronautical radionavigation Aeronautical Mobile (R) Aeronautical Mobile-Satellite (R) Microwave landing system
5091 - 5150 MHz	FIXED-SATELLITE (Earth-to-space) 5.444A AERONAUTICAL MOBILE 5.444B AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION 5.444	FIXED-SATELLITE (Earth-to- space) 5.444A AERONAUTICAL MOBILE 5.444B AERONAUTICAL MOBILE- SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION 5.444	Fixed Satellite (Earth-to-Space) Aeronautical radionavigation Aeronautical mobile Aeronautical Mobile-Satellite (R)
5150 - 5250 MHz	FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B	FIXED-SATELLITE (Earth-to- space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B AERONAUTICAL RADIONAVIGATION	Land mobile 5 150-5 250 MHz Wireless Access Systems (WAS)/RLAN

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	AERONAUTICAL RADIONAVIGATION 5.446 5.446C 5.447 5.447B 5.447C	5.446C 5.447B 5.447C	
5250 - 5255 MHz	EARTH EXPLORATION- SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH 5.447D 5.447E 5.448 5.448A	EARTH EXPLORATION- SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH 5.447D 5.447E 5.448 5.448A	Land mobile 5 250-5 255 MHz Wireless Access Systems (WAS)/RLAN
5255 - 5350 MHz	EARTH EXPLORATION- SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH (active) 5.447E 5.448 5.448A	EARTH EXPLORATION- SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH (active) 5.447E 5.448 5.448A	Land mobile 5 255-5 350 MHz Wireless Access Systems (WAS)/RLAN
5350 - 5460 MHz	EARTH EXPLORATION- SATELLITE (active) 5.448B RADIOLOCATION 5.448D AERONAUTICAL RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448C	EARTH EXPLORATION- SATELLITE (active) 5.448B RADIOLOCATION 5.448D AERONAUTICAL RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448C	Aeronautical radionavigation - Ground based and airborne weather radar

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
5460 - 5470 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION 5.448D RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448B	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION 5.448D RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448B	Radionavigation - airborne weather radar Earth exploration satellite service Space research Radiolocation
5470 - 5570 MHz	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION SPACE RESEARCH (active) 5.448B 5.450 5.451	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION SPACE RESEARCH (active) 5.448B 5.450 5.451	Land mobile 5 470-5 570 MHz Wireless Access Systems (WAS)/RLAN
5570 - 5650 MHz	MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION 5.450 5.451 5.452	MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION 5.450 5.451 5.452	Wireless Access Systems (WAS)/RLAN Ground-based meteorological radars (5600-5650 MHz)
5650 - 5725 MHz	MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION Amateur	MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION Amateur Space research (deep space)	Land mobile 5 650-5 725 MHz Wireless Access Systems (WAS)/RLAN

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	Space research (deep space) 5.282 5.451 5.453 5.454 5.455	5.282 5.451 5.453 5.454 5.455	
5725 - 5830 MHz	FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455	FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455	5 725-5 875 MHz WLAN and allocated to ISM within the band 5725-5875 MHz RTTT (Road Transport and Traffic Telematics)(5795-5815 MHz) SRD applications (5725-5875MHz) SRD- Transport and Information control systems (5805-5815MHz)
5830 - 5850 MHz	FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.451 5.453 5.455 5.456	FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur FIXED 5.453 5.150	5 725-5 875 MHz WLAN and allocated to ISM within the band 5725-5875 MHz
5850 - 5925 MHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.150	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.150	5 725-5 875 MHz WLAN and ISM Band
			5 850-5 925 MHz C Band VSAT (Uplink)
5925 - 6700 MHz	FIXED 5.457 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B MOBILE 5.457C	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A MOBILE 5.149 5.440 5.458	5925-6425 MHz C Band VSAT (Uplink)
			5925-6425 MHz FWS point to point microwave links (6 GHz Lower Band

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.149 5.440 5.458		according to ITU-R Rec F. 383-8)
6700 - 7075 MHz	FIXED FIXED-SATELLITE (Earth-to-space) (space- to-Earth) 5.441 MOBILE 5.458 5.458A 5.458B	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 microwave links (6 GHz Upper Band according to ITU-R Rec F. 384-10)
7075 - 7145 MHz	FIXED MOBILE 5.458 5.459	FIXED MOBILE 5.458	FWS point to point microwave links (6 GHz Upper Band according to ITU-R Rec F. 384.10)
7145 - 7190 MHz	FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) 5.458 5.459	FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) 5.458 5.459	FWS point to point microwave links (7 GHz according to ITU-R Rec F. 385- 6).
7190 - 7235 MHz	EARTH EXPLORATION- SATELLITE (Earth-to- space) 5.460A 5.460B FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458 5.459	EARTH EXPLORATION- SATELLITE (Earth-to-space) 5.460A 5.460B FIXED MOBILE SPACE RESEARCH (Earth-to- space) 5.460 5.458 5.459	FWS point to point microwave links (7 GHz according to ITU-R Rec F. 385- 6).
7235 - 7250 MHz	EARTH EXPLORATION- SATELLITE (Earth-to- space) 5.460A FIXED MOBILE 5.458	EARTH EXPLORATION- SATELLITE (Earth-to-space) 5.460A FIXED MOBILE 5.458	FWS point to point microwave links (7 GHz according to ITU-R Rec F. 385- 6).
7250 - 7300 MHz	FIXED	FIXED	FWS point to point microwave links (7

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	FIXED-SATELLITE (space-to-Earth) MOBILE 5.461	FIXED-SATELLITE (space-to-Earth) MOBILE 5.461	GHz according to ITU-R Rec F. 385-6).
7300 - 7375 MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461	FWS point to point microwave links (7 GHz according to ITU-R Rec F. 385-6).
7375 - 7450 MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	FWS point to point microwave links (7 GHz according to ITU-R Rec F. 385-6).
7450 - 7550 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	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	FWS point to point microwave links (7 GHz according to ITU-R Rec F. 385-6).
7550 - 7750 MHz	FIXED	FIXED	FWS point to point microwave links (7

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	GHz according to ITU-R Rec F. 385-6).
7750 - 7900 MHz	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B MOBILE except aeronautical mobile	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B MOBILE except aeronautical mobile	FWS point to point microwave links (8 GHz according to ITU-R Rec F. 386-8).
7900 - 8025 MHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.461	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.461	FWS point to point microwave links (8 GHz according to ITU-R Rec F. 386-8).
8025 - 8175 MHz	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	FWS point to point microwave links (8 GHz according to ITU-R Rec F. 386-8).
8175 - 8215 MHz	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED	FWS point to point microwave links (8 GHz according to ITU-R Rec F. 386-8).

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	
8215 - 8400 MHz	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	FWS point to point microwave links (8 GHz according to ITU-R Rec F. 386-8).
8400 - 8500 MHz	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.465 5.466	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.465	FWS point to point microwave links (8 GHz according to ITU-R Rec F. 386-8).
8500 - 8550 MHz	RADIOLOCATION 5.468 5.469	RADIOLOCATION 5.468 5.469	Radars for Civil and military aeronautical radionavigation e.g. precision airfield approach radars.
8550 - 8650 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469 5.469A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469 5.469A	Radars for Civil and military aeronautical radionavigation e.g. precision airfield approach radars.
8650 - 8750 MHz	RADIOLOCATION	RADIOLOCATION	Radars for Civil and military

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.468 5.469	5.468 5.469	aeronautical radionavigation e.g. precision airfield approach radars.
8750 - 8850 MHz	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 5.471	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 5.471	Radars for Civil and military aeronautical radionavigation e.g. precision airfield approach radars.
8850 - 9000 MHz	RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473	RADIOLOCATION MARITIME RADIONAVIGATION 5.472	Radars for Civil and military aeronautical radionavigation e.g. precision airfield approach radars.
9000 - 9200 MHz	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 5.471 5.473A	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 5.471	Radars for Civil and military aeronautical radionavigation e.g. precision airfield approach radars.
9200 - 9300 MHz	EARTH EXPLORATION- SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474 5.474D	EARTH EXPLORATION- SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474	Radars for Civil and military aeronautical radionavigation e.g. precision airfield approach radars.
9300 - 9500 MHz	EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION RADIONAVIGATION 5.475 SPACE RESEARCH (active)	EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION RADIONAVIGATION 5.475 SPACE RESEARCH (active) 5.427 5.474 5.475A 5.475B 5.476A	Radiolocation - weather radar Radars for Civil and military aeronautical radionavigation e.g. precision airfield approach radars.

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.427 5.474 5.475A 5.475B 5.476A		
9500 - 9800 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	Radars for Civil and military aeronautical radionavigation e.g. precision airfield approach radars.
9800 - 9900 MHz	RADIOLOCATION Earth exploration-satellite (active) Fixed Space research (active) 5.477 5.478 5.478A 5.478B	RADIOLOCATION Earth exploration-satellite (active) Fixed Space research (active) 5.478A 5.478B	Radiolocation
9900 - 10000 MHz	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Fixed 5.474D 5.477 5.478 5.479	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Fixed 5.474D 5.479	Radars for Civil and military aeronautical radionavigation e.g. precision airfield approach radars.
10 - 10.4 GHz	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.474D 5.479	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.474D 5.479	Fixed point to multipoint microwave links (ITU-R F.1568)
10.4 - 10.45 GHz	FIXED	FIXED	Radiolocation

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	MOBILE RADIOLOCATION Amateur	MOBILE RADIOLOCATION Amateur	Fixed/Land mobile communication
10.45 - 10.5 GHz	RADIOLOCATION Amateur Amateur-satellite 5.481	RADIOLOCATION Amateur Amateur-satellite	Radiolocation services Amateur Services
10.5 - 10.55 GHz	FIXED MOBILE Radiolocation	FIXED MOBILE Radiolocation	Fixed point to multipoint microwave links (ITU-R F.1568)
10.55 - 10.6 GHz	FIXED MOBILE except aeronautical mobile Radiolocation	FIXED MOBILE except aeronautical mobile Radiolocation	Fixed point to multipoint microwave links (ITU-R F.1568)
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	EARTH EXPLORATION- SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482A	Fixed point to multipoint microwave links (ITU-R F.1568) Paired with 10.15-10.30 GHz Channeling plan for 10.5 GHz band in accordance with ITU- R Rec. F.1568 Annex 1. For sharing between EESS (passive) and the fixed and mobile service Res.751 applies.
10.68 - 10.7 GHz	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.483	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite Radio astronomy ^[1] Space research

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
10.7 - 10.95 GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FWS point to point microwave links (11GHz Band according to ITU-R Rec F. 387-10)
10.95 - 11.2 GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.484 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) 5.484 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FWS point to point radio relay links (11GHz Band according to ITU-R Rec F. 387-10)
11.2 - 11.45 GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FWS point to point radio relay links (11GHz Band according to ITU-R Rec F. 387-10)
11.45 - 11.7 GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FWS point to point radio relay links (11GHz Band according to ITU-R Rec F. 387-10)
11.7 - 12.5 GHz	FIXED	FIXED	Broadcasting Satellite Services

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492 5.487 5.487A	MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492 5.487 5.487A	
12.5 - 12.75 GHz	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.494 5.495 5.496	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space)	Ku Band VSAT downlink
12.75 - 13.25 GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.441 MOBILE Space research (deep space) (space-to-Earth)	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)
13.25 - 13.4 GHz	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A	Airborne Navigation Aids
13.4 - 13.65 GHz	EARTH EXPLORATION-SATELLITE (active) FIXED-SATELLITE (space-to-Earth) 5.499A 5.499B	EARTH EXPLORATION-SATELLITE (active) FIXED-SATELLITE (space-to-Earth) 5.499A 5.499B	Earth exploration satellite Fixed satellite (Space-to-Earth) Radiolocation Space research

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	RADIOLOCATION SPACE RESEARCH 5.499C 5.499D Standard frequency and time signal-satellite (Earth-to-space) 5.499E 5.500 5.501 5.501B	RADIOLOCATION SPACE RESEARCH 5.499C 5.499D Standard frequency and time signal-satellite (Earth-to-space) 5.499E 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) 5.500 5.501 5.501B	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
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 5.500 5.501 5.502 5.503	FIXED-SATELLITE (Earth-to- space) 5.484A RADIOLOCATION Earth exploration-satellite Standard frequency and time signal-satellite (Earth-to-space) Space research 5.502 5.503	Fixed satellite uplink Radiolocation
14 - 14.25 GHz	FIXED-SATELLITE (Earth- to-space) 5.457A 5.457B 5.484A 5.506 5.506B	FIXED-SATELLITE (Earth-to- space) 5.457A 5.457B 5.484A 5.506 5.506B RADIONAVIGATION 5.504	Ku Band VSAT (uplink) Earth Station on-board vessels (ESV) also allowed under FSS; Res. 902 applies. The band 14.0-14.5 GHz may also be

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.504C 5.506A Space research 5.504A 5.505	Mobile-satellite (Earth-to-space) 5.504B 5.506A Space research 5.504A	used for AES (aircraft-to-space station).
14.25 - 14.3 GHz	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.508A Space research 5.504A 5.505 5.508	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.508A Space research 5.504A	Ku Band VSAT (uplink) Earth Station on-board vessels (ESV) also allowed under FSS; Res. 902 applies. The band 14.0-14.5 GHz may also be used for AES (aircraft-to-space station).
14.3 - 14.4 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 Radionavigation-satellite	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 Radionavigation-satellite 5.504A	Ku Band VSAT (uplink) Earth Station on-board vessels (ESV) also allowed under FSS; Res. 902 applies. The band 14.0-14.5 GHz may also be used for AES (aircraft-to-space station).

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.504A		
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	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 Space research (space-to-Earth) 5.504A	Ku Band VSAT (uplink) Earth Station on-board vessels (ESV) also allowed under FSS; Res. 902 applies. The band 14.0-14.5 GHz may also be used for AES (aircraft-to-space station).
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	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 Radio astronomy 5.149 5.504A	Ku Band VSAT (uplink) Earth Station on-board vessels (ESV) also allowed under FSS; Res. 902 applies. The band 14.0-14.5 GHz may also be used for AES (aircraft-to-space station).
14.5 - 14.75 GHz	FIXED FIXED-SATELLITE (Earth-to-space)	FIXED FIXED-SATELLITE (Earth-to-space)	FWS point to point radio relay links (15 GHz Band according to ITU-R Rec F. 636-3)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.509B 5.509C 5.509D 5.509E 5.509F 5.510 MOBILE Space research 5.509G	5.509B 5.509C 5.509D 5.509E 5.509F 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	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)
14.8 - 15.35 GHz	FIXED MOBILE Space research 5.339	FIXED MOBILE Space research 5.339	FWS point to point radio relay links (15 GHz Band according to ITU-R Rec F. 636-3)
15.35 - 15.4 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.511	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite Radio astronomy ^[1] Space research.
15.4 - 15.43 GHz	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	Aeronautical radionavigation Radiolocation Radio altimeters/radar
15.43 - 15.63 GHz	FIXED-SATELLITE (Earth-to-space) 5.511A RADIOLOCATION 5.511E 5.511F	FIXED-SATELLITE (Earth-to-space) 5.511A RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511C	Fixed satellite uplink Aeronautical radionavigation Radiolocation Radars

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	AERONAUTICAL RADIONAVIGATION 5.511C		
15.63 - 15.7 GHz	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	Aeronautical radionavigation Radiolocation Radars
15.7 - 16.6 GHz	RADIOLOCATION 5.512 5.513	RADIOLOCATION	Radiolocation Radars
16.6 - 17.1 GHz	RADIOLOCATION Space research (deep space) (Earth-to-space) 5.512 5.513	RADIOLOCATION Space research (deep space) (Earth-to-space)	Radiolocation Radars
17.1 - 17.2 GHz	RADIOLOCATION 5.512 5.513	RADIOLOCATION	Radiolocation WAS/RLAN (17.1-17.3 GHz
17.2 - 17.3 GHz	EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.512 5.513 5.513A	EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.513A	Earth exploration satellite Radiolocation Space research WAS/RLAN (17.1-17.3 GHz
17.3 - 17.7 GHz	FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A 5.516B Radiolocation 5.514	FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A 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
			17.3-17.7 GHz Feeder link plans for Broadcasting Satellite Service (Appendix 30A)
17.7 - 18.1 GHz	FIXED	FIXED	

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	FIXED-SATELLITE (space-to-Earth) 5.484A 5.517A (Earth-to-space) 5.516 MOBILE	FIXED-SATELLITE (space-to-Earth) 5.484A 5.517A (Earth-to-space) 5.516 MOBILE	FWS point to point radio links (18 GHz Band according to ITU-R Rec F. 595-9)
18.1 - 18.4 GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A (Earth-to-space) 5.520 MOBILE 5.519 5.521	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A (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)
18.4 - 18.6 GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A MOBILE	FWS point to point radio links (18 GHz Band according to ITU-R Rec F. 595-9)
18.6 - 18.8 GHz	EARTH-EXPLORATION - SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.517A 5.522B MOBILE except	EARTH- EXPLORATIONSATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.517A 5.522B MOBILE except aeronautical mobile	FWS point to point radio links (18 GHz Band according to ITU-R Rec F. 595-9)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	aeronautical mobile Space research (passive) 5.522A 5.522C	Space research (passive) 5.522A	
18.8 - 19.3 GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.516.B 5.517A 5.523A MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) 5.516.B 5.517A 5.523A MOBILE	FWS point to point radio links (18 GHz Band according to ITU-R Rec F. 595-9)
19.3 - 19.7GHz	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.517A 5.523B 5.523C 5.523D 5.523E MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.517A 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)
19.7 - 20.1 GHz	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A Mobile-satellite (space-to-Earth) 5.524	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
20.1 - 20.2 GHz	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A MOBILE-SATELLITE (space-to-Earth)	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

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.524 5.525 5.526 5.527 5.528		
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	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) FIXED MOBILE	Fixed satellite downlink Mobile satellite downlink
21.2 - 21.4 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	FWS point to point radio links (23GHz Band according to ITU-R Rec F. 637)
21.4 - 22 GHz	FIXED MOBILE BROADCASTING-SATELLITE 5.208B 5.530A 5.530B	FIXED MOBILE BROADCASTING-SATELLITE 5.208B 5.530A 5.530B	FWS point to point radio links (23GHz Band according to ITU-R Rec F. 637)
22 - 22.21GHz	FIXED MOBILE except aeronautical mobile 5.149	FIXED MOBILE except aeronautical mobile 5.149	FWS point to point radio links (23GHz Band according to ITU-R Rec F. 637)
22.21 - 22.5 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile	FWS point to point radio links (23GHz Band according to ITU-R Rec F. 637)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.532	RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.532	
22.5 - 22.55 GHz	FIXED MOBILE	FIXED MOBILE	FWS point to point radio links (23GHz Band according to ITU-R Rec F. 637)
22.55 - 23.15 GHz	FIXED INTER-SATELLITE 5.338A MOBILE SPACE RESEARCH (Earth-to-space) 5.532A 5.149	FIXED INTER-SATELLITE 5.338A MOBILE SPACE RESEARCH (Earth-to- space) 5.532A 5.149	FWS point to point radio links (23GHz Band according to ITU-R Rec F. 637)
23.15 - 23.55 GHz	FIXED INTER-SATELLITE 5.338A MOBILE	FIXED INTER-SATELLITE 5.338A MOBILE	FWS point to point radio links (23GHz Band according to ITU-R Rec F. 637)
23.55 - 23.6 GHz	FIXED MOBILE	FIXED MOBILE	FWS point to point radio links (23GHz Band according to ITU-R Rec F. 637)
23.6 - 24 GHz	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite Radio astronomy Space research
24 - 24.05 GHz	AMATEUR AMATEUR-SATELLITE 5.150	AMATEUR AMATEUR-SATELLITE 5.150	Also allocated to ISM within the band 24-24.5 MHz SRD applications (24-24.25GHz)as per ITU-R Rec. SM2153
24.05 - 24.25 GHz	RADIOLOCATION	RADIOLOCATION	Amateur users

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	Amateur Earth exploration-satellite (active) 5.150	Amateur Earth exploration-satellite (active) 5.150	Amateur satellite users Also allocated to ISM within the band 24-24.5 MHz
24.25 - 24.45 GHz	FIXED MOBILE except aeronautical Mobile 5.338A 5.532AB	FIXED MOBILE except aeronautical Mobile 5.338A 5.532AB	24.25-26.5 GHz (25 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F.748-4) 24.25-27.5GHz is designated for International Mobile Telecommunication(IMT) IMT Res 242 (WRC-19) applies
24.45 - 24.65 GHz	FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB	FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB	24.25-26.5 GHz (25 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F.748-4) 24.25-27.5GHz is designated for International Mobile Telecommunication (IMT) IMT Res 242 (WRC-19) applies
24.65 - 24.75 GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.532B INTER-SATELLITE MOBILE except aeronautical	FIXED FIXED-SATELLITE (Earth-to-space) 5.532B INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB	24.25-26.5 GHz (25 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F.748-4) 24.25-27.5GHz is designated for International Mobile Telecommunication(IMT)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	mobile 5.338A 5.532AB		IMT Res 242 (WRC-19) applies
24.75 - 25.25 GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.532B MOBILE except aeronautical mobile 5.338A 5.532AB	FIXED FIXED-SATELLITE (Earth-to-space) 5.532B MOBILE except aeronautical mobile 5.338A 5.532AB	24.25-26.5 GHz (25 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F.748-4) 24.25-27.5GHz is designated for International Mobile Telecommunication (IMT)
25.25 - 25.5 GHz	FIXED 5.534A INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB Standard frequency and time signal-satellite (Earth-to-space)	FIXED 5.534A INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB Standard frequency and time signal-satellite (Earth-to-space)	24.25-26.5 GHz (25 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F.748-4) 24.25-27.5GHz is designated for International Mobile Telecommunication (IMT)
25.5 - 27 GHz	EARTH EXPLORATION- SATELLITE (space-to Earth) 5.536B FIXED 5.534A INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB SPACE RESEARCH (space-to-Earth) 5.536C	EARTH EXPLORATION- SATELLITE (space-to Earth) 5.536B FIXED 5.534A INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB SPACE RESEARCH (space-to- Earth) 5.536C Standard frequency and time	24.25-26.5 GHz (25 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F.748-4) 24.25-27.5GHz is designated for International Mobile Telecommunication (IMT)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	Standard frequency and time signal-satellite (Earth-to-space) 5.536A	signal-satellite (Earth-to-space) 5.536A	
27 - 27.5 GHz	FIXED INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB	FIXED INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB	27-27.5 GHz (26 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F. 748-4) 24.25-27.5GHz is designated for International Mobile Telecommunication (IMT)
27.5 - 28.5 GHz	FIXED 5.537A FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.539 MOBILE 5.538 5.540	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.539 MOBILE 5.538 5.540	Channeling plan for 28 GHz band in accordance with ITU- R Rec. F.748 Annex 2. The band 27.5-27.82 GHz is allocated for HDFSS; Res.143 applies. The band 27.5-30 GHz may be used by the FSS for BSS feeder links.
28.5 - 29.1 GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.523A 5.539 MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.523A 5.539 MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	Channeling plan for 28 GHz band in accordance with ITU- R Rec. F.748 Annex 2. The band 28.45-28.94 GHz is allocated for HDFSS; Res.143 applies. The band 27.5-30 GHz may be used by the FSS for BSS feeder links.
29.1 - 29.5 GHz	FIXED FIXED-SATELLITE	FIXED FIXED-SATELLITE (Earth-to-	29.1-29.46 GHz (28 GHz Band) designated for FWS (e.g. point to

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	(Earth-to-space) 5.516B 5.517A 5.523C 5.523E 5.335A 5.539 5.541A MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	space) 5.516B 5.517A 5.523C 5.523E 5.535A 5.539 5.541A MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	point link or FWA according to ITU-R Rec F. 748-4) 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	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	29.5-29.9 GHz designated for HDFSS uncoordinated Earth station uplinks according to Res.143 (Rev. WRC-07) and 5.516B
29.9 - 30 GHz	FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.527A 5.539 MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (Earth-to-space) 5.541 5.543 5.525 5.526 5.527 5.538 5.540 5.542	FIXED-SATELLITE (Earth-to- space) 5.484A 5.484B 5.516B 5.527A 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
30 - 31GHz	FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to- space) 5.338A MOBILE-SATELLITE (Earth-to- space)	Fixed satellite uplink Mobile satellite uplink

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	Standard frequency and time signal-satellite (space-to-Earth) 5.542	Standard frequency and time signal-satellite (space-to-Earth)	
31 - 31.3 GHz	FIXED 5.338A 5.543B MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research 5.544 5.545 5.149	FIXED 5.338A 5.543B 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. HDFS according to ITU-R Rec F. 746-9) The band is allocated for HAPS Res 168 (WRC-19) applies
31.3 - 31.5 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Earth exploration satellite Radio astronomy Space research
31.5 - 31.8 GHz	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.546	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149	Earth exploration satellite Radio astronomy Space research
31.8 - 32 GHz	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.548	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.548	31.8-32 GHz (32 GHz Band) designated for FWS (e.g. HDFS according to ITU-R Rec F. 1520-2)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
32 - 32.3 GHz	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.548	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.548	32-32.3 GHz (32 GHz Band) designated for FWS (e.g. HDFS according to ITU-R Rec F. 1520-2)
32.3 - 33 GHz	FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.548	FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.548	32.3-33 GHz (32 GHz Band) designated for FWS (e.g. HDFS according to ITU-R Rec F. 1520-2)
33 - 33.4 GHz	FIXED 5.547A RADIONAVIGATION 5.547	FIXED 5.547A RADIONAVIGATION 5.547	33-33.4 GHz (32 GHz Band) designated for FWS (e.g. HDFS according to ITU-R Rec F. 1520-2)
33.4 - 34.2 GHz	RADIOLOCATION 5.549	RADIOLOCATION	Radiolocation services
34.2 - 34.7 GHz	RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) 5.549	RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space)	Radiolocation services Space research feeder link
34.7 - 35.2 GHz	RADIOLOCATION Space research 5.550 5.549	RADIOLOCATION Space research	Radiolocation services
35.2 - 35.5 GHz	METEOROLOGICAL AIDS RADIOLOCATION 5.549	METEOROLOGICAL AIDS RADIOLOCATION	Meteorological aids Radiolocation
35.5 - 36 GHz	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549 5.549A	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549A	Meteorological aids Earth exploration satellite Radiolocation Space research
36 - 37 GHz	EXPLORATION-	EARTH EXPLORATION-	Earth exploration satellite Fixed

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	Mobile Space research
37 - 37.5 GHz	FIXED MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to-Earth) 5.547	FIXED MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to- Earth) 5.547	37-37.5 GHz (38 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F. 749-2) 37-37.5 GHz is designated for International Mobile Telecommunication (IMT)
37.5 - 38 GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.550C MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	FIXED FIXED-SATELLITE (space-to- Earth) 5.550C MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to- Earth) Earth exploration-satellite (space-to-Earth) 5.547	37.5-38 GHz (38 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F. 749-2) 37.5-38 GHz is designated for International Mobile Telecommunication (IMT)
38 - 39.5 GHz	FIXED 5.550D FIXED-SATELLITE (space-to-Earth) 5.550C MOBILE 5.550B Earth exploration-satellite (space-to-Earth)	FIXED 5.550D FIXED-SATELLITE (space-to- Earth) 5.550C MOBILE 5.550B Earth exploration-satellite (space-to-Earth)	38-39.5 GHz (38 GHz Band) designated for FWS (e.g. point to point link or FWA according to ITU-R Rec F. 749-2) 38-39.5 GHz is designated for International Mobile

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.547	5.547	Telecommunication (IMT)
39.5 - 40 GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C MOBILE 5.550B MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547 5.550E	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C MOBILE 5.550B MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547 5.550E	39.5-40 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B 39.5-40GHz is designated for International Mobile Telecommunication (IMT)
40 - 40.5 GHz	EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C MOBILE 5.550B MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth) 5.550E	EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C MOBILE 5.550B MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth) 5.550E	Earth exploration satellite uplink Fixed Fixed satellite downlink Mobile Mobile satellite downlink Space research uplink 40-40.5 GHz is designated for International Mobile Telecommunication (IMT)
40.5 - 41 GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C LAND MOBILE	Fixed Fixed satellite downlink Broadcasting Broadcasting satellite

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	LAND MOBILE 5.550B BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile (space-to-Earth) 5.547	5.550B BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile (space-to-Earth) 5.547	
41 - 42.5 GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C LAND MOBILE 5.550B BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile 5.547 5.551F 5.551H 5.551I	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C LAND MOBILE 5.550B BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile 5.547 5.551F 5.551H 5.551I	Fixed Fixed satellite downlink Broadcasting Broadcasting satellite
42.5 - 43.5 GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except aeronautical mobile 5.550B RADIO ASTRONOMY 5.149 5.547	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except aeronautical mobile 5.550B RADIO ASTRONOMY 5.149 5.547	Fixed Fixed satellite downlink 42.5-43.5 GHz is designated for International Mobile Telecommunication (IMT)
43.5 - 47 GHz	MOBILE 5.553 5.553A MOBILE-SATELLITE	MOBILE 5.553 5.553A MOBILE-SATELLITE	Mobile Mobile satellite

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	Radionavigation Radionavigation satellite 45.5-47 GHz is designated for International Mobile Telecommunication (IMT)
47 - 47.2 GHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	Amateur communications Amateur satellite
47.2 - 47.5 GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553B 5.552A	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553B 5.552A	Fixed Fixed satellite uplink Mobile 47.2-47.5 GHz is designated for International Mobile Telecommunication (IMT)
47.5 - 47.9 GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A MOBILE 5.553B	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A MOBILE 5.553B	47.5-47.9 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B 47.5-47.9 GHz is designated for International Mobile Telecommunication (IMT)
47.9 - 48.2 GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553 B 5.552A	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C.552 MOBILE 5.553B 5.552A	Fixed Fixed satellite uplink Mobile 47.9-48.2 GHz is designated for International Mobile Telecommunication (IMT)
48.2 - 48.54 GHz	FIXED FIXED-SATELLITE	FIXED FIXED-SATELLITE	48.2-48.54 GHz designated for HDFSS uncoordinated Earth station

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	(Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	(Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	downlinks according to Res.143 (Rev. WRC-07) and 5.516B
48.54 - 49.44 GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.149 5.340 5.555	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.149 5.340 5.555	Fixed Fixed satellite uplink Mobile
49.44 - 50.2 GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.550C 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.550C 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	EARTH EXPLORATION- SATELLITE (passive) SPACE RESEARCH (passive) 5.340	Earth exploration satellite Space research
50.4 - 51.4 GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE Mobile-satellite (Earth-to-space)	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE Mobile-satellite (Earth-to-space)	Fixed Fixed satellite Mobile
51.4 - 52.4 GHz	FIXED	FIXED	51.4-52.4 GHz (52 GHz Band)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	FIXED-SATELLITE (Earth-to-space) 5.555C MOBILE 5.338A 5.547 5.556	FIXED-SATELLITE (Earth-to-space) 5.555C MOBILE 5.338A 5.547 5.556	designated for FWS (e.g. short-range digital point-to-point radio links in HDFS according to ITU-R Rec F.1496-1)
52.4 - 52.6GHz	FIXED MOBILE 5.547 5.556	FIXED MOBILE 5.547 5.556	Fixed services Mobile services
52.6 - 54.25 GHz	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	Earth Exploration- Satellite Services
54.25 - 55.78 GHz	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive)	Earth exploration satellite Inter-satellite Space research
55.78 - 56.9 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	EARTH EXPLORATION-SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	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)
56.9 - 57 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.558A	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)

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	MOBILE 5.558 SPACE RESEARCH (passive) 5.547	1)
57 - 58.2 GHz	EARTH EXPLORATION- SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	EARTH EXPLORATION- SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	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)
58.2 - 59 GHz	EARTH EXPLORATION- SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	EARTH EXPLORATION- SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	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)
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 (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

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
59.3 - 64 GHz	FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	61-61.5 GHz is allocated to ISM SRDs as per ITU-R Rec SM2153
64 - 65 GHz	FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	The band 64-66 GHz is allocated for HDFS; Res.75 applies.
65 - 66 GHz	EARTH EXPLORATION- SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	EARTH EXPLORATION- SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	The band 64-66 GHz is allocated for HDFS; Res.75 applies.
66 - 71 GHz	INTER-SATELLITE MOBILE 5.553 5.558 5.559AA MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION- SATELLITE 5.554	INTER-SATELLITE MOBILE 5.553 5.558 5.559AA MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	66-71 GHz is designated for International Mobile Telecommunication (IMT)
71 - 74 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	FIXED FIXED-SATELLITE (space-to- Earth) MOBILE	Fixed Links (71-76GHz) E-band Point to Point Links

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	MOBILE-SATELLITE (space-to-Earth)	MOBILE-SATELLITE (space-to-Earth)	
74 - 76 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.561	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.561	Fixed Links (71-76 GHz) E-band Point to Point Links
76 - 77.5 GHz	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	SRD - Road Transport and Traffic Telematics Radar (76 – 77 GHz)
77.5 - 78 GHz	AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.559B Radio astronomy Space research (space-to-Earth) 5.149	AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.559B Radio astronomy Space research (space-to-Earth) 5.149	Amateur services Radar
78 - 79 GHz	RADIOLOCATION Amateur Amateur-satellite Radio astronomy	RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth)	Amateur services Radar

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	Space research (space-to-Earth) 5.149 5.560	5.149 5.560	
79 - 81 GHz	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	Amateur services Radar
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 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 Links E-Band point to point links
84 - 86 GHz	FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149	FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149	Fixed Links E-Band point to point links
86 - 92 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)	

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	SPACE RESEARCH (passive) 5.340	5.340	
92 - 94 GHz	FIXED 5.338A MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED 5.338A MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	
94 - 94.1 GHz	EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	
94.1 - 95 GHz	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	
95 - 100 GHz	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION- SATELLITE 5.149 5.554	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	
100 - 102 GHz	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY	

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	SPACE RESEARCH (passive) 5.340 5.341	SPACE RESEARCH (passive) 5.340 5.341	
102 - 105 GHz	FIXED MOBILE RADIO ASTRONOMY 5.149 5.341	FIXED MOBILE RADIO ASTRONOMY 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 (passive) 5.562B 5.149 5.341	
109.5 - 111.8 GHz	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	
111.8 - 114.25 GHz	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	
114.25 - 116 GHz	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.340 5.341		
116 - 119.98 GHz	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341	
119.98 - 122.25 GHz	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.138 5.341	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.138 5.341	
122.25 - 123 GHz	FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138	FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138	
123 - 130 GHz	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio astronomy 5.149 5.554	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio astronomy 5.149 5.554	

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
130 - 134 GHz	EARTH EXPLORATION-SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.149 5.562A	EARTH EXPLORATION-SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.149 5.562A	
134 - 136 GHz	AMATEUR AMATEUR-SATELLITE Radio astronomy	AMATEUR AMATEUR-SATELLITE Radio astronomy	
136 - 141 GHz	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.149	
141 - 148.5 GHz	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	
148.5 - 151.5 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
151.5 - 155.5 GHz	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION	

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.149	5.149	
155.5 - 158.5 GHz	FIXED MOBILE RADIO ASTRONOMY 5.149	FIXED MOBILE RADIO ASTRONOMY 5.149	
158.5 - 164 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	
164 - 167 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
167 - 174.5 GHz	FIXED FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE 5.558 5.149	FIXED FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE 5.558 5.149	
174.5 - 174.8 GHz	FIXED INTER-SATELLITE MOBILE 5.558	FIXED INTER-SATELLITE MOBILE 5.558	
174.8 - 182 GHz	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	SPACE RESEARCH (passive)		
182 - 185 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
185 - 190 GHz	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	
190 - 191.8 GHz	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	
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 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.341 5.554	
200 - 209 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	5.340 5.341 5.563A		
209 - 217 GHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.341	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.341	
217 - 226 GHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	
226 - 231.5 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
231.5 - 232 GHz	FIXED MOBILE Radiolocation	FIXED MOBILE Radiolocation	
232 - 235 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation	

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
235 - 238 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) SPACE RESEARCH (passive) 5.563A 5.563B	EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) SPACE RESEARCH (passive) 5.563A 5.563B	
238 - 240 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE	
240 - 241 GHz	FIXED MOBILE RADIOLOCATION	FIXED MOBILE RADIOLOCATION	
241 - 248 GHz	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.138 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.138 5.149	
248 - 250 GHz	AMATEUR AMATEUR-SATELLITE Radio astronomy 5.149	AMATEUR AMATEUR-SATELLITE Radio astronomy 5.149	
250 - 252 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)	

FREQUENCY BAND	ITU - REGION 1	TANZANIA - ALLOCATION	APPLICATIONS/COMMENTS
	SPACE RESEARCH (passive) 5.340 5.563A	5.340 5.563A	
252 - 265 GHz	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	
265 - 275 GHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.563A	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.563A	
275 - 3000 GHz	(Not allocated) 5.564A 5.565	(Not allocated) 5.564A 5.565	

ANNEX I

11. ITU RR FOOTNOTES IN REGION 1 RELEVANT TO TANZANIA

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

5.54 Administrations conducting scientific research using frequencies below 8.3 kHz are urged to advise other administrations that may be concerned in order that such research may be afforded all practicable protection from harmful interference. (WRC-12) 5.54A Use of the 8.3-11.3 kHz frequency band by stations in the meteorological aids service is limited to passive use only. In the band 9-11.3 kHz, meteorological aids stations shall not claim protection from stations of the radionavigation service submitted for notification to the Bureau prior to 1 January 2013. For sharing between stations of the meteorological aids service and stations in the radionavigation service submitted for notification after this date, the most recent version of Recommendation ITU-R RS.1881 should be applied. (WRC-12)

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

5.57 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.

5.70 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 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 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).

5.82 In the maritime mobile service, the frequency 490 kHz is to be used exclusively for the transmission by coast stations of navigational and meteorological warnings and urgent information to ships, by means of narrow-band direct-printing telegraphy. The conditions for use of the frequency 490 kHz are prescribed in Articles 31 and 52. In using the frequency band 415-495 kHz for the aeronautical radionavigation service, administrations are requested to ensure that no harmful interference is caused to the frequency 490 kHz. In using the frequency band 472-479 kHz for the amateur service, administrations shall ensure that no harmful interference is caused to the frequency 490 kHz. (WRC-12)

5.82C 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)

5.84 The conditions for the use of the frequency 518 kHz by the maritime mobile service are prescribed in Articles 31 and 52. (WRC-07)

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.

5.100 In Region 1, the authorization to use the band 1 810-1 830 kHz by the amateur service in countries situated totally or partially north of 40° N shall be given only after consultation with the countries mentioned in Nos. 5.98 and 5.99 to define the necessary steps to be taken to prevent harmful interference between amateur stations and stations of other services operating in accordance with Nos. 5.98 and 5.99.

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. 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.

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

5.128 Frequencies in the frequency 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**).

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

5.133B Stations in the amateur service using the frequency band 5 351.5-5 366.5 kHz shall not exceed a maximum radiated power of 15 W (e.i.r.p.). However, in Region 2 in Mexico, stations in the amateur service using the frequency band 5 351.5-5 366.5 kHz shall not exceed a maximum radiated power of 20 W (e.i.r.p.). In the following Region 2 countries: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Dominica, El Salvador, Ecuador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Saint Lucia, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela, as well as the overseas 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 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. (WRC-07).

5.138 The following bands:

6 765-6 795 kHz (center frequency 6 780 kHz),

433.05-434.79 MHz	(center frequency 433.92 MHz) in Region 1
	except in the countries mentioned in No. 5.280 ,
61-61.5 GHz	(center frequency 61.25 GHz),
122-123 GHz	(center frequency 122.5 GHz), and
244-246 GHz	(center 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).

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

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

5.147 On condition that harmful interference is not caused to the broadcasting service, frequencies in the bands 9 775-9 900 kHz, 11 650-11 700 kHz and 11 975-12 050 kHz may be used by stations in the fixed service communicating only within the boundary of the country in which they are located, each station using a total radiated power not exceeding 24 dBW. (WRC-07)

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
73-74.6 MHz in Regions 1 and 3,	10.6-10.68 GHz,	GHz,
150.05-153 MHz in Region 1,	14.47-14.5 GHz,	129.23-129.49
322-328.6 MHz,	22.01-22.21 GHz,	GHz,
406.1-410 MHz,	22.21-22.5 GHz,	130-134 GHz,
608-614 MHz in Regions 1 and 3,	22.81-22.86 GHz,	136-148.5 GHz,
	23.07-23.12 GHz,	151.5-158.5 GHz,
	31.2-31.3 GHz,	168.59-168.93
1 330-1 400 MHz,	31.5-31.8 GHz in Regions 1 and 3,	GHz,
1 610.6-1 613.8 MHz,		171.11-171.45
1 660-1 670 MHz,	36.43-36.5 GHz,	GHz,
718.8-1 722.2 MHz,	42.5-43.5 GHz,	172.31-172.65
655-2 690 MHz,	48.94-49.04 GHz,	GHz,
260-3 267 MHz,	76-86 GHz,	173.52-173.85
3 332-3 339 MHz,	92-94 GHz,	GHz,
345.8-3 352.5 MHz,	94.1-100 GHz,	195.75-196.15
825-4 835 MHz,		GHz,
		209-226 GHz,
		241-250 GHz,
		252-275 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	(center frequency 13 560 kHz),
26 957-27 283 kHz	(center frequency 27 120 kHz),
40.66-40.70 MHz	(center frequency 40.68 MHz),
902-928 MHz	in Region 2 (center frequency 915 MHz),
2 400-2 500 MHz	(center frequency 2 450 MHz),
5 725-5 875 MHz	(center frequency 5 800 MHz), and
24-24.25 GHz	(center 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.

5.157 The use of the band 23 350-24 000 kHz by the maritime mobile service is limited to inter-ship radiotelegraphy.

5.165 *Additional allocation:* in Angola, Cameroon, Congo (Rep. of the), Egypt, Madagascar, Mozambique, Niger, Somalia, Sudan, South Sudan, Tanzania and Chad, the frequency band 47-68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19).

5.166B 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(μ V/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).

5.166C 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)

5.169A *Alternative allocation:* in the following countries in Region 1: Angola, Saudi Arabia, Bahrain, Burkina Faso, Burundi, the United Arab Emirates, Gambia, Jordan, Kenya, Kuwait, Mauritius, Mozambique, Oman, Uganda, Qatar, South Sudan and **Tanzania**, the frequency band 50-54 MHz is allocated to the amateur service on a primary basis. In Guinea-Bissau, the frequency band 50.0-50.5 MHz is allocated to the amateur service on a primary basis. In Djibouti, the frequency band

50-52 MHz is allocated to the amateur service on a primary basis. With the exception of those countries listed in No. **5.169**, stations in the amateur service operating in Region 1 under this footnote, in all or part of the frequency band 50-54 MHz, shall not cause harmful interference to, or claim protection from, stations of other services operating in accordance with the Radio Regulations in Algeria, Egypt, Iran (Islamic Republic of), Iraq, Israel, Libya, Palestine*, the Syrian Arab Republic, the Dem. People's Republic of Korea, Sudan and Tunisia. 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 listed countries requiring protection. (WRC-19).

5.169B 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).

5.180 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. (WRC-12).

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

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

5.203C 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 **660 (WRC-19)**. Resolution **32 (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).

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

5.208A In making assignments to space stations in the mobile-satellite service in the 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 608-614MHz 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).

5.209A 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).

5.210 *Additional allocation:* in Italy, the Czech Rep. and the United Kingdom, the bands 138-143.6 MHz and 143.65-144 MHz are also allocated to the space research service (space-to-Earth) on a secondary basis. (WRC-07) **5.211** *Additional allocation:* in Germany, Saudi Arabia, Austria, Bahrain, Belgium, Denmark, the United Arab Emirates, Spain, Finland, Greece, Guinea, Ireland, Israel, Kenya, Kuwait, The

Former Yugoslav Republic of Macedonia, Lebanon, Liechtenstein, Luxembourg, Mali, Malta, Montenegro, Norway, the Netherlands, Qatar, Slovakia, the United Kingdom, Serbia, Slovenia, Somalia, Sweden, Switzerland, **Tanzania**, Tunisia and Turkey, the frequency band 138-144 MHz is also allocated to the maritime mobile and land mobile services on a primary basis. (WRC-15).

5.211 *Additional allocation:* in Germany, Saudi Arabia, Austria, Bahrain, Belgium, Denmark, the United Arab Emirates, Spain, Finland, Greece, Guinea, Ireland, Israel, Kenya, Kuwait, Lebanon, Liechtenstein, Luxembourg, North Macedonia, Mali, Malta, Montenegro, Norway, the Netherlands, Qatar, Slovakia, the United Kingdom, Serbia, Slovenia, Somalia, Sweden, Switzerland, **Tanzania**, Tunisia and Turkey, the frequency band 138-144 MHz is also allocated to the maritime mobile and land mobile services on a primary basis. (WRC-19).

5.214 *Addition allocation:* in Eritrea, Ethiopia, Kenya, North Macedonia, Montenegro, Serbia, Somalia, Sudan, South Sudan and Tanzania, the frequency band 138-144 MHz is also allocated to the fixed service 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. (WRC -15).

5.218A 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 **32 (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 $-149 \text{ dB(W/(m}^2 \text{ 4 kHz))}$ 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).

5.219 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 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).

5.220 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)

5.221 Stations of the mobile-satellite service in the frequency band 148-149.9 MHz shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations in the following countries: Albania, Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Benin, Bosnia and Herzegovina, Botswana, Brunei Darussalam, Bulgaria, Cameroon, China, Cyprus, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Croatia, Cuba, Denmark, Djibouti, Egypt, the United Arab Emirates, Eritrea, Spain, Estonia, Eswatini, Ethiopia, the Russian Federation, Finland, France, Gabon, Georgia, Ghana, Greece, Guinea, Guinea Bissau, Hungary, India, Iran (Islamic Republic of), Ireland, Iceland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Lesotho, Latvia, Lebanon, Libya, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Malaysia, Mali, Malta, Mauritania, Moldova, Mongolia, Montenegro, Mozambique, Namibia, Norway, New Zealand, Oman, Uganda, Uzbekistan, Pakistan, Panama, Papua New Guinea, Paraguay, the Netherlands, the Philippines, Poland, Portugal, Qatar, the Syrian Arab Republic, Kyrgyzstan, Dem. People's Rep. of Korea, Slovakia, Romania, the United Kingdom, Senegal, Serbia, Sierra Leone, Singapore, Slovenia, Sudan, Sri Lanka, South Africa, Sweden, Switzerland, **Tanzania**, Chad, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Ukraine, Viet Nam, Yemen, Zambia and Zimbabwe. (WRC-19)

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 long range 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).

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).

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

5.228AB The use of the frequency bands 157.1875-157.3375 MHz and 161.7875-161.9375 MHz by the maritime mobile-satellite service (Earth-to-space) is limited to non-geostationary-satellite systems operating in accordance with Appendix **18**. (WRC-19)..

5.228AC The use of the frequency bands 157.1875-157.3375 MHz and 161.7875-161.9375 MHz by the maritime mobile-satellite service (space-to-Earth) is limited to non-geostationary-satellite systems operating in accordance with Appendix **18**. Such use is subject to agreement obtained under No. **9.21** with respect to the terrestrial services in Azerbaijan, Belarus, China, Korea (Rep. of), Cuba, the Russian Federation, the Syrian Arab Republic, the Dem. People's Rep. of Korea, South Africa and Viet Nam. (WRC-19).

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).

5.228D The frequency bands 161.9625-161.9875 MHz (AIS 1) and 162.0125-162.0375 MHz (AIS 2) may continue to be used by the fixed and mobile services on a primary basis until 1 January 2025, at which time this allocation shall no longer be valid. Administrations are encouraged to make all practicable efforts to discontinue the use of these bands by the fixed and mobile services prior to the transition date. During this transition period, the maritime mobile service in these frequency bands has priority over the fixed, land mobile and aeronautical mobile services. (WRC-12).

5.228E The use of the automatic identification system in the frequency bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz by the aeronautical mobile (OR) service is limited to aircraft stations for the purpose of search and rescue operations and other safety-related communications. (WRC-12).

5.228F The use of the frequency bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz by the mobile-satellite service (Earth-to-space) is limited to the reception of automatic identification system emissions from stations operating in the maritime mobile service. (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**. (WRC-07).

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).

5.260A 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 5dBW in the whole 399.9-400.05MHz 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).

5.260B In the frequency band 400.02-400.05MHz, the provisions of No.5.260A 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.

5.264A 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-satellite systems and non-geostationary-satellite 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-satellite 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-satellite systems and non-geostationary-satellite 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-satellite 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).

5.264B 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. **5.264A** 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 $-153 \text{ dB(W/m}^2\text{)}$ for $0^\circ \text{ dGd } 5^\circ$, $-153 + 0.077 (G - 5) \text{ dB(W/m}^2\text{)}$ for $5^\circ \text{ dGd } 70^\circ$ and $-148 \text{ dB(W/m}^2\text{)}$ for $70^\circ \text{ dGd } 90^\circ$, where G 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).

5.279A 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).

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

5.296 *Additional allocation:* in Albania, Germany, Angola, Saudi Arabia, Austria, Bahrain, Belgium, Benin, Bosnia and Herzegovina, Botswana, Bulgaria, Burkina Faso, Burundi, Cameroon, Vatican, Congo (Rep. of the), Côte d'Ivoire, Croatia, Denmark, Djibouti, Egypt, United Arab Emirates, Spain, Estonia, 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.

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

5.312A In Region 1, the use of the frequency band 694-790 MHz by the mobile, except aeronautical mobile, service is subject to the provisions of Resolution **760 (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 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).

5.322 In Region 1, in the band 862-960 MHz, stations of the broadcasting service shall be operated only in the African Broadcasting Area (see Nos. **5.10** to **5.13**) excluding Algeria, Burundi, Egypt, Spain, Lesotho, Libya, Morocco, Malawi, Namibia, Nigeria, South Africa, Tanzania, Zimbabwe and Zambia, subject to agreement obtained under No. **9.21**. (WRC-12)

5.327A The use of the frequency band 960-1 164 MHz by the aeronautical mobile (R) service is limited to systems that operate in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution **417 (Rev.WRC-15)**. (WRC-15).

5.328 The use of the band 960-1 215 MHz by the aeronautical radionavigation service is reserved on a worldwide basis for the operation and development of airborne electronic aids to air navigation and any directly associated ground based facilities. (WRC-2000)

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)

5.328AA 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)

5.328B 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 1215- 1300 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)

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, 51.4-52.4 GHz,

52.4-52.6 GHz, 81-86 GHz and 92-94 GHz, Resolution **750 (Rev.WRC-19)** applies. (WRC-19)

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

5.340 All emissions are prohibited in the following bands: 400-1 427 MHz, 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 GHz¹,
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 extra-terrestrial 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)

5.341B In Region 2, the frequency band 1 427-1 518 MHz is 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 this frequency band by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-15)

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-19)**. 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 (Rev.WRC-19)**. (WRC-19)

5.346A The frequency band 1 452-1 492 MHz is identified for use by administrations in Region 3 wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-19)** and Resolution **761 (Rev.WRC-19)**. The use of this frequency band by the above administrations for the implementation of IMT is subject to agreement obtained under No. **9.21** from countries using stations of the aeronautical mobile 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)

5.348 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)

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

5.351 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)

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

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

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

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

5.357A In applying the procedures of Section II of Article **9** to the mobile-satellite service in the frequency bands 1 545-1 555 MHz and 1 646.5-1 656.5 MHz, priority shall be given to accommodating the spectrum requirements of the aeronautical mobile-satellite (R) service providing transmission of messages with priority 1 to 6 in Article **44**. Aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article **44** shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within

a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article **44**. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution **222 (Rev.WRC-12)** * shall apply.) (WRC-12)

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

5.365 The use of the band 1 613.8-1 626.5 MHz by the mobile-satellite service (space-to-Earth) is subject to coordination under No. **9.11A**. **5.366** The band 1 610-1 626.5 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities. Such satellite use is subject to agreement obtained under No. **9.21**.

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

5.368 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)

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

5.372 Harmful interference shall not be caused to stations of the radio astronomy service using the 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)

5.373 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 1626.5-1660.5MHz, unless otherwise agreed between the notifying administrations. (WRC-19)

5.373A 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)

5.374 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 intersatellite 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)

5.380A 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)

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 dB(W/(m² · 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)** *. (WRC-07)

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

5.392 Administrations 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 nongeostationary 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.

5.402 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 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) 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-19)**. 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 $-154.5 \text{ dB (W/(m}^2 \sim 4 \text{ kHz))}$ 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).

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

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

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

5.441 The use of the bands 4 500-4 800 MHz (space-to-Earth), 6 725-7 025 MHz (Earth-to-space) by the fixed satellite service shall be in accordance with the provisions of Appendix **30B**. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by geostationary-satellite systems in the fixed-satellite service shall be in accordance with the provisions of Appendix **30B**. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed satellite service and of the complete

coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)

5.441B In Angola, Armenia, Azerbaijan, Benin, Botswana, Brazil, Burkina Faso, Burundi, Cambodia, Cameroon, China, Côte d'Ivoire, Djibouti, Eswatini, Russian Federation, Gambia, Guinea, Iran (Islamic Republic of), Kazakhstan, Kenya, Lao P.D.R., Lesotho, Liberia, Malawi, Mauritius, Mongolia, Mozambique, Nigeria, Uganda, Uzbekistan, the Dem. Rep. of the Congo, Kyrgyzstan, the Dem. People's Rep. of Korea, Sudan, South Africa, **Tanzania**, Togo, Viet Nam, Zambia and Zimbabwe, the frequency band 4 800-4 990 MHz, or portions thereof, 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 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 concerned administrations, and IMT stations shall not claim protection from stations of other applications of the mobile service. In addition, before an administration brings into use an IMT station in the mobile service, it shall ensure that the power flux-density (pfd) produced by this station does not exceed $-155 \text{ dB(W/(m}^2 \cdot 1 \text{ MHz))}$ produced up to 19 km above sea level at 20 km from the coast, defined as the low-water mark, as officially recognized by the coastal State. This pfd criterion is subject to review at WRC-23. Resolution **223 (Rev.WRC-19)** applies. This identification shall be effective after WRC-19. (WRC-19)

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 $-124.5 \text{ dB(W/m}^2\text{)}$ 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 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 frequency 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) in the band 5 150-5 250 MHz is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to coordination under No. **9.11A**.

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

5.448A The Earth exploration-satellite (active) and space research (active) services in the frequency band 5 250-5 350 MHz shall not claim protection from the radiolocation service. No. **5.43A** does not apply. (WRC-03) **5.448B** The Earth exploration-satellite service (active) operating in the band 5 350-5 570 MHz and space research service (active) operating in the band 5 460-5 570 MHz shall not cause harmful interference to the aeronautical radionavigation service in the band 5 350-5 460 MHz, the radionavigation service in the band 5 460-5 470 MHz and the maritime radionavigation service in the band 5 470-5 570 MHz. (WRC-03)

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

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

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

5.450A In the frequency band 5 470-5 725 MHz, stations in the mobile service shall not claim protection from radiodetermination services. 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.

5.453 *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Djibouti, Egypt, the United Arab Emirates, Eswatini, Gabon, Guinea, Equatorial Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kenya, Kuwait, Lebanon, Libya, Madagascar, Malaysia, Niger, Nigeria, Oman, Uganda, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Sri Lanka, **Tanzania**, Chad, Thailand, Togo, Viet Nam and Yemen, the frequency band 5 650-5 850 MHz is also allocated to the fixed and mobile services on a primary basis. In this case, the provisions of Resolution **229 (Rev.WRC-19)** do not apply. In addition, in Afghanistan, Angola, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Dem. Rep. of the Congo, Fiji, Ghana, Kiribati, Lesotho, Malawi, Maldives, Mauritius, Micronesia, Mongolia, Mozambique, Myanmar, Namibia, Nauru, New Zealand, Papua New Guinea, Rwanda, Solomon Islands, South Sudan, South Africa, Tonga, Vanuatu, Zambia and Zimbabwe, the frequency band 5 725-5 850 MHz is allocated to the fixed service on a primary basis, and stations operating in the fixed service shall not cause harmful interference to and shall not claim protection from other primary services in the frequency band. (WRC-19)

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 6 425-7 075 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 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)

5.461AA The use of the frequency band 7 375-7 750 MHz by the maritime mobile-satellite service is limited to geostationary-satellite networks. (WRC-15)

5.461AB In the frequency band 7 375-7 750 MHz, earth stations in the maritime mobile-satellite service shall not claim protection from, nor constrain the use and development of, stations in the fixed and mobile, except aeronautical mobile, services. No. **5.43A** does not apply. (WRC-15)

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

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

-135 dB(W/m ²) in a 1 MHz band	for	0 dT 5°
-135 + 0.5 (T- 5) dB(W/m ²) in a 1 MHz band	for	5 dT 25°
-125 dB(W/m ²) in a 1 MHz band	for	25 dTd 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.

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

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

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

5.474A 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 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 In the band 9 300-9 500 MHz, stations operating in the radiolocation service shall not cause harmful interference to, nor claim protection from, radars operating

in the radionavigation service in conformity with the Radio Regulations. Ground-based radars used for meteorological purposes have priority over other radiolocation uses. (WRC-07)

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

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

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

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

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

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

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

5.484A The use of the bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.75 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Region 1, 13.75-14.5 GHz (Earth-to-space), 17.8-18.6 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 27.5-28.6 GHz (Earth-to-space), 29.5-30 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite

systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)

5.484B 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)

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

5.499C The allocation of the frequency band 13.4-13.65 GHz to the space research service on a primary basis is limited to: satellite systems operating in the space research service (space-to-space) to relay data from space stations in the geostationary-satellite orbit to associated space stations in non-geostationary satellite orbits for which advance publication information has been received by the Bureau by 27 November 2015, active spaceborne sensors, satellite systems operating in the space research service (space-to-Earth) to relay data from space stations in the geostationary-satellite orbit to associated earth stations. Other uses of the frequency band by the space research service are on a secondary basis. (WRC-15)

5.499D In the frequency band 13.4-13.65 GHz, satellite systems in the space research service (space-to-Earth) and/or the space research service (space-to-space) shall not cause harmful interference to, nor claim protection from, stations in the fixed, mobile, radiolocation and Earth exploration-satellite (active) services. (WRC-15)

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

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 space borne 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 dB (W/(m² · 10 MHz)) for more than 1% of the time produced at 36 m above sea level at the low water mark, as officially recognized by the coastal State;

–115 dB (W/(m² · 10 MHz)) for more than 1% of the time produced 3 m above ground at the border of the territory of an administration deploying or planning to deploy land mobile radars in this band, unless prior agreement has been obtained.

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

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

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

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

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

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;

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

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

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

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

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

5.504B Aircraft earth stations operating in the aeronautical mobile-satellite service in the frequency band 14-14.5 GHz shall comply with the provisions of Annex 1, Part C of Recommendation ITU-R M.1643-0, with respect to any radio astronomy station performing observations in the 14.47-14.5 GHz frequency band located on the territory of Spain, France, India, Italy, the United Kingdom and South Africa. (WRC-15)

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)

5.506B Earth stations located on board vessels communicating with space stations in the fixed-satellite service may operate in the frequency band 14-14.5 GHz without the need for prior agreement from Cyprus and Malta, within the minimum distance given in Resolution **902 (WRC-03)** from these countries. (WRC-15)

5.508A In the frequency band 14.25-14.3 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Bahrain, Botswana, China, Côte d'Ivoire, Egypt, France, Guinea, India, Iran (Islamic Republic of), Italy, Kuwait,

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

5.509A In the frequency band 14.3-14.5 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Bahrain, Botswana, Cameroon, China, Côte d'Ivoire, Egypt, France, Gabon, Guinea, India, Iran (Islamic Republic of), Italy, Kuwait, Morocco, Nigeria, Oman, the Syrian Arab Republic, the United Kingdom, Sri Lanka, Tunisia and Viet Nam by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1, Part B of Recommendation ITU-R M.1643-0, unless otherwise specifically agreed by the affected administration(s). The provisions of this footnote in no way derogate the obligations of the aeronautical mobile-satellite service to operate as a secondary service in accordance with No. **5.29**. (WRC-15)

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

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

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

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

When applying this provision, administrations should consider the relevant parts of these Regulations and the latest relevant ITU-R Recommendations. (WRC-15)

5.509F In the frequency bands 14.50-14.75 GHz in countries listed in Resolution **163 (WRC-15)** and 14.50-14.8 GHz in countries listed in Resolution **164 (WRC-15)**, earth stations in the fixed-satellite service (Earth-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 guard bands under Appendix **30A** and feeder links for the broadcasting-satellite service in Region 2. Other uses of this frequency band by the space research service are on a secondary basis. (WRC-15)

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

5.511A Use of the frequency band 15.43-15.63 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links of non-geostationary systems in the mobile-satellite service, subject to coordination under No. **9.11A**. (WRC-15)

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 $-156 \text{ dB(W/m}^2\text{)}$ in a 50 MHz

bandwidth in the frequency band 15.35-15.4 GHz, at any radio astronomy observatory site for more than 2 per cent of the time. (WRC-12)

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

5.515 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,
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 frequency bands by other fixed-satellite service applications or by other services to which these frequency bands are allocated on a co-primary basis and does not establish priority in these Radio Regulations among users of the frequency bands. Administrations should take this into account when considering regulatory provisions in relation to these frequency bands. See Resolution **143 (Rev.WRC-19)**. (WRC-19)

5.517A 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 **169 (WRC-19)**.

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.

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 29.930 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 $-120.4 \text{ dB(W/(m}^2 \cdot \text{MHz))}$ 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).

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

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

5.532AB 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 **242 (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 **242 (WRC-19)** applies. (WRC-19).

5.536B In Algeria, Saudi Arabia, Austria, Bahrain, Belgium, Brazil, China, Korea (Rep. of), Denmark, Egypt, United Arab Emirates, Estonia, Finland, Hungary, India, Iran (Islamic Republic of), Iraq, Ireland, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Lithuania, Moldova, Norway, Oman, Uganda, Pakistan, the Philippines, Poland, Portugal, Qatar, the Syrian Arab Republic, Dem. People's Rep. of Korea, Slovakia, the Czech Rep., Romania, the United Kingdom, Singapore, Slovenia, Sudan, Sweden, **Tanzania**, Turkey, Viet Nam and Zimbabwe, earth stations operating in the Earth exploration-satellite service in the frequency band 25.5-27 GHz shall not claim protection from, or constrain the use and deployment of, stations of the fixed and mobile services. Resolution **242 (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.

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.

5.543B 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 **167 (WRC-19)**. (WRC-19)

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.

5.545 *Different category of service:* in Armenia, Georgia, Kyrgyzstan, Tajikistan and Turkmenistan, the allocation of the band 31-31.3 GHz to the space research service is on a primary basis (see No. **5.33**). (WRC-12)

5.547 The bands 31.8-33.4 GHz, 37-40 GHz, 40.5-43.5 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz are available for high-density applications in the fixed service (see Resolution **75 (WRC-2000)** *). Administrations should take this into account when considering regulatory provisions in relation to these bands. Because of the potential deployment of high-density applications in the fixed-satellite service in the

bands 39.5-40 GHz and 40.5-42 GHz (see No. **5.516B**), administrations should further take into account potential constraints to high-density applications in the fixed service, as appropriate. (WRC-07)

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

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

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

5.550B 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 frequency 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 frequency bands, as appropriate. Resolution **243 (WRC-19)** applies. (WRC-19)

5.550C 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 non-geostationary-satellite system 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-satellite systems in other services. Resolution **770 (WRC-19)** shall also apply, and No. **22.2** shall continue to apply. (WRC-19)

5.550D 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, 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 **168 (WRC-19)**. (WRC-19)

5.550E 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)

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

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

These epfd values shall be evaluated using the methodology given in Recommendation ITU-R S.1586-1 and the reference antenna pattern and the maximum gain of an antenna in the radio astronomy service given in Recommendation ITU-R RA.1631-0 and shall apply over the whole sky and for elevation angles higher than the minimum operating angle 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 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)

5.553 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)

5.553A In Algeria, Angola, Bahrain, Belarus, Benin, Botswana, Brazil, Burkina Faso, Cabo Verde, Korea (Rep. of), Côte d'Ivoire, Croatia, United Arab Emirates, Estonia, Eswatini, Gabon, Gambia, Ghana, Greece, Guinea, Guinea- Bissau, Hungary, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Lesotho, Latvia, Liberia, Lithuania, Madagascar, Malawi, Mali, Morocco, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Oman, Qatar, Senegal, Seychelles, Sierra Leone, Slovenia, Sudan, South Africa, Sweden, **Tanzania**, Togo, Tunisia, Zambia and Zimbabwe, the

frequency band 45.5-47 GHz is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT), taking into account No. **5.553**. With respect to the aeronautical mobile service and radionavigation service, the use of this frequency band for the implementation of IMT is subject to agreement obtained under No. **9.21** with concerned administrations and shall not cause harmful interference to, or claim protection from these services. 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 **244 (WRC-19)** applies. (WRC-19)

5.553B 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, Seychelles, Sierra Leone, Singapore, Slovenia, Somalia, Sudan, South 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 allocated, and does not establish any priority in the Radio Regulations. Resolution **243 (WRC-19)** applies. (WRC-19)

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 $-151.8 \text{ dB(W/m}^2\text{)}$ in any 500 kHz band at the site of any radio astronomy station. (WRC-03)

5.555C 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)

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

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

5.559AA The frequency band 66-71 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 this frequency band is allocated and does not establish priority in the Radio Regulations. Resolution **241 (WRC-19)** applies. (WRC-19)

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

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

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

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

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

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

5.562B In the frequency 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)

5.564A 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.

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)