NATIONAL FREQUENCY ALLOCATION PLAN (NFAP) 2020

IN ACCORDANCE WITH THE ELECTRONIC COMMUNICATIONS ACT, NO.9 OF 2013 (PART VII)

AND

THE ELECTRONIC COMMUNICATIONS (RADIOCOMMUNICATIONS AND FREQUENCY SPECTRUM) REGULATIONS, 2016.

OCTOBER 2020

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1. Introduction and Background

1.1 Legislative Framework

Radio Frequency Spectrum Management and Planning in Eswatini is governed by the provisions of the Electronic Communications Act, No.9 of 2013 (PART VII) and further elaborated in the Electronic Communications (Radio Communications and Frequency Spectrum) Regulations, 2016. The Act and Regulations require the Commission, in consultation with all major stakeholders, to develop a National Frequency Allocation Plan (NFAP) which may be revised periodically. The development and review process is generally guided by:

- national interests and priorities on the use of radio frequency spectrum, which is a national resource;
- Regional (Southern African Development Community - SADC) interests and developments aimed at harmonizing the use of radio frequency spectrum resources across the region for social and economic benefits;
- International conventions and treaties to which the country is a signatory to governing the use and management of radio frequency spectrum.

Globally, the use and management of radio frequency spectrum resources is governed through the World Radio Conferences (WRC) convened under the auspices of the International Telecommunications Union (ITU). Since the country is a signatory to the ITU, it is expected to align to the outcomes and decisions of the World Radio Conferences. This implies that the Commission, as the statutory body mandated by the Electronic Communications Act to deal with issues related to radio frequency spectrum management, must take into account these international agreements, treaties and conventions that the country is party to in the carrying out of its functions pertaining to radio frequency spectrum.

In accordance with the Electronic Communications Act, No.9 of 2013, the Commission developed and published the current NFAP 2017 in May 2017 in alignment with the outcomes and decisions of the World Radiocommunications Conference (WRC-15), held in November 2015. Since the development of the NFAP 2017, the ITU conducted the World Radiocommunication Conference 2019 (WRC-19) in Sharm El-Sheikh, Egypt from 28 October 2019 to 22 November 2019 which made changes to the ITU Radio Regulations (ITU-RR) as a result of the Conference decisions. The SADC has further revised the regional Frequency Allocation Plan (FAP) based on the WRC-19 outcomes.

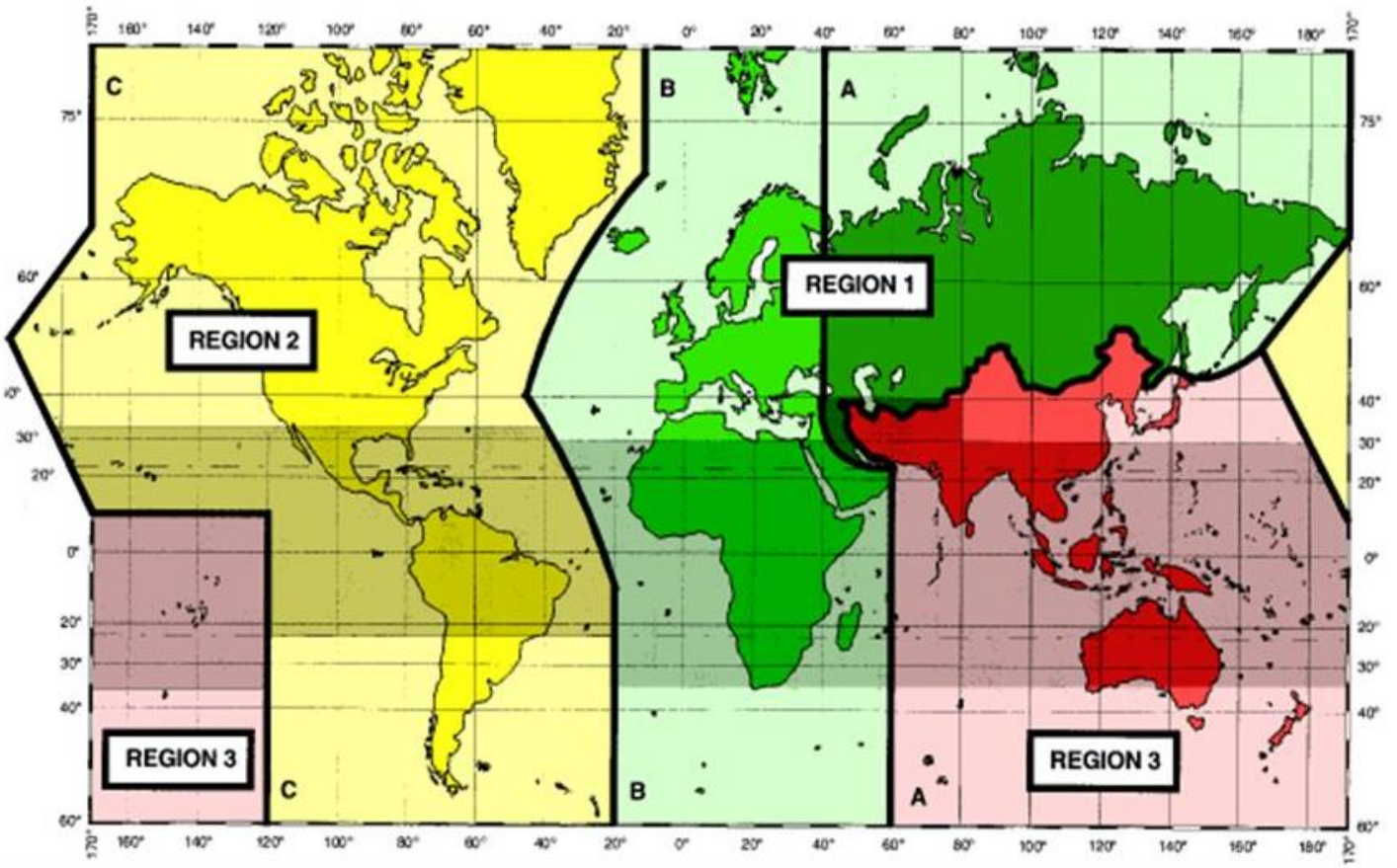
Following these developments, the Commission has reviewed and updated the NFAP in accordance with national priorities, ITU Radio Regulations, WRC-19 Final Acts and the SADC region Frequency Allocation Plan. At national level and in accordance with the Electronic Communications Act, this plan ensures that, at a bare minimum, frequency spectrum is allocated to:

- Public electronic communications and broadcasting networks and services;
- Government services, including those aimed at furthering public interest;
- Private electronic communications services and networks;
- Private amateur wireless operations;

The overall plan seeks to provide clarity and guidance on how the radio frequency spectrum is to be allocated for different services in the country. The plan, however, does not provide detailed channelling arrangements for the different spectrum bands.

1.2 ITU Radiocommunications Sector (ITU-R) Regions

For the purposes of allocating frequencies, the ITU has divided the world into three regions as shown on the following map:



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

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

Region 3: Region 3 includes the area limited on the east by line C and on the west by line A, except any of the territory of Armenia, Azerbaijan, the Russian Federation, Georgia, Kazakhstan, Mongolia, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Turkey and Ukraine and the

area to the north of Russian Federation. It also includes that part of the territory of the Islamic Republic of Iran lying outside of those limits.

The Kingdom of Eswatini falls under ITU Region 1 and thus aligns its frequency allocations with those specified for ITU Region 1 in the ITU Radio Regulations as required by the Act.

2. Terms, Definitions and Acronyms

2.1 Terms and Definitions

The following terms shall have the meanings defined below. These terms and definitions do not, however, necessarily apply for other purposes

***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).

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

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

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

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

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

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

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

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

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

frequency band concerned.

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

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

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

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

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

***Broadcasting-satellite service*:** A radiocommunication service in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public. In the broadcasting-satellite service, the term "direct reception" shall encompass both individual reception and community reception.

***Coordinated Universal Time (UTC)*:** Time scale, based on the second (SI), as defined in Recommendation ITU-R TF.460-6. (WRC-03). For most practical purposes associated with the Radio Regulations, UTC is equivalent to mean solar time at the prime meridian (0° longitude), formerly expressed in GMT.

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

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

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

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

***Fixed-satellite service*:** A radiocommunication service between earth stations at given positions, when one or more satellites are used; the given position may be a specified fixed point or any fixed point within specified areas; in some cases, this service includes satellite-to-satellite links, which may also be operated in the inter-satellite service; the fixed-satellite service may also include feeder links for other space radiocommunication services.

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

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

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

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

***Maritime mobile service*:** A mobile service between coast stations and ship stations, or between ship stations, or between associated on-board communication stations; survival craft stations and emergency position-indicating radiobeacon stations may also participate in this service.

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

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

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

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

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

***Mobile service*:** A radiocommunication service between mobile and land stations, or between mobile stations (CV).

***Mobile-satellite service*:** A radiocommunication service between mobile earth stations and one or more space stations, or between space stations used by this service; or between mobile earth

stations by means of one or more space stations. This service may also include feeder links necessary for its operation.

***Port operations service*:** A maritime mobile service in or near a port, between coast stations and ship stations, or between ship stations, in which messages are restricted to those relating to the operational handling, the movement and the safety of ships and, in emergency, to the safety of persons. Messages which are of a public correspondence nature shall be excluded from this service.

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

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

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

Radiocommunication: Telecommunication by means of radio waves.

***Radiocommunication service*:** A service as defined in this section involving the transmission, emission and/or reception of radio waves for specific telecommunication purposes. In this document, unless otherwise stated, any radiocommunication service relates to terrestrial radiocommunication.

***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.

***Radiodetermination-satellite service*:** A radiocommunication service for the purpose of radiodetermination involving the use of one or more space stations. This service may also include feeder links necessary for its own operation.

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

***(R):** route.

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

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

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

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

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

Radionavigation service: A radiodetermination service for the purpose of radionavigation.

***Radionavigation-satellite service*:** A radiodetermination-satellite service used for the purpose of

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

Radio waves or Hertzian waves**:** Electromagnetic waves of frequencies arbitrarily lower than 3 000 GHz, propagated in space without artificial guide.

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

Ship movement service**:** A safety service in the maritime mobile service other than a port operations service, between coast stations and ship stations, or between ship stations, in which messages are restricted to those relating to the movement of ships. Messages which are of a public correspondence nature shall be excluded from this service.

Space operation service**:** A radiocommunication service concerned exclusively with the operation of spacecraft, in particular space tracking, space telemetry and space telecommand. These functions will normally be provided within the service in which the space station is operating.

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.

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

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

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

Standard frequency and time signal-satellite service**:** A radiocommunication service using space stations on earth satellites for the same purposes as those of the standard frequency and time signal service. This service may also include feeder links necessary for its operation.

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 (CS).

Terrestrial radiocommunication**:** Any radiocommunication other than space radiocommunication or radio astronomy.

2.2 Acronyms

AAA	Astronomy Advantage Area
AFS	South Africa
ASDE	Airports Surface Detection Equipment
ATC/CGC	Auxiliary Terrestrial Component /Complimentary Ground Component
BFWA	Broadband Fixed Wireless Access
BOT	Botswana
BSS	Broadcast Satellite Service
BTX	Base Transmit
C-band	Frequency range between about 4 and 6 GHz dBW Decibels relative to one Watt of power.
DECT	Digital European Cordless Telecommunication system.
ERC	Decision ERC/DEC/(94)03 refers.
DF	Duplex Frequency
DSC	Digital Selective Calling
DSSS	Direct Sequence Spread Spectrum
e.i.r.p.	Effective Isotropically Radiated power.
EESS	Earth Exploration-Satellite Service
ENG	Electronic News Gathering
ENG/OB	Electronic News Gathering / Outside Broadcasting
EPIRB	Emergency Position Indicating Radio Beacon
ERC	European Radiocommunications Committee - the main CEPT committee looking after radio matters.
FDD	Frequency Division Duplex
FDDA	Field Disturbance and Doppler Apparatus
FM	Frequency Modulation
FSS	Fixed Satellite Service
FWA	Fixed Wireless Access
GLONASS	Global Navigation Satellite System
GMDSS	Global Maritime Distress and Safety System.
GPRS	General Packet Radio Service
GPS	Global Positioning System - a satellite radio navigation system.
GSM	Global System for Mobile communications. Originally Groupe Spécial Mobile. See ERC

	Decision ERC/DEC/(94)01.
GSM 900	GSM using 900 MHz frequencies
GSM-R	GSM Railways
GSO	Geostationary Orbit
HAP	High Altitude Platform
HDFS	High Density Fixed Service
HDFSS	High Density Fixed Satellite Service
HF	High Frequency (3 to 30 MHz)
HDFS	Hadoop Distributed File System
ICAO	International Civil Aviation Organization
ILS	Instrument Landing System-aeronautical radio navigation system
IMO	International Maritime Organization
IMT	International Mobile Telecommunications
ISM	Industrial, Scientific and Medical. The use of radio for non-communication purposes such as microwave heating etc.
ITU	International Telecommunication Union.
Ka-band	Part of the frequency band between about 18 and 30 GHz Ku-band Part of the frequency band between about 11 and 14 GHz L-band Frequency band around 1.5 GHz
LEO	Low Earth Orbit satellite
LF	Low Frequency (30 to 300 kHz)
LMDS	Local Multipoint Distribution Services LPVS Low Power Video Surveillance
LSO	Lesotho
LTE	Long Term Evolution
MF	Medium Frequency (300 to 3000kHz) MPT Mobile Public Trunking
MSS	Mobile Satellite Service
MTX	Mobile Transmit
NGSO	Non-Geostationary Satellite Orbit
NINP	Non-Interference and non-protection basis. This means that the service in question must not cause interference to, nor claim protection from interference from, other services
OB	Outside Broadcast.
PAMR	Public Access Mobile Radio.
PMR	Private Mobile Radio.
PPDR	Public Protection and Disaster Relief

PSTN	Public Switched Telephone Network
RFID	Radio Frequency Identification systems
RLAN	Radio Local Area Network
RNSS	Radio Navigation Satellite Service
RR	Radio Regulation of the International Telecommunication Union
RTT	Road Transport Telematics
SAB	Services Ancillary to Broadcasting
SADC	Southern African Development Community
S-DAB	Satellite Digital Audio Broadcasting
SNG	Satellite News Gathering
SRDs	Short Range Devices, formerly referred to as Low Power Devices (LPDs).
SWZ	Eswatini
TZA	Tanzania
T-DAB	Terrestrial Digital Audio Broadcasting.
TDD	Time Division Duplex
UHF	Ultra High Frequency (300 to 3000 MHz)
VHF	Very High Frequency (30 to 300 MHz)
VLF	Very Low Frequency (3 to 30 kHz)
VOR	Very high frequency Omnidirectional Range (aeronautical radionavigation system).
VSAT	Very Small Aperture Terminal
WAS	Wireless Access Services
WARC	World Administrative Radio Conference. The last WARC was held in 1992. WARCs are now superseded by WRCs.
WLAN	Wireless Local Area Network
WRC	World Radiocommunication Conference.

3. Table of Frequency Allocations

3.1 Scope

The purpose of the frequency allocation table is to provide information on frequency allocation for the electromagnetic spectrum between 8.3 kHz and 100 GHz. For frequencies above 100 GHz, the prevailing ITU Radio Regulations in particular Article 5 (Table of Frequency Allocations) and all other references shall apply.

3.2 Frequency Allocation Table Structure

The Eswatini NFAP was developed taking into account international best practice in the development of frequency band plans and considering the particular usage and needs in Eswatini. In reading the NFAP the following meaning is attached to the four (4) columns:

a. Column 1: ITU Region 1 Allocations and Footnotes

This column is a replica of the frequency allocations for ITU Radio Region 1 as contained in the Radio Regulations (edition 2020). ITU footnotes relevant to Eswatini are included in this column. Frequency sub-bands are aligned with ITU Radio Regulations Article 5. The ITU philosophy for reflecting radio- communication services in terms of primary and secondary, placing of footnotes and using French alphabetical order therefore also applies.

The following conventions are also used:

- PRIMARY services are printed in capitals;
- SECONDARY services are printed in lower case;
- The order of listing in each frequency band does not establish priority (listed alphabetically according the French language);
- Where a footnote is printed next to a service that footnote applies only to that service;
- Where a footnote is printed at the bottom of a frequency band that footnote applies to more than one service or all services allocated to the particular frequency band;

For more detail on these and other principles refer to the ITU Radio Regulations (edition 2020).

b. Column 2: Eswatini allocation/s and Relevant ITU Footnotes

This column denotes those radiocommunication service or services selected from the ITU allocations, which are allocated for use in Eswatini. This column reflects all potentially applicable ITU listed services. In certain cases, there is no clear single use or the sub-band in question may not be widely used. This will apply, for example, to the science services and the higher frequency bands where applications within the ITU allocations are not yet evident or mainstream.
ITU footnotes indicate that Eswatini is reflected in the particular footnote. It should however be noted that non-listed ITU footnotes may indirectly still be relevant to Eswatini, for example, footnotes pertinent to neighbouring countries. All ITU footnotes should therefore be considered during normal international frequency management exercises.

c. Column 3: Utilization

This column shows the type of service allocated to the band in Eswatini, as well as indicating the current national usage of the frequency band. Where this column is empty it is implied that the particular frequency band or sub-band is not currently in use in Eswatini. Limitations in the use of a particular frequency band, according to the ITU Radio regulations, are also reflected in this column.

d. Additional Information

References to additional information are contained in this column, for example, references to relevant ITU Radio Regulations Articles and Appendices, ITU-R Recommendations, etc. Technical limits applicable to one of more service or application are also added in this column where needed. It should be noted that the intent was not to include all relevant ITU provisions and technical parameters in this column and the relevant ITU provisions should therefore continue to be consulted.

ITU Region 1 allocations and footnotes	Eswatini allocation/s and relevant ITU footnotes	Utilization	Additional information
Below 8.3 kHz (Not allocated) **5.53 5.54**	Below 8.3 kHz (Not allocated) **5.53 5.54**		Frequency bands below 8.3 kHz are not allocated in Swaziland
8.3–9 kHz METEOROLOGICAL AIDS 5.54A 5.54B 5.54C	**8.3–9 kHz** METEOROLOGICAL AIDS 5.54A 5.54B 5.54C		SRDs - see ITU-R Rec.SM.2153
9–11.3 kHz METEOROLOGICAL AIDS 5.54A RADIONAVIGATION	**9–11.3 kHz** METEOROLOGICAL AIDS 5.54A RADIONAVIGATION	Navigational Aids SRDs – inductive short-range radiocommunications (9 kHz-135 kHz)	The Electronic Communications (RCFS) Regulations, S68, 2016. SRDs - see ITU-R Rec.SM.2153
11.3-14 kHz RADIONAVIGATION	**11.3-14 kHz** RADIONAVIGATION	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) Navigational Aids	SRDs - see ITU-R Rec.SM.2153SRDs - see ITU-R Rec.SM.2153 The Electronic Communications (RCFS) Regulations, S68, 2016.
14-19.95 kHz FIXED MARITIME MOBILE5.57 5.55 5.56	**14-19.95 kHz** FIXED MARITIME MOBILE 5.57 5.56	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) Maritime mobile communications	SRDs - see ITU-R Rec.SM.2153 The Electronic Communications (RCFS) Regulations, S68, 2016.
19.95-20.05 kHz STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	**19.95-20.05 kHz** STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz)	The Electronic Communications (RCFS) Regulations, S68, 2016. SRDs - see ITU-R Rec.SM.2153
20.05-70 kHz FIXED MARITIME MOBILE 5.57 5.56 5.58	**20.05-70 kHz** FIXED MARITIME MOBILE 5.57 5.56	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) Maritime mobile communications	The Electronic Communications (RCFS) Regulations, S68, 2016. SRDs - see ITU-R Rec.SM.2153
70-72 kHz RADIONAVIGATION 5.60	**70-72 kHz** RADIONAVIGATION 5.60	SRDs – inductive short-range radio communications (9 kHz-135 kHz) Navigational Aids	The Electronic Communications (RCFS) Regulations, S68, 2016. SRDs - see ITU-R Rec.SM.2153
72-84 kHz FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60 5.56	**72-84 kHz** FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60 5.56	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) Maritime mobile communications Navigational Aids	The Electronic Communications (RCFS) Regulations, S68, 2016. SRDs - see ITU-R Rec.SM.2153

84-86 kHz RADIONAVIGATION 5.60	**84-86 kHz** RADIONAVIGATION 5.60	SRDs – inductive short-range Radiocommunications (9 kHz-135 kHz) Navigational Aids	SRDs - see ITU-R Rec.SM.2153 The Electronic Communications (RCFS) Regulations, S68, 2016.
86-90 kHz FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.56	**86-90 kHz** FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.56	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) Maritime mobile communications Navigational Aids	SRDs - see ITU-R Rec.SM.2153 The Electronic Communications (RCFS) Regulations, S68, 2016.
90-110 kHz RADIONAVIGATION 5.62 Fixed 5.64	**90-110 kHz** RADIONAVIGATION 5.62 Fixed 5.64	SRDs – inductive short-range radiocommunications (9 kHz -135 kHz) Navigational Aids	SRDs - see ITU-R Rec.SM.2153 The Electronic Communications (RCFS) Regulations, S68, 2016.
110-112 kHz FIXED MARITIME MOBILE RADIONAVIGATION 5.64	**110-112 kHz** FIXED MARITIME MOBILE RADIONAVIGATION 5.64	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) Maritime mobile communications Navigational Aids	SRDs - see ITU-R Rec.SM.2153 The Electronic Communications (RCFS) Regulations, S68, 2016.
112-115 kHz RADIONAVIGATION 5.60	**112-115 kHz** RADIONAVIGATION 5.60	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) Navigational Aids	SRDs - see ITU-R Rec.SM.2153 The Electronic Communications (RCFS) Regulations, S68, 2016.
115-117.6 kHz RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64 5.66	**115-117.6 kHz** RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) Navigational Aids Maritime mobile communications	SRDs - see ITU-R Rec.SM.2153 The Electronic Communications (RCFS) Regulations, S68, 2016.
117.6-126 kHz FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	**117.6-126 kHz** FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) Navigational Aids Maritime mobile communications	SRDs - see ITU-R Rec.SM.2153 The Electronic Communications (RCFS) Regulations, S68, 2016.

126-129 kHz RADIONAVIGATION 5.60	**126-129 kHz** RADIONAVIGATION 5.60	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) Navigational Aids	SRDs - see ITU-R Rec.SM.2153 The Electronic Communications (RCFS) Regulations, S68, 2016.
129-130 kHz FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	**129-130 kHz** FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) Navigational Aids Maritime mobile communications	SRDs - see ITU-R Rec.SM.2153 The Electronic Communications (RCFS) Regulations, S68, 2016.
130-135.7 kHz FIXED MARITIME MOBILE 5.64 5.67	**130-135.7 kHz** FIXED MARITIME MOBILE 5.64	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) Maritime mobile communications	SRDs - see ITU-R Rec.SM.2153 The Electronic Communications (RCFS) Regulations, S68, 2016.
135.7-137.8 kHz FIXED MARITIME MOBILE Amateur 5.67A 5.64 5.67 5.67B	**135.7-137.8 kHz** FIXED MARITIME MOBILE Amateur 5.67A 5.64	Maritime mobile communications Amateur	Amateur (135.7-137.8 kHz) services are limited to maximum radiated power of 1W (e.i.r.p).
137.8 - 148.5 kHz FIXED MARITIME MOBILE 5.64 5.67	**137.8 - 148.5 kHz** FIXED MARITIME MOBILE 5.64	Maritime mobile communications	
148.5 - 255 kHz BROADCASTING 5.68 5.69 5.70	**148.5 - 200 kHz** BROADCASTING 5.68	Broadcasting	Frequency assignment Plan (GE75) applies
	200 – 255 kHz AERONAUTICAL RADIONAVIGATION SERVICE 5.70		
255 - 283.5 kHz BROADCASTING AERONAUTICAL RADIONAVIGATION 5.70	**255 - 283.5 kHz** AERONAUTICAL RADIONAVIGATION 5.70		
283.5-315 kHz AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73 5.74	**283.5-315 kHz** AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73 5.74		

315-325 kHz AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radiobeacons) 5.73 5.75	**315-325 kHz** AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radiobeacons) 5.73		
325-405 kHz AERONAUTICAL RADIONAVIGATION	**325-405 kHz** AERONAUTICAL RADIONAVIGATION		
405-415 kHz RADIONAVIGATION 5.76	**405-415 kHz** RADIONAVIGATION 5.76	Navigational Aids	
415-435 kHz MARITIME MOBILE 5.79 AERONAUTICAL RADIONAVIGATION	**415-435 kHz** MARITIME MOBILE 5.79 AERONAUTICAL RADIONAVIGATION	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	**435-472 kHz** MARITIME MOBILE 5.79 Aeronautical radionavigation 5.77 5.82	Maritime mobile communications Coast Stations in the NAVTEX service on 490 kHz; Res.339 applies. Transmission of navigational and meteorological warnings and urgent info for ships (NBDP telegraphy). Articles 31 and 52 apply.	
472 – 479 kHz MARITIME MOBILE 5.79 Amateur 5. 80A Aeronautical Radionavigation 5.77 5.80 5.80B 5.82	**472 – 479 kHz** MARITIME MOBILE 5.79 Amateur 5. 80A Aeronautical Radionavigation 5.77 5.80 5.80B 5.82		
479-495 kHz MARITIME MOBILE 5.79 5.79A Aeronautical Radionavigation 5.77 5.82	**479-495 kHz** MARITIME MOBILE 5.79 5.79A Aeronautical Radionavigation 5.77 5.82		
495-505 kHz MARITIME MOBILE 5.82C	**495-505 kHz** MARITIME MOBILE 5.82C	Limited to radiotelegraphy; Articles 31 and 52 apply.	
505-526.5 kHz MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION	**505-526.5 kHz** MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION	Maritime mobile communications Coast Stations in the NAVTEX service on 518 kHz; Res.339 applies. Articles 31 and 52 apply. Under the MMS the use of the band 505-526.5 kHz is limited to radiotelegraphy.	

526.5-1 606.5 kHz BROADCASTING 5.87 5.87A	**526.5-535 kHz** BROADCASTING Mobile 5.87	Land and/or maritime mobile communications Inductive Loop Systems (740 – 8800 kHz)	The Electronic Communications (RCFS) Regulations, S68, 2016.
	535-1 606.5 kHz BROADCASTING 5.87	MW Sound broadcasting (535.5-1606.5 kHz); GE75 applies	
1 606.5 – 1 625 kHz FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	**1 606.5 – 1 625 kHz** FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	Maritime mobile communications Land mobile communications	
1 625 - 1 635 kHz RADIOLOCATION 5.93	**1 625 - 1 635 kHz** RADIOLOCATION 5.93	Navigational Aids	
1 635 - 1 800 kHz FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92 5.96	**1 635 - 1 800 kHz** FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	Maritime mobile communications Land mobile communications	
1 800 - 1810 kHz RADIOLOCATION 5.93	**1 800 - 1810 kHz** RADIOLOCATION 5.93	Navigational Aids	
1 810 - 1850 kHz AMATEUR 5.98 5.99 5.100	**1 810 - 1850 kHz** AMATEUR 5.98 5.100	Amateur communications	
1 850 - 2000 kHz FIXED MOBILE except aeronautical mobile 5.92 5.96 5.103	**1 850 - 2000 kHz** FIXED MOBILE except aeronautical mobile 5.92 5.103	Maritime and/or land mobile Communications	
2 000 - 2 025 kHz FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	**2 000 - 2 025 kHz** FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	Maritime and/or land mobile Communications	
2 025 - 2 045 kHz FIXED MOBILE except aeronautical mobile (R) Meteorological aids 5.104 5.92 5.103	**2 025 - 2 045 kHz** FIXED MOBILE except aeronautical mobile (R) Meteorological aids 5.104 5.92 5.103	Maritime and/or land mobile Communications	

2 045 - 2160 kHz FIXED MARITIME MOBILE LAND MOBILE 5.92	**2 045 - 2160 kHz** FIXED MARITIME MOBILE LAND MOBILE 5.92	Maritime and/or land mobile Communications	
2 160 - 2170 kHz RADIOLOCATION 5.93 5.107	**2 160 - 2170 kHz** RADIOLOCATION 5.93 5.107	Navigational aids	
2 170 - 2173.5 kHz MARITIME MOBILE	**2 170 - 2173.5 kHz** MARITIME MOBILE	Maritime mobile communications	
2 173.5 – 2 190.5 kHz MOBILE (distress and calling) 5.108 5.109 5.110 5.111	**2 173.5 – 2 190.5 kHz** MOBILE (distress and calling) 5.108 5.109 5.110 5.111	2 182 kHz is an international distress and calling frequency for radiotelephony. 2 187.5 kHz – DSC for distress and calling; Article 31 applies. 2 174.5 kHz – international distress frequency for NBDP telegraphy; Article 31 applies.	Articles 31 and 52 applies.
2 190.5 – 2 194 kHz MARITIME MOBILE	**2 190.5 – 2 194 kHz** MARITIME MOBILE	Maritime mobile communications	
2 194 - 2 300 kHz FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.112	**2 194 - 2 300 kHz** FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	Maritime and/or land mobile Communications	
2 300 - 2 498 kHz FIXED MOBILE except aeronautical mobile (R) BROADCASTIN 5.113 5.103	**2 300 - 2 498 kHz** FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.103	Maritime and/or land mobile Communications	
2 498 – 2 501 kHz STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	**2 498 – 2 501 kHz** STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)		
2 501 - 2 502 kHz STANDARD FREQUENCY AND TIME SIGNAL Space Research	**2 501 - 2 502 kHz** STANDARD FREQUENCY AND TIME SIGNAL Space Research		
2 502 – 2 625 kHz FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.114	**2 502 – 2 625 kHz** FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	Maritime and/or land mobile Communications	

2 625 – 2 650 kHz MARITIME MOBILE MARITIME RADIONAVIGATION 5.92	**2 625 – 2 650 kHz** MARITIME MOBILE MARITIME RADIONAVIGATION 5.92	Maritime mobile communications	
2 650 - 2 850 kHz FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	**2 650 - 2 850 kHz** FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	Maritime and/or land mobile Communications	
2 850 - 3 025 kHz AERONAUTICAL MOBILE (R) 5.111 5.115	**2 850 - 3 025 kHz** AERONAUTICAL MOBILE (R) 5.111 5.115	Aeronautical mobile (R) 3 023 kHz may be used under the MMS for search and rescue operations (see Article 31)	Appendix 27 Allotment Plan Applies
3 025 – 3 155 kHz AERONAUTICAL MOBILE (OR)	**3 025 – 3 155 kHz** AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	Appendix 26 Allotment Plan Applies
3 155 - 3200 kHz FIXED MOBILE except aeronautical mobile (R) 5.116 5.117	**3 155 - 3200 kHz** FIXED MOBILE except aeronautical mobile (R) 5.116	Maritime and/or land mobile communications SRDs: Wireless hearing Aides	Worldwide channel for low power hearing aids (3155-3195kHz). Additional channels may be assigned in the band 3155-3400 kHz; see also ITU-R Rec.[SRD]
3 200 – 3 230 kHz FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	**3 200 – 3 230 kHz** FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	Maritime and/or land mobile communications	Worldwide channel for low power hearing aids (3155-3195 kHz). Additional channels may be assigned in the band 3155-3400 kHz.
3 230 - 3 400 kHz FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116 5.118	**3 230 – 3 400 kHz** FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116	Maritime and/or land mobile communications	Worldwide channel for low power hearing aids (3155-3195 kHz). Additional channels may be assigned in the band 3155-3400 kHz.
3 400 - 3 500 kHz AERONAUTICAL MOBILE (R)	**3 400 - 3 500 kHz** AERONAUTICAL MOBILE (R)	Aeronautical mobile (R)	Appendix 27 Allotment Plan Applies
3 500 – 3 800 kHz AMATEUR FIXED MOBILE except aeronautical mobile 5.92	**3 500 – 3 800 kHz** AMATEUR FIXED MOBILE except aeronautical mobile 5.92	Amateur communications. Maritime and/or land mobile communications	
3 800 – 3 900 kHz FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	**3 800 – 3 900 kHz** FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	Aeronautical mobile (OR)	Appendix 26 Allotment Plan applies

3 900 – 3 950 kHz AERONAUTICAL MOBILE (OR) 5.123	**3 900 – 3 950 kHz** AERONAUTICAL MOBILE (OR) 5.123	Aeronautical mobile (OR)	Appendix 26 Allotment Plan applies
3 950 – 4 000 kHz FIXED BROADCASTING	**3 950 – 4 000 kHz** FIXED BROADCASTING		
4 000 – 4 063 kHz FIXED MARITIME MOBILE 5.127 5.126	**4 000 – 4 063 kHz** FIXED MARITIME MOBILE 5.127	Maritime mobile communications. Use of the band 4000 - 4063 kHz by the MMS is limited to ship stations using radiotelephony	
4 063 – 4 438 kHz MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128	**4 063 – 4 438 kHz** 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. Articles 31 and 52 apply. 4 207.5 kHz – DSC for distress and calling; Article 31 applies. 4 177.5 kHz – international distress frequency for NBDP telegraphy; Article 31 applies. 4 125 kHz – use of this frequency prescribed in Article 31. 4 209.5 kHz – exclusive for transmission by coast stations of meteorological and navigational warnings and urgent information to ships (NBDP). 4 210 kHz – maritime safety Information (MSI); App.17 applies.	ITU RR Appendix 17 Channelling Plan applies ITU RR Appendix 25 Allotment Plan applies
4 438 – 4 488 kHz FIXED MOBILE except aeronautical mobile (R) Radiolocation 5.132A 5.132B	**4 438 – 4 488 kHz** FIXED MOBILE except aeronautical mobile (R) Radiolocation 5.132A 5.132B	Maritime and/or land mobile communications	
4 488 - 4 650 kHz FIXED MOBILE except aeronautical mobile (R)	**4 488 - 4 650 kHz** FIXED MOBILE except aeronautical mobile (R)		
4 650 – 4 700 kHz AERONAUTICAL MOBILE (R)	**4 650 – 4 700 kHz** AERONAUTICAL MOBILE (R)	Aeronautical mobile	Appendix 27 Allotment Plan applies
4 700 – 4 750 kHz AERONAUTICAL MOBILE (OR)	**4 700 – 4 750 kHz** AERONAUTICAL MOBILE (OR)	Aeronautical mobile	Appendix 26 Allotment Plan applies

4 750 – 4 850 kHz FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 5.113	**4 750 – 4 850 kHz** FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 5.113	Aeronautical and/or land mobile Sound broadcasting	
4 850 – 4 995 kHz FIXED LAND MOBILE BROADCASTING 5.113	**4 850 – 4 995 kHz** FIXED LAND MOBILE BROADCASTING 5.113	Land mobile Sound broadcasting	
4 995 – 5 003 kHz STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	**4 995 – 5 003 kHz** STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)		
5 003 – 5 005 kHz STANDARD FREQUENCY AND TIME SIGNAL Space research	**5 003 – 5 005 kHz** STANDARD FREQUENCY AND TIME SIGNAL Space research		
5 005 – 5 060 kHz FIXED BROADCASTING 5.113	**5 005 – 5 060 kHz** FIXED BROADCASTING 5.113	Sound broadcasting	
5 060 – 5 250 kHz FIXED Mobile except aeronautical mobile 5.133	**5 060 – 5 250 kHz** FIXED Mobile except aeronautical mobile	SADC harmonised HF frequencies for cross-border mobile communications; see Annex G.	
5 250 – 5 275 kHz FIXED MOBILE except aeronautical mobile Radiolocation 5.132A 5.133A	**5 250 – 5 275 kHz** FIXED MOBILE except aeronautical mobile Radiolocation 5.132A	SADC harmonised HF frequencies for cross-border mobile communications; see Annex G.	
5 275 – 5 351.5 kHz FIXED MOBILE except aeronautical mobile	**5 275 – 5 351.5 kHz** FIXED MOBILE except aeronautical mobile	Aeronautical mobile	
5 351.5 - 5 366.5 kHz FIXED MOBILE except aeronautical mobile Amateur 5.133B	**5 351.5 – 5 366.5 kHz** FIXED MOBILE except aeronautical mobile Amateur 5.133B	Aeronautical mobile	
5 366.5 – 5 450 kHz FIXED MOBILE except aeronautical mobile	**5 366.5 – 5 450 kHz** FIXED MOBILE except aeronautical mobile	Aeronautical mobile	

5 450 – 5 480 kHz FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	**5 450 – 5 480 kHz** FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	Aeronautical mobile	Appendix 27 Allotment plan Applies
5 480 – 5 680 kHz AERONAUTICAL MOBILE (R) 5.111 5.115	**5 480 – 5 680 kHz** AERONAUTICAL MOBILE (R) 5.111 5.115	Aeronautical mobile	Appendix 27 Allotment Plan applies
5 680 – 5 730 kHz AERONAUTICAL MOBILE (OR) 5.111 5.115	**5 680 – 5 730 kHz** AERONAUTICAL MOBILE (OR) 5.111 5.115	5 680 kHz may be used under the MMS for search and rescue operations (see Article 31). 6 215 kHz – use of this frequency prescribed in Article 31. SRD applications (6 765 – 6 795 kHz)	Appendix 26 Allotment Plan applies. Common international SRD band; see ITU-R Rec.SM. [SRD]
5 730 – 5 900 kHz FIXED LAND MOBILE	**5 730 – 5 900 kHz** FIXED LAND MOBILE	Land mobile	
5 900 – 5 950 kHz BROADCASTING 5.134 5.136	**5 900 – 5 950 kHz** BROADCASTING 5.134 5.136	HF Sound Broadcasting	Article 12 Planning Procedures and Res.517 apply.
5 950 – 6 200 kHz BROADCASTING	**5 950 – 6 200 kHz** BROADCASTING	HF Sound Broadcasting	ITU RR Article 12 Planning Procedures applies
6 200 – 6 525 kHz MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137	**6 200 – 6 525 kHz** MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137	Maritime mobile 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	ITU RR Appendix 17 Channelling Plan applies ITU RR Appendix 25 Allotment Plan applies
6 525 - 6685 kHz AERONAUTICAL MOBILE (R)	**6 525 - 6685 kHz** AERONAUTICAL MOBILE (R)	Aeronautical mobile communications	Appendix 27 Allotment Plan applies
6 685 - 6 765 kHz AERONAUTICAL MOBILE (OR)	**6 685 - 6 765 kHz** AERONAUTICAL MOBILE (OR)	Aeronautical mobile communications	Appendix 26 Allotment Plan applies
6 765 - 7000 kHz FIXED MOBILE except aeronautical mobile (R) 5.138	**6 765 - 7000 kHz** FIXED MOBILE except aeronautical mobile (R) 5.138	Maritime and/or land mobile communications The band 6765-6795 kHz is designated for ISM applications (5.138).	
7 000 - 7100 kHz AMATEUR AMATEUR-SATELLITE 5.140 5.141 5.141A	**7 000 - 7100 kHz** AMATEUR AMATEUR-SATELLITE 5.140 5.141	Amateur communications Amateur-satellite Communications	

7 100-7 200 kHz AMATEUR 5.141A 5.141B	**7 100 - 7 200 kHz** AMATEUR	Amateur communications	
7 200 - 7300 kHz BROADCASTING	**7 200 - 7300 kHz** BROADCASTING	HF Sound Broadcasting	ITU RR Article 12 Planning Procedures applies
7 300 - 7400 kHz BROADCASTING 5.134 5.143 5.143A 5.143B 5.143C 5.143D	**7 300 - 7400 kHz** BROADCASTING 5.134 5.143 5.143B	HF Sound Broadcasting	Article 12 Planning Procedures and Res.517 apply.
7 400 - 7450 kHz BROADCASTING 5.143B 5.143C	**7 400 - 7450 kHz** BROADCASTING 5.143B	HF Sound Broadcasting	ITU RR Article 12 Planning Procedures applies
7 450 - 8100 kHz FIXED MOBILE except aeronautical mobile (R) 5.144	**7 450 - 8100 kHz** FIXED MOBILE except aeronautical mobile (R)	SADC harmonised HF frequencies for cross-border mobile communications; see Annex G.	
8 100 - 8195 kHz FIXED MARITIME MOBILE	**8 100 - 8195 kHz** FIXED MARITIME MOBILE	Maritime mobile communications	
8 195 - 8 815 kHz MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111	**8 195 - 8 815 kHz** MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111	Maritime mobile communications 8 414.5 kHz – DSC for distress and calling; Article 31 applies 8 376.5 kHz – international distress frequency for NBDP telegraphy; Article 31 applies. 8 416.5 kHz – maritime safety Information (MSI); App.17 applies.	ITU RR Appendix 17 Channelling Plan applies. ITU RR Appendix 25 Allotment Plan applies
8 815 – 8 965 kHz AERONAUTICAL MOBILE (R)	**8 815 – 8 965 kHz** AERONAUTICAL MOBILE (R)	Aeronautical mobile communications	Appendix 27 Allotment Plan Applies
8 965 - 9040 kHz AERONAUTICAL MOBILE (OR)	**8 965 - 9 040 kHz** AERONAUTICAL MOBILE (OR)	Aeronautical mobile communications	Appendix 26 Allotment Plan applies
9 040 - 9305 kHz FIXED	**9 040 - 9305 kHz** FIXED	Fixed	
9 305 - 9355 kHz FIXED Radiolocation 5.145A 5.145B	**9 305 - 9355 kHz** FIXED Radiolocation 5.145A 5.145B		
9 355 - 9400 kHz FIXED	**9 355 - 9400 kHz** FIXED	HF Sound Broadcasting	Article 12 Planning Procedures and Res.517 apply.
9 400 – 9500 kHz BROADCASTING 5.134	**9 400 – 9500 kHz** BROADCASTING 5.134	HF Sound Broadcasting	

5.146	5.146		
9 500 - 9900 kHz BROADCASTING 5.147	**9 500 - 9900 kHz** BROADCASTING 5.147	HF Sound Broadcasting	ITU RR Article 12 Planning Procedures applies
900 – 9 995 kHz FIXED	**9 900 – 9 995 kHz** FIXED	Fixed	
9 995 – 10 003 kHz STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 5.111	**9 995 – 10 003 kHz** STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 5.111		
10 003 – 10 005 kHz STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	**10 003 – 10 005 kHz** STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111		
10 005 – 10 100 kHz AERONAUTICAL MOBILE (R) 5.111	**10 005 – 10 100 kHz** AERONAUTICAL MOBILE (R) 5.111	Aeronautical mobile communications	Appendix 27 Allotment Plan applies
10 100 – 10 150 kHz FIXED Amateur	**10 100 – 10 150 kHz** FIXED Amateur	Fixed Amateur communications	
10 150 – 11 175 kHz FIXED Mobile except aeronautical mobile (R)	**10 150 – 11 175 kHz** FIXED Mobile except aeronautical mobile (R)	SADC harmonised HF frequencies for cross-border mobile communications; see Annex G.	
11 175 – 11 275 kHz AERONAUTICAL MOBILE (OR)	**11 175 – 11 275 kHz** AERONAUTICAL MOBILE (OR)	Aeronautical mobile communications	Appendix 26 Allotment Plan applies
11 275 – 11 400 kHz AERONAUTICAL MOBILE (R)	**11 275 – 11 400 kHz** AERONAUTICAL MOBILE (R)	Aeronautical mobile communications	Appendix 27 Allotment Plan applies
11 400 – 11 600 kHz FIXED	**11 400 – 11 600 kHz** FIXED	Fixed	
11 600 – 11 650 kHz BROADCASTING 5.134 5.146	**11 600 – 11 650 kHz** BROADCASTING 5.134 5.146	HF Sound Broadcasting	Article 12 Planning Procedures and Res.517 apply.
11 650 – 12 050 kHz BROADCASTING 5.147	**11 650 – 12 050 kHz** BROADCASTING 5.147	HF Sound Broadcasting	ITU RR Article 12 Planning Procedures applies
12 050 – 12 100 kHz BROADCASTING 5.134 5.146	**12 050 – 12 100 kHz** BROADCASTING 5.134 5.146	HF Sound Broadcasting	Article 12 Planning Procedures and Res.517 apply.

12 100 – 12 230 kHz FIXED	**12 100 – 12 230 kHz** FIXED	Fixed	
12 230 – 13 200 kHz MARITIME MOBILE 5.109 5.110 5.132 5.145	**12 230 – 13 200 kHz** MARITIME MOBILE 5.109 5.110 5.132 5.145	Maritime mobile communications 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
13 200 – 13 260 kHz AERONAUTICAL MOBILE (OR)	**13 200 – 13 260 kHz** AERONAUTICAL MOBILE(OR)	Aeronautical mobile communications	Appendix 26 Allotment Plan Applies
13 260 – 13 360 kHz AERONAUTICAL MOBILE (R)	**13 260 – 13 360 kHz** AERONAUTICAL MOBILE (R)	Aeronautical mobile communications	Appendix 27 Allotment Plan applies
13 360 – 13 410 kHz FIXED RADIO ASTRONOMY 5.149	**13 360 – 13 410 kHz** FIXED RADIO ASTRONOMY 5.149	Radio astronomy	
13 410 – 13 450 kHz FIXED Mobile except aeronautical mobile (R)	**13 410 – 13 450 kHz** 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)	Common international SRD band; see ITU-R Rec.SM.2153
13 450 – 13 550 kHz FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132A 5.149A	**13 450 – 13 550 kHz** FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132A 5.149A		
13 550 – 13 570 kHz FIXED Mobile except aeronautical mobile (R) 5.150	**13 550 – 13 570 kHz** FIXED Mobile except aeronautical mobile (R) 5.150		
13 570 – 13 600 kHz BROADCASTING 5.134 5.151	**13 570 – 13 600 kHz** BROADCASTING 5.134 5.151	HF Sound Broadcasting	Article 12 Planning Procedures and Res.517 apply.
13 600 – 13 800 kHz BROADCASTING	**13 600 – 13 800 kHz** BROADCASTING	HF Sound Broadcasting	ITU RR Article 12 Planning Procedures applies

13 800 - 13 870 kHz BROADCASTING 5.134 5.151	**13 800 - 13 870 kHz** BROADCASTING 5.134 5.151	HF Sound Broadcasting	Article 12 Planning Procedures and Res.517 apply.
13 870 – 14 000 kHz FIXED Mobile except aeronautical mobile (R)	**13 870 – 14 000 kHz** FIXED Mobile except aeronautical mobile (R)	Maritime and/or land mobile communications	
14 000 – 14 250 kHz AMATEUR AMATEUR-SATELLITE	**14 000 – 14 250 kHz** AMATEUR AMATEUR-SATELLITE	Amateur communications Amateur-satellite communications	
14 250 – 14 350 kHz AMATEUR 5.152	**14 250 – 14 350 kHz** AMATEUR	Amateur communications	
14 350 – 14 990 kHz FIXED Mobile except aeronautical mobile (R)	**14 350 – 14 990 kHz** FIXED Mobile except aeronautical mobile(R)	SADC harmonised HF frequencies for cross-border mobile communications; see Annex G.	
14 990 – 15 005 kHz STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 5.111	**14 990 – 15 005 kHz** STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 5.111		
15 005 – 15 010 kHz STANDARD FREQUENCY AND TIME SIGNAL Space research	**15 005 – 15 010 kHz** STANDARD FREQUENCY AND TIME SIGNAL Space research		
15 010 – 15 100 kHz AERONAUTICAL MOBILE (OR)	**15 010 – 15 100 kHz** AERONAUTICAL MOBILE (OR)	Aeronautical mobile communications	Appendix 26 Allotment Plan Applies
15 100 – 15 600 kHz BROADCASTING	**15 100 – 15 600 kHz** BROADCASTING	HF Sound Broadcasting	ITU RR Article 12 Planning Procedures applies
15 600 – 15 800 kHz BROADCASTING 5.134 5.146	**15 600 – 15 800 kHz** BROADCASTING 5.134 5.146	HF Sound Broadcasting	Article 12 Planning Procedures and Res.517 apply.
15 800 – 16 100 kHz FIXED 5.153	**15 800 – 16 100 kHz** FIXED 5.153	Fixed	
16 100 – 16 200 kHz FIXED Radiolocation 5.145A 5.145B	**16 100 – 16 200 kHz** FIXED Radiolocation 5.145A 5.145B		
16 200 – 16 360 kHz FIXED	**16 200 – 16 360 kHz** FIXED		

16 360 – 17 410 kHz MARITIME MOBILE 5.109 5.110 5.132 5.145	**16 360 – 17 410 kHz** MARITIME MOBILE 5.109 5.110 5.132 5.145	Maritime mobile 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
17 410 – 17 480 kHz FIXED	**17 410 – 17 480 kHz** FIXED	Fixed	
17 480 – 17 550 kHz BROADCASTING 5.134 5.146	**17 480 – 17 550 kHz** BROADCASTING 5.134 5.146	HF Sound Broadcasting	Article 12 Planning Procedures and Res.517 apply.
17 550 – 17 900 kHz BROADCASTING	**17 550 – 17 900 kHz** BROADCASTING	HF Sound Broadcasting	ITU RR Article 12 Planning Procedures applies
17 900 – 17 970 kHz AERONAUTICAL MOBILE (R)	**17 900 – 17 970 kHz** AERONAUTICAL MOBILE (R)	Aeronautical mobile communications	Appendix 27 Allotment Plan Applies
17 970 – 18 030 kHz AERONAUTICAL MOBILE (OR)	**17 970 – 18 030 kHz** AERONAUTICAL MOBILE (OR)	Aeronautical mobile communications	Appendix 26 Allotment Plan Applies
18 030 – 18 052 kHz FIXED	**18 030 – 18 052 kHz** FIXED	Fixed	
18 052 – 18 068 kHz FIXED Space research	**18 052 – 18 068 kHz** FIXED Space research	Fixed	
18 068 – 18 168 kHz AMATEUR AMATEUR-SATELLITE 5.154	**18 068 – 18 168 kHz** AMATEUR AMATEUR-SATELLITE	Amateur communications Amateur-satellite communications	
18 168 – 18 780 kHz FIXED Mobile except aeronautical mobile	**18 168 – 18 780 kHz** FIXED Mobile except aeronautical mobile	Maritime and/or land mobile communications	
18 780 – 18 900 kHz MARITIME MOBILE	**18 780 – 18 900 kHz** MARITIME MOBILE	Maritime mobile communications	ITU RR Appendix 17 Channelling Plan applies
18 900 – 19 020 kHz BROADCASTING 5.134 5.146	**18 900 – 19 020 kHz** BROADCASTING 5.134 5.146	HF Sound Broadcasting	Article 12 Planning Procedures and Res.517 apply.

19 020 – 19 680 kHz FIXED	**19 020 – 19 680 kHz** FIXED	Fixed	
19 680 – 19 800 kHz MARITIME MOBILE 5.132	**19 680 – 19 800 kHz** MARITIME MOBILE 5.132	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.
19 800 – 19 990 kHz FIXED	**19 800 – 19 990 kHz** FIXED	Fixed	
19 990 – 19 995 kHz STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	**19 990 – 19 995 kHz** STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111		
19 995 – 20 010 kHz STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 5.111	**19 995 – 20 010 kHz** STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 5.111		
20 010 – 21000 kHz FIXED Mobile	**20 010 – 21000 kHz** FIXED Mobile		
21 000 – 21 450 kHz AMATEUR AMATEUR-SATELLITE	**21 000 – 21 450 kHz** AMATEUR AMATEUR-SATELLITE	Amateur communications Amateur-satellite communications	
21 450-21 850 kHz BROADCASTING	**21 450-21 850 kHz** BROADCASTING	HF Sound Broadcasting	ITU RR Article 12 Planning Procedures applies
21 850 – 21 870 kHz FIXED 5.155A 5.155	**21 850 – 21 870 kHz** FIXED	Fixed	
21 870 – 21 924 kHz FIXED 5.155B	**21 870 – 21 924 kHz** FIXED 5.155B	Fixed	This band is used by the FS for services related to aircraft flight safety (5.155B)
21 924 – 22 000 kHz AERONAUTICAL MOBILE (R)	**21 924 – 22 000 kHz** AERONAUTICAL MOBILE (R)	Aeronautical mobile communications	Appendix 27 Allotment Plan applies

22 000 – 22 855 kHz MARITIME MOBILE 5.132 5.156	**22 000 – 22 855 kHz** MARITIME MOBILE 5.132	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 international frequency for transmission of MSI.
22 855 – 23 000 kHz FIXED 5.156	**22 855 – 23 000 kHz** FIXED	Fixed	
23 000 – 23 200 kHz FIXED Mobile except Aeronautical mobile (R) 5.156	**23 000 – 23 200 kHz** FIXED Mobile except Aeronautical mobile (R)		
23 200 – 23 350 kHz FIXED 5.156A AERONAUTICAL MOBILE (OR)	**23 200 – 23 350 kHz** FIXED 5.156A AERONAUTICAL MOBILE (OR)	Aeronautical mobile communications	The use of this band by the FS is limited to the provision of services related to aircraft flight safety (5.156A)
23 350 – 24 000 kHz FIXED MOBILE except aeronautical mobile 5.157	**23 350 – 24 000 kHz** FIXED MOBILE except aeronautical mobile 5.157		The use of this band by the MMS is limited to inter-ship radiotelegraphy (5.157).
24 000 – 24 450 kHz FIXED LAND MOBILE	**24 000 – 24 450 kHz** FIXED LAND MOBILE		
24 450 – 24 600 kHz FIXED LAND MOBILE Radiolocation 5.132A 5.158	**24 450 – 24 600 kHz** FIXED LAND MOBILE Radiolocation 5.132A 5.158		
24 600 - 24 890 kHz FIXED LAND MOBILE	**24 600 - 24 890 kHz** FIXED LAND MOBILE		
24 890 - 24 990 kHz AMATEUR AMATEUR - SATELLITE	**24 890 - 24 990 kHz** AMATEUR AMATEUR - SATELLITE		
24 990 – 25 005 kHz STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	**24 990 – 25 005 kHz** STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)		

25005 – 25 010 kHz STANDARD FREQUENCY AND TIME SIGNAL Space research	**25005 – 25 010 kHz** STANDARD FREQUENCY AND TIME SIGNAL Space research		
25 010 – 25 070 kHz FIXED MOBILE except aeronautical mobile	**25 010 – 25 070 kHz** FIXED MOBILE except aeronautical mobile		
25 070 – 25 210 kHz MARITIME MOBILE	**25 070 – 25 210 kHz** MARITIME MOBILE	Maritime mobile communications	ITU RR Appendix 17 Channelling Plan applies
25 210 – 25 550 kHz FIXED MOBILE except aeronautical mobile	**25 210 – 25 550 kHz** FIXED MOBILE except aeronautical mobile		
25 550 – 25 670 kHz RADIO ASTRONOMY 5.149	**25 550 – 25 670 kHz** RADIO ASTRONOMY 5.149	Radio astronomy	
25 670 – 26 100 kHz BROADCASTING	**25 670 – 26 100 kHz** BROADCASTING	HF Sound Broadcasting	ITU RR Article 12 Planning Procedures applies.
26 100 – 26 175 kHz MARITIME MOBILE 5.132	**26 100 – 26 175 kHz** MARITIME MOBILE 5.132	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.
26 175 – 26 200 kHz FIXED MOBILE except aeronautical mobile	**26 175 – 26 200 kHz** FIXED MOBILE except aeronautical mobile	Mobile systems (single frequency) CB Radio (26.96-27.410 MHz) ISM applications (26.975-27.283 MHz) SRD applications (26 957-27 283 kHz)	Common international SRD band; see ITU-R Rec.SM. [SRD]
26 200 – 26 350 kHz FIXED MOBILE except aeronautical mobile Radiolocation 5.132A 5.133A	**26 200 – 26 350 kHz** FIXED MOBILE except aeronautical mobile Radiolocation 5.132A		

26 350 – 27 500 kHz FIXED MOBILE except aeronautical mobile 5.150	**26 350 – 27 500 kHz** FIXED MOBILE except aeronautical mobile 5.150		
27.5-28 MHz METEOROLOGICAL AIDS FIXED MOBILE	**27.5-28 MHz** METEOROLOGICAL AIDS FIXED MOBILE		
28-29.7 MHz AMATEUR AMATEUR-SATELLITE	**28-29.7 MHz** AMATEUR AMATEUR-SATELLITE	Amateur communications Amateur-satellite communications	
29.7-30.005 MHz FIXED MOBILE	**29.7-30.005 MHz** FIXED MOBILE	Government use	
30.005 - 30.01 MHz SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	**30.005 - 30.01 MHz** SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	Government use	
30.01-37.5 MHz FIXED MOBILE	**30.01-37.5 MHz** MOBILE	Government use PMR	
37.5-38.25 MHz FIXED MOBILE Radio astronomy 5.149	**37.5-38.25 MHz** MOBILE Radio astronomy 5.149	PMR Radio astronomy	
38.25-39 MHz FIXED MOBILE	**38.25-39 MHz** MOBILE	PMR	
39-39.5 MHz FIXED MOBILE Radiolocation 5.132A 5.159	**39-39.5 MHz** FIXED MOBILE Radiolocation 5.132A		

39.5-39.986 MHz FIXED MOBILE	**39.5-39.986 MHz** FIXED MOBILE		
39.986 - 40.02 MHz FIXED MOBILE Space research	**39.986 - 40.02 MHz** FIXED MOBILE	PMR	
40.02 - 40.98 MHz FIXED MOBILE 5.150	**40.02 - 40.98 MHz** MOBILE 5.150	PMR ISM (40.66-40.70 MHz) SRD applications (40.66-40.77 MHz)	Common international SRD band; see ITU-R Rec.SM.2153
40.98-41.015 MHz FIXED MOBILE Space research 5.160 5.161	**40.98-41.015 MHz** MOBILE Space research	PMR	
41.015-42MHz FIXED MOBILE 5.160 5.161 5.161A	**41.015-42MHz** MOBILE	PMR	
42-42.5 MHz FIXED MOBILE Radiolocation 5.132A 5.160 5.161B	**42-42.5 MHz** FIXED MOBILE Radiolocation 5.132A		
42.5-44 MHz FIXED MOBILE 5.160 5.161 5.161A	**42.5-44 MHz** FIXED MOBILE 5.160 5.161 5.161A		
44 - 47 MHz FIXED MOBILE 5.162 5.162A	**44 - 47 MHz** FIXED MOBILE	PMR Meteor Burst (45.3-46.9 MHz) CT0 Cordless Telephony BTx (46.61-46.97 MHz)	Paired with 47.5-49.1MHz)
47-50 MHz BROADCASTING 5.162A 5.163 5.164 5.165	**47-50 MHz** LAND MOBILE 5.164	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 BROADCASTING Amateur 5.166A 5.166B 5.166C 5.166D 5.166E 5.169 5.169A 5.169B 5.162A 5.164 5.165	**50-54 MHz** AMATEUR 5.166A 5.166C 5.169 5.169*A* 5.164		
52-68 MHz BROADCASTING 5.162A 5.163 5.164 5.165 5.169 5.169A 5.169B 5.171	**54-68 MHz** MOBILE except aeronautical mobile 5.164 5.171	PMR	
68-74.8 MHz FIXED MOBILE except aeronautical mobile 5.149 5.175 5.177 5.179	**68-74.8 MHz** FIXED MOBILE except aeronautical mobile 5.149	PMR and/or PAMR	
74.8-75.2 MHz AERONAUTICAL RADIONAVIGATION 5.180 5.181	**74.8-75.2 MHz** AERONAUTICAL RADIONAVIGATION 5.180	Instrument Landing System (ILS) Marker beacons (75 MHz)	
75.2-87.5 MHz FIXED MOBILE except aeronautical mobile 5.175 5.179 5.187	**75.2-87.5 MHz** MOBILE except aeronautical mobile	PMR and/or PAMR	
87.5-100 MHz BROADCASTING 5.190	**87.5-100 MHz** BROADCASTING	FM Sound broadcasting (87.5-108 MHz)	Geneva agreement GE84
100-108 MHz BROADCASTING 5.192 5.194	**100-108 MHz** BROADCASTING		
108 - 117.975 MHz AERONAUTICAL RADIONAVIGATION 5.197 5.197A	**108 - 117.975 MHz** AERONAUTICAL RADIONAVIGATION 5.197A	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 108-112 MHz AM(R)S limited to ground based transmitters.
117.975-137 MHz	**117.975-137 MHz**	117.975-121.450 MHz Aeronautical mobile communications	Safety and regularity of flights

AERONAUTICAL MOBILE (R) 5.111 5.200 5.201 5.202	AERONAUTICAL MOBILE (R) 5.111 5.200 5.201	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	**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) Mobile except aeronautical mobile (R) 5.208		
137.025-137.175 MHz SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	**137.025-137.175 MHz** SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 Mobile except aeronautical mobile (R) 5.208		
137.175-137.825 MHz 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	**137.175-137.825 MHz** 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) Mobile except aeronautical mobile (R) 5.208	NOAA meteorology satellite (137.500 - 137.620 MHz)	
137.825-138 MHz SPACE OPERATION (space-to-Earth) METEOROLOGICALSATELLITE (space-to-Earth)	**137.825-138 MHz** SPACE OPERATION (space-to-Earth) METEOROLOGICALSATELLITE (space-to-Earth)		

SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208		
138-143.6 MHz AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	**138-143.6 MHz** MOBILE 5.212	PMR and/or PAMR	
143.6-143.65 MHz AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space-to-Earth) 5.211 5.212 5.214	**143.6-143.65 MHz** MOBILE 5.212	PMR and/or PAMR	
143.65-144 MHz AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	**143.65-144 MHz** MOBILE 5.212	PMR and/or PAMR	
144-146 MHz AMATEUR AMATEUR-SATELLITE 5.216	**144-146 MHz** AMATEUR AMATEUR-SATELLITE		
146-148 MHz FIXED MOBILE except aeronautical mobile (R)	**146-148 MHz** MOBILE except aeronautical mobile (R)	PMR and/or PAMR	
148-149.9 MHz FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.218A 5.219 5.221	**148-149.9 MHz** MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.218A 5.219 5.221	Mobile satellite communications (Little LEO)	For some Little LEO systems This band is supplemented by the band 149.9-150.05 MHz
149.9-150.05 MHz MOBILE-SATELLITE (Earth-to-space) 5.209 5.220	**149.9-150.05 MHz** MOBILE-SATELLITE (Earth-to-space) 5.209 5.220	Mobile satellite communications (Little LEO)	
150.05-153 MHz FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	**150.05-153 MHz** MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	PMR and/or PAMR Paging	
153-154 MHz FIXED MOBILE except aeronautical mobile (R) Meteorological Aids	**153-154 MHz** MOBILE except aeronautical mobile (R)	PMR and/or PAMR	

154-156.4875 MHz FIXED MOBILE except aeronautical mobile (R) 5.225A 5.226	**154-156.4875 MHz** FIXED MOBILE except aeronautical mobile (R) 5.225A 5.226	154-156 MHz PMR and/or PAMR	
		156.00-156.4875 MHz Maritime mobile communications (Ship stations) Land mobile in areas remote from coast	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.
156.4875 - 156.5625 MHz MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227	**156.4875 - 156.562 MHz** MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227	Maritime mobile distress, safety and calling frequency 156.525 MHz for maritime mobile VHF radiotelephone Service using DSC. The bands 156.4875-156.5125 MHz and 156.5375-156.5625 MHz may also be used for land mobile services while protecting the maritime mobile service.	ITU RR Articles 31 and 52 and Appendix 18 apply.
156.5625-156.7625 MHz FIXED MOBILE except aeronautical mobile (R) 5.226	**156.5625-156.7625 MHz** 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 (earth-to-space) 5.111 5.226 5.228	**156.7625-156.8375 MHz** MARITIME MOBILE (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 apply to the use of the frequency 156.8 MHz and this band
156.7875-156.8125 MHz MARITIME MOBILE (distress and calling) 5.111 5.226	**156.7875-156.8125 MHz** MARITIME MOBILE (distress and calling) 5.111 5.226		
156.8125-156.8375 MHz MARITIME MOBILE Mobile-satellite (Earth-to-space) 5.111 5.226 5.228	**156.8125-156.8375 MHz** MARITIME MOBILE Mobile-satellite (Earth- to-space) 5.111 5.226 5.228		

156.8375-157.1875 MHz FIXED MOBILE except aeronautical mobile 5.226	**156.8375-161.9375 MHz** MOBILE except aeronautical mobile 5.226	156.8375-157.45 MHz Maritime mobile communications (ship stations). Land mobile in areas remote from coast.	Paired with 161.5-162.0 MHz and single frequency applications; ITU-RR Articles 31 and 52 and Appendix 18 apply.
157.1875-157.3375 MHz FIXED MOBILE except aeronautical mobile Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228AC 5.226	**157.1875-157.3375 MHz** FIXED MOBILE except aeronautical mobile Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228AC 5.226	157.450-160.6 MHz PMR and/or PAMR	
		160.600-160.975 MHz Maritime mobile communications (Coast stations). Land mobile in areas remote from coast.	Paired with 156.025-156.350 MHz; ITU-RR Articles 31 and 52 and Appendix 18 apply.
157.3375-161.7875 MHz FIXED MOBILE except aeronautical mobile 5.226	**157.3375-161.7875 MHz** FIXED MOBILE except aeronautical mobile 5.226	160.975-161.475 MHz PMR and/or PAMR	Single frequency applications.
161.7875-161.9375 MHz FIXED MOBILE except aeronautical mobile Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228AC 5.226	**161.7875-161.9375 MHz** FIXED MOBILE except aeronautical mobile Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.226	161.475-162.050 MHz Maritime mobile communications (Coast stations) Land mobile in areas remote from coast Automatic Identification System (AIS) at 161.975 MHz and 162.025 MHz	Paired with 156.9-157.4 MHz; ITU RR Articles 31 and 52 and Appendix 18 apply.
		162.050-174 MHz PMR and/or PAMR	
161.9375-161.9625 MHz FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226	**161.9375-161.9625 MHz** FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226		
161.9625-161.9875 MHz FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B	**161.9625-161.9875 MHz** FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B		

161.9875-162.0125 MHz FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226 5.229	**161.9875-162.0125 MHz** FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226		
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	**162.0125-162.0375 MHz** FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B		
162.0375-174 MHz FIXED MOBILE except aeronautical mobile 5.226 5.229	**162.0375-174 MHz** FIXED MOBILE except aeronautical mobile 5.226		
174-223 MHz BROADCASTING 5.235 5.237 5.243	**174-223 MHz** BROADCASTING	TV Broadcasting (174-214 MHz) T-DAB (214-230 MHz)	TV Band III Migration from analogue to Digital in accordance with SADC time lines.
223-230 MHz BROADCASTING Fixed Mobile 5.243 5.246 5.247	**223-230 MHz** BROADCASTING	TV Broadcasting (174-214 MHz) T-DAB (214-230 MHz)	TV Band III Migration from analogue to Digital in accordance with SADC timelines.
230-235 MHz FIXED MOBILE 5.247 5.251 5.252	**230-235 MHz** BROADCASTING 5.252	TV Broadcasting	TV Band III (Analogue television to migrate according to SADC time lines)
235-267 MHz FIXED MOBILE 5.111 5.252 5.254 5.256 5.256A	**235-238 MHz** BROADCASTING 5.252 5.254	TV Broadcasting	TV Band III (Analogue television to migrate according to SADC time lines)
	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 (243MHz)	Band available for distress and Safety purposes.
		243.05-246.00 MHz Low-power devices	Low-power devices ancillary to the broadcasting service.

	246-254 MHz BROADCASTING 5.252 5.254	TV Broadcasting (channel 13) (246.18-254.18 MHz)	TV Band III (Analogue television to migrate according to SADC time lines)
	254-267 MHz MOBILE 5.254	PMR and/or PAMR	
267-272 MHz FIXED MOBILE Space operation (space-to-Earth) 5.254 5.257	**267-272 MHz** FIXED MOBILE 5.254 5.257	Government use	
272-273 MHz SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	**272-273 MHz** SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	Government use	
273-312 MHz FIXED MOBILE 5.254	**273-312 MHz** FIXED MOBILE 5.254	Government use	
312-315 MHz FIXED MOBILE Mobile-satellite (Earth-to-space) 5.254 5.255	**312-315 MHz** FIXED MOBILE 5.254 5.255	Government use	
315-322 MHz FIXED MOBILE 5.254	**315-322 MHz** FIXED MOBILE 5.254	Government use	
322-328.6 MHz FIXED MOBILE RADIO ASTRONOMY 5.149	**322-328.6 MHz** FIXED MOBILE RADIO ASTRONOMY 5.149	Government use	
328.6-335.4 MHz AERONAUTICAL RADIONAVIGATION 5.258 5.259	**328.6-335.4 MHz** AERONAUTICAL RADIONAVIGATION 5.258	Instrument Landing Systems (ILS) (glide path)	
335.4-387 MHz	**335.4-387 MHz**	335.4-336 MHz PMR and/or PAMR	

FIXED MOBILE 5.254	FIXED MOBILE 5.254	336-346 MHz Fixed Wireless Access	PTP/PTMP rural system; Paired with 356-366 MHz
		346.0-356.0 MHz PMR and/or PAMR	
		356.0-366.0 MHz Fixed Wireless Access	PTP/PTMP rural system; Paired with 336-346 MHz
		366.0-380.0 MHz PMR and/or PAMR	
		380.0-387.0 MHz PPDR	Paired with 390.0-397.0 MHz To be used mainly for digital systems.
387-390 MHz FIXED MOBILE Mobile-satellite (space-to -Earth) 5.208A 5.208B 5.254 5.255	**387-390 MHz** MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255	387.0-390.0 MHz PMR and/or PAMR	Paired with 397.0-399.9 MHz. To be used mainly for digital systems.
390-399.9 MHz FIXED MOBILE 5.254	**390-399.9 MHz** MOBILE 5.254	390.0-397.0 MHz PPDR	Paired with 380.0-387.0 MHz To be used mainly for digital systems.
		397.0-399.9 MHz PMR and/or PAMR	Paired with 387.0-390.0 MHz To be used mainly for digital systems.
399.9-400.05 MHz MOBILE-SATELLITE (Earth-to-space) 5.209 5.220 5.260A 5.260B	**399.9-400.05 MHz** MOBILE-SATELLITE (Earth-to-space) 5.209 5.220 5.260A 5.260B		
400.05-400.15 MHz STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 5.261 5.262	**400.05-400.15 MHz** STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 5.261		
400.15-401 MHz METEOROLOGICAL AIDS METEOROLOGICALSATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) 5.263 Space operation (space-to-Earth) 5.262 5.264	**400.15-401 MHz** METEOROLOGICAL AIDS METEOROLOGICALSATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) 5.263 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	**401-402 MHz** METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION SATELLITE (Earth-to-space) METEOROLOGICAL SATELLITE (Earth-to-space) 5.264A 5.264B		
402-403 MHz METEOROLOGICAL AIDS EARTH EXPLORATIONSATELLITE (Earth-to-space) METEOROLOGICAL SATELLITE (Earth-to-space) Fixed Mobile except aeronautical Mobile 5.264A 5.264B	**402-403 MHz** METEOROLOGICAL AIDS EARTH EXPLORATION SATELLITE (Earth-to-space) METEOROLOGICAL SATELLITE (Earth-to-space) 5.264A 5.264B	SRDs – ultra low power active medical implants	SRDs - see ITU-R Rec.SM.2153 and Rec. RS.1346
403-406 MHz METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile 5.265	**403-406 MHz** METEOROLOGICAL AIDS 5.265		
406-406.1 MHz MOBILE-SATELLITE (Earth-to-space) 5.265 5.266 5.267	**406-406.1 MHz** MOBILE-SATELLITE (Earth-to-space) 5.265 5.266 5.267	Low power satellite EPIRBs (distress and safety purposes)	ITU RR Articles 32 and 34 and Appendix 15 applies
406.1-410 MHz FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.265	**406.1-410 MHz** MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.265	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	**410-420 MHz** MOBILE except aeronautical mobile	PMR and/or PAMR PPDR	The use of this band for PPDR to be studied.

420-430 MHz FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271	**420-430 MHz** MOBILE except aeronautical mobile	PMR and/or PAMR PPDR	The use of this band for PPDR to be studied.
430-432 MHz AMATEUR RADIOLOCATION 5.271 5.272 5.273 5.274 5.275 5.276 5.277	**430-432 MHz** AMATEUR RADIOLOCATION	Amateur	
432-438 MHz AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138 5.271 5.272 5.276 5.277 5.280 5.281 5.282	**432-438 MHz** AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138	Amateur (432-438 MHz) Amateur-satellite (435-438 MHz) ISM (433.0-434.79 MHz)	Conditions for amateur satellite Service is given in 5.282
438-440 MHz AMATEUR RADIOLOCATION 5.271 5.273 5.274 5.275 5.276 5.277 5.283	**438-440 MHz** AMATEUR RADIOLOCATION	Amateur	
440-450 MHz FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271 5.284 5.285 5.286	**440-450 MHz** FIXED MOBILE except aeronautical Mobile 5.286	PMR and/or PAMR PPDR PMR446 (446-446.1 MHz) FIXED (telemetry, dual frequency alarm systems)	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	**450-455 MHz** FIXED MOBILE 5.286AA 5.286 5.286A	Fixed links (PTP) IMT (450-470 MHz) PMR and/or PAMR	This band is currently used for a variety of fixed and mobile systems in the various SADC countries. This band is also identified for IMT (Res.224 applies).
455-456 MHz FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E	**455-456 MHz** FIXED MOBILE 5.286AA 5.209 5.286A		
456-459 MHz FIXED MOBILE 5.286AA 5.271 5.287 5.288	**456-459 MHz** FIXED MOBILE 5.286AA 5.287 5.288		

459-460 MHz FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E	**459-460 MHz** FIXED MOBILE 5.286AA 5.209 5.286A		
460-470 MHz FIXED MOBILE 5.286AA Meteorological-satellite (space-to-Earth) 5.287 5.288 5.289 5.290	**460-470 MHz** FIXED MOBILE 5.286AA Meteorological-satellite (space-to-Earth) 5.287 5.289		
470-694 MHz BROADCASTING 5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.312	**470-694 MHz** BROADCASTING 5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.312	DTT broadcasting (470-694 MHz)	Band IV/V Analogue television to migrate to digital television in line with SADC time lines
694-790 MHz MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING 5.300 5.312	**694-790 MHz** MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING 5.300 5.312	IMT	IMT Radio Frequency Channel arrangement according to ITU-R M.1036
790-862 MHz FIXED MOBILE except aeronautical mobile 5.316B 5.317A BROADCASTING 5.312 5.319	**790-862 MHz** FIXED MOBILE except aeronautical mobile 5.316B 5.317A BROADCASTING 5.319	IMT	Res. 224 (REV. WRC-19) applies IMT Radio Frequency Channel arrangement according to ITU-R M.1036
862-890 MHz FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.319 5.323	**862-890 MHz** MOBILE except aeronautical mobile 5.317A	862-876 MHz IMT	This band is paired with 824-849 MHz
		876-880 MHz IMT PMR and/or PAMR	This band is paired with 921-925 MHz
890-942 MHz FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 Radiolocation	**890-942 MHz** MOBILE except Aeronautical mobile 5.317A	880-915 MHz IMT	Paired with 925-960 MHz
		915-921 MHz PMR and/or PMR	

5.323		921-925 MHz IMT PMR and/or PAMR	Paired with 876-880 MHz
942-960 MHz FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.323	**942-960 MHz** MOBILE except aeronautical mobile 5.317A	925-960 MHz IMT	Paired with 880-915 MHz
960-1 164 MHz AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL RADIONAVIGATION 5.328 5.328AA	**960-1 164 MHz** AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL RADIONAVIGATION 5.328 5.328AA	Distance measuring equipment Secondary surveillance radar	Res. 425 (WRC-19) applies (global flight tracking for civil aviation)
1 164-1 215 MHz AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATIONSATELLITE (space-to-Earth) (space-to-space) 5.328B 5.328A	**1 164-1 215 MHz** AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.328A	Galileo (1164-1214 MHz) GLONASS (1190.3-1213.8 MHz)	
1 215-1 240 MHz EARTH EXPLORATION SATELLITE (active) RADIOLOCATION RADIONAVIGATIONSATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332	**1 215-1 240 MHz** EARTH EXPLORATION SATELLITE (active) RADIOLOCATION RADIONAVIGATION SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332	GLONASS (1237.8-1253.8 MHz) GPS (1215.6-1239.6 MHz)	
1 240-1 300 MHz EARTH EXPLORATIONSATELLITE (active) RADIOLOCATION RADIONAVIGATIONSATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) Amateur 5.282 5.330 5.331 5.332 5.335 5.335A	**1 240-1 300 MHz** EARTH EXPLORATION SATELLITE (active) RADIOLOCATION RADIONAVIGATION SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) Amateur 5.330 5.331 5.282 5.332 5.335A	GLONASS (1237.8-1253.8 MHz) Galileo (1260-1300 MHz)	

1 300-1 350 MHz AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION SATELLITE (Earth-to-space) 5.149 5.337A	**1 300-1 350 MHz** AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION SATELLITE (Earth-to-space) 5.149 5.337A		
1 350-1 400 MHz FIXED MOBILE RADIOLOCATION 5.149 5.338 5.338A 5.339	**1 350-1 400 MHz** FIXED RADIOLOCATION 5.149 5.338A 5.339	1 350-1 375 MHz Fixed links (duplex)	Paired with 1492-1517 MHz; CEPT T/R 13-01 refers.
		1 375-1 400 MHz Fixed links (duplex)	Paired with 1427-1452 MHz; CEPT T/R 13-01 refers.
1 400-1 427 MHz EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	**1 400-1 427 MHz** EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341		
1 427-1 429 MHz SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.341A 5.341B 5.341C 5.338A 5.341	**1 427-1 429 MHz** SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.341A 5.341B 5.341C 5.338A 5.341	1 427-1 452 MHz Fixed links (duplex)	Paired with 1375-1400 MHz; CEPT T/R 13-01 refers.
1 429-1 452 MHz FIXED MOBILE except aeronautical mobile 5.341A 5.338A 5.341 5.342	**1 429-1 452 MHz** FIXED MOBILE except Aeronautical mobile 5.341A 5.338A 5.341		
1 452-1 492 MHz FIXED MOBILE except aeronautical mobile 5.346 BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5.342 5.345	**1 452-1 492 MHz** FIXED MOBILE except Aeronautical mobile 5.346 BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5.345	1 452-1 467 MHz Terrestrial Digital Audio Broadcasting (T-DAB) IMT Res. 223 (Rev.WRC-15)	
		1 467-1 492 MHz Satellite Digital Audio Broadcasting (S-DAB) IMT Res. 223 (Rev.WRC-15)	
1 492-1 518 MHz FIXED MOBILE except aeronautical mobile 5.341A 5.341 5.342	**1 492-1 518 MHz** FIXED MOBILE except Aeronautical mobile 5.341A 5.341	1 492-1 517 MHz Fixed links (dual frequency) IMT Res. 223 (Rev.WRC-15)	Paired with 1350-1375 MHz; CEPT T/R 13-01 refers.
		1 517-1 518 MHz Fixed links (single frequency) IMT Res. 223 (Rev.WRC-15)	

1 518-1 525 MHz FIXED MOBILE except Aeronautical mobile MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A 5.341 5.342	**1 518-1 525 MHz** FIXED MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A 5.341	1518-1525 MHz Fixed links (single frequency)	The band 1518-1559 MHz is Identified for satellite component of IMT; Res.225 applies.
1 525-1 530 MHz SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A Earth exploration-satellite Mobile except aeronautical mobile 5.349 5.341 5.342 5.350 5.351 5.352A 5.354	**1 525-1 530 MHz** SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.341 5.351 5.354 5.352A		The band 1518-1559 MHz is Identified for satellite component of IMT; Res.225 applies.
1 530-1 535 MHz SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A Earth exploration-satellite Fixed Mobile except aeronautical mobile 5.341 5.342 5.351 5.354	**1 530-1 535 MHz** SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A 5.341 5.351 5.354		The band 1518-1559 MHz is Identified 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.
1 535-1 559 MHz MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.341 5.351 5.353A 5.354 5.355 5.356 5.357 5.357A 5.359 5.362A	**1 535-1 559 MHz** MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.341 5.351 5.353A 5.354 5.356 5.357 5.357A 5.359		The band 1518-1559 MHz is Identified 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.
1 559-1 610 MHz AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.208B 5.328B 5.329A 5.341	**1 559-1 610 MHz** 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)	

1 610-1 610.6 MHz MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.371 5.372	**1 610-1 610.6 MHz** MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341 5.359 5.364 5.366 5.367 5.368 5.369 5.371 5.372	GLONASS (1592.9-1610.5 MHz)	The band 1610-1645.5 MHz is Identified for satellite component of IMT; Res.225 applies. This band is designated worldwide for the MSS. Paired with 2483.5-2484.1 MHz for some systems.
1 610.6-1 613.8 MHz MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.371 5.372	**1 610.6-1 613.8 MHz** MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.359 5.364 5.366 5.367 5.368 5.369 5.371 5.372		The band 1610-1645.5 MHz is Identified for satellite component of IMT; Res.225 applies. This band is designated worldwide for the MSS. Paired with 2484.1-2487.3 MHz for some systems.
1 613.8-1 626.5 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	**1 613.8-1 626.5 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		The band 1610-1645.5 MHz is Identified for satellite component of IMT; Res.225 applies. This band is designated worldwide for the MSS Paired with 1593-1594 MHz for aeronautical public correspondence
1 626.5-1 660 MHz MOBILE-SATELLITE (Earth-to-space) 5.351A 5.341 5.351 5.353A 5.354 5.355 5.357A 5.359 5.362A 5.374 5.375 5.376	**1 626.5-1 660 MHz** MOBILE-SATELLITE (Earth-to-space) 5.351A 5.341 5.351 5.353A 5.354 5.357A 5.359 5.374 5.375 5.376		The bands 1610-1645.5 MHz and 1646.5-1660.5 MHz are identified 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.
1 660-1 660.5 MHz MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.362A 5.376A	**1 660-1 660.5 MHz** MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.376A		The bands 1610-1645.5 MHz and 1646.5-1660.5 MHz are identified for satellite component of IMT; Res.225 applies.

1 660.5-1 668 MHz RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A	**1 660.5-1 668 MHz** RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.341 5.379A		
1 668-1 668.4 MHz MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A	**1 668-1 668.4 MHz** MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.341 5.379 5.379A		The band 1668-1675 MHz is Identified for satellite component of IMT; Res.225 applies.
1 668.4-1 670 MHz METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY 5.149 5.341 5.379D 5.379E	**1 668.4-1 670 MHz** METEOROLOGICAL AIDS FIXED 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 Identified for satellite component of IMT; Res.225 applies
1 670-1 675 MHz METEOROLOGICAL AIDS FIXED METEOROLOGICAL SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.341 5.379D 5.379E 5.380A	**1 670-1 675 MHz** METEOROLOGICAL AIDS FIXED METEOROLOGICAL SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.341 5.379D 5.379E 5.380A		The band 1668-1675 MHz is Identified for satellite component of IMT; Res.225 applies
1 675-1 690 MHz METEOROLOGICAL AIDS FIXED METEOROLOGICAL SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341	**1 675-1 690 MHz** METEOROLOGICAL AIDS FIXED METEOROLOGICAL SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341		

1 690-1 700 MHz METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 5.289 5.341 5.382	**1 690-1 700 MHz** METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 5.289 5.341 5.382		
1 700-1 710 MHz FIXED METEOROLOGICAL SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341	**1 700-1 710 MHz** FIXED METEOROLOGICAL SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341	Fixed links (single frequency)	
1 710-1 930 MHz FIXED MOBILE 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.386 5.387 5.388	**1 710-1 930 MHz** FIXED MOBILE 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.388	1 710-1 785 MHz IMT	Paired with 1805-1880 MHz.
		1785-1805 MHz BFWA	
		1 805-1 880 MHz IMT	Paired with 1710-1785 MHz.
		1 880-1 900 MHz FWA Cordless telephone	
		1 900-1 920 MHz FWA IMT (terrestrial)	
		1 920-1 980 MHz IMT (terrestrial)	Paired with 2110-2170 MHz
1 930-1 970 MHz FIXED MOBILE 5.388A 5.388B 5.388	**1 930-1 970 MHz** MOBILE 5.388A 5.388B 5.388		
1 970-1 980 MHz FIXED MOBILE 5.388A 5.388B 5.388	**1 970-1 980 MHz** MOBILE 5.388A 5.388B 5.388		
1 980-2 010 MHz FIXED MOBILE MOBILE-SATELLITE(Earth-to-space) 5.351A 5.388 5.389A 5.389B 5.389F	**1 980-2 010 MHz** MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B	IMT (satellite) (1980-2010 MHz)	Paired with 2170 - 2200 MHz. The development of satellites for IMT services to be monitored.

2 010-2 025 MHz FIXED MOBILE 5.388A 5.388B 5.388	**2 010-2 025 MHz** MOBILE 5.388A 5.388B 5.388	IMT (terrestrial) (2010-2025 MHz)	TDD
2 025-2 110 MHz SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to- space) (space-to-space) 5.392	**2 025-2 110 MHz** SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION SATELLITE (Earth-to-space) (space-to-space) FIXED SPACE RESEARCH (Earth-to-space) (space-to-space) 5.392	Fixed links (2025-2110 MHz paired with 2200-2285 MHz)	Radio Frequency channel arrangement according to ITUR F.1098.
2 110-2 120 MHz FIXED MOBILE 5.388A5.388B SPACE RESEARCH (deep space) (Earth-to-space) 5.388	**2 110-2 120 MHz** MOBILE 5.388A 5.388B SPACE RESEARCH (deep space) (Earth-to-space) 5.388	IMT (terrestrial) (2110-2170 MHz)	Paired with 1920-1980 MHz
2 120-2 160 MHz FIXED MOBILE 5.388A 5.388B 5.388	**2 120-2 160 MHz** MOBILE 5.388A 5.388B 5.388		
2 160-2 170 MHz FIXED MOBILE 5.388A 5.388B 5.388	**2 160-2 170 MHz** MOBILE 5.388A 5.388B 5.388		
2 170-2 200 MHz FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A 5.389F	**2 170-2 200 MHz** MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A 5.389F	IMT (satellite) (2170-2200 MHz)	Paired with 1980-2010 MHz. The development of satellites for IMT services to be monitored.
2 200-2 290 MHz SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION SATELLITE (space-to-Earth) (space-to-space)	**2 200-2 290 MHz** SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION SATELLITE (space-to-Earth) (space-to-space)	Fixed links (2025-2110 MHz paired with 2200-2285 MHz)	Radio Frequency channel Arrangement according to ITUR F.1098.

FIXED MOBILE 5.391 SPACE RESEARCH (space-to-Earth) (space-to-space) 5.392	FIXED SPACE RESEARCH (space-to-Earth) (space-to-space) 5.392	BFWA (2 285-2 300 MHz)	
2 290-2 300 MHz FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	**2 290-2 300 MHz** FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	BFWA (2 285-2 300 MHz)	
2 300-2 450 MHz FIXED MOBILE 5.384A Amateur Radiolocation 5.150 5.282 5.395	**2 300-2 450 MHz** FIXED MOBILE 5.384A Amateur Radiolocation 5.150 5.282	2300-2400 MHz Fixed links PTP/PTMP IMT (TDD)BFWA	Fixed paired with 2400-2500 MHz This band has been identified for IMT.
		2400-2500 MHz Fixed links PTP/PTMP The band 2 400-2500 MHz is designated for ISM applications (5.150). SRD applications (2 400-2 483.5 MHz)	FS paired with 2300-2400 MHz. The band 2483.5-2500 MHz is identified for satellite component of IMT; Res.225 applies. Common international SRD band; see ITU-R Rec.SM.[SRD]
2 450-2 483.5 MHz FIXED MOBILE Radiolocation 5.150	**2 450-2 483.5 MHz** FIXED MOBILE Radiolocation 5.150	2400-2500 MHz Fixed links PTP/PTMP The band 2 400-2500 MHz is designated for ISM applications (5.150). SRD applications (2 400-2 483.5 MHz)	FS paired with 2300-2400 MHz. The band 2483.5-2500 MHz is identified for satellite component of IMT; Res.225 applies. Common international SRD band; see ITU-R Rec.SM.[SRD]
2 483.5-2 500 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	**2 483.5-2 500 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		
2 500-2 520 MHz FIXED 5.410 MOBILE except aeronautical mobile 5.384A 5.412	**2 500-2 520 MHz** FIXED MOBILE except aeronautical mobile 5.384A	BFWA (2500-2690 MHz) IMT (2500-2690 MHz)	The band 2 500-2 690 MHz is also used for BFWA in some SADC countries.

2 520-2 655 MHz FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.339 5.412 5.418B 5.418C	**2 520-2 655 MHz** FIXED MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.412 5.418B 5.418C 5.339		
2 655-2 670 MHz FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.208B 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	**2 655-2 670 MHz** FIXED MOBILE except aeronautical mobile 5.384A 5.149 5.412		
2 670-2 690 MHz FIXED 5.410 MOBILE except aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	**2 670-2 690 MHz** FIXED MOBILE except Aeronautical mobile 5.384A 5.149 5.412		
2 690-2 700 MHz EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.422	**2 690-2 700 MHz** EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.422		
2 700-2 900 MHz AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424	**2 700-2 900 MHz** AERONAUTICAL RADIONAVIGATION 5.337 5.423		
2 900-3 100 MHz RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427	**2 900-3 100 MHz** RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427		
3 100-3 300 MHz RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.149 5.428	**3 100-3 300 MHz** RADIOLOCATION 5.149	Government use	

3 300-3 400 MHz RADIOLOCATION 5.149 5.429 5.429A 5.429B 5.430	**3 300-3 400 MHz** RADIOLOCATION 5.149 5.429 5.429B 5.429A	IMT Res. 223 (Rev.WRC- 19)	IMT Radio Frequency Channel arrangement according to ITU- R M.1036
3 400 - 3600 MHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.430A Radiolocation 5.431	**3 400 -3 600 MHz** FIXED MOBILE except aeronautical mobile 5.430A Radiolocation	BFWA IMT (3400-3600 MHz)	The band 3 400-3 600 MHz is used for BFWA in some SADC countries, IMT Radio Frequency Channel arrangement according to ITU- R M.1036
3 600 - 4200 MHz FIXED FIXED-SATELLITE (space-to-Earth) Mobile	**3 600 - 4200 MHz** FIXED FIXED-SATELLITE (space-to-Earth)	Fixed services (PTP) (3600-4200 MHz) Fixed-satellite (space-to-Earth) (PTP/VSAT/SNG) (3600-4200 MHz) Broadband Fixed Wireless Access (BFWA) (3600-3800 MHz)	The sub-band 3 600-3 800 MHz could be used for BFWA where frequency sharing with FS PTP and/or FSS is feasible. The channelling arrangement for PTP links in this band is based on ITU-R Recommendation F.635 Annex 1. The sub-band 3600-4 200 MHz is used for medium and high capacity PTP links and FSS. In the band 3 600-3 800 MHz, BFWA, FS PTP and FSS applications will have to operate on coordinated basis. However, considering the difficulty in coordinating ubiquitous user terminals used for BFWA and VSAT, it is proposed that VSAT systems be migrated to the Ku-band.
4 200 -4 400 MHz AERONAUTICAL MOBILE(R) 5.436 AERONAUTICAL RADIONAVIGATION 5.438 5.437 5.439 5.440	**4 200-4 400 MHz** AERONAUTICAL MOBILE(R) 5.436 AERONAUTICAL RADIONAVIGATION 5.438 5.440	Radio altimeters on board Aircraft	
4 400 -4 500 MHz FIXED MOBILE 5.440A	**4 400 - 4500 MHz** FIXED MOBILE	Government use	
4 500 - 4800 MHz FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE 5.440A	**4 500 - 4800 MHz** FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE	Government use	The band 4 500-4 800 MHz is part of the APP30B Plan (FSS space-to-Earth). Refer to Annex B.

4 800 - 4990 MHz FIXED MOBILE 5.440A 5.441A 5.441B 5.442 Radio astronomy 5.149 5.339 5.443	**4 800 - 4990 MHz** FIXED MOBILE 5.442 5.441B Radio Astronomy 5.149 5.339	Government use	Band identified for IMT
4 990 - 5000 MHz FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) 5.149	**4 990 - 5000 MHz** FIXED MOBILE except Aeronautical Mobile RADIO ASTRONOMY Space Research (passive) 5.149	Government use	
5 000 - 5010 MHz AERONAUTICAL MOBILESATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-space)	**5 000-5 010 MHz** AERONAUTICAL MOBILESATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-space)		
5 010 - 5030 MHz AERONAUTICAL MOBILE-SATELLITE(R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.443B	**5 010-5 030 MHz** AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.443B		
5 030-5 091 MHz AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION 5.444	**5 030 - 5091 MHz** AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION 5.444	Microwave Landing systems.	
5 091 - 5150 MHz FIXED SATELLITE (Earth-to- Space) 5.444A AERONAUTICAL MOBILE 5.444B AERONAUTICAL MOBILE SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION 5.444	**5 091 - 5150 MHz** FIXED SATELLITE (Earth-to-Space) 5.444A AERONAUTICAL MOBILE 5.444B AERONAUTICAL MOBILE SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION 5.444		

5 150 - 5250 MHz AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B 5.446 5.446C 5.446D 5.447 5.447B 5.447C	**5 150 - 5250 MHz** AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B 5.446 5.446C 5.447B 5.447C	Wireless Access Systems (WAS)/RLAN	Resolution 229 (Rev.WRC-19) applies
5 250 - 5255 MHz EARTH EXPLORATIONS ATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D MOBILE except aeronautical mobile 5.446A 5.447F 5.447E 5.448 5.448A	**5 250 - 5255 MHz** EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D MOBILE except aeronautical mobile 5.446A 5.447F 5.448A	Wireless Access Systems (WAS)/RLAN	Resolution 229 (Rev.WRC-19) applies
5 255 - 5350 MHz EARTH EXPLORATIONSATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) MOBILE except aeronautical mobile 5.446A 5.447F 5.447E 5.448 5.448A	**5 255 - 5350 MHz** EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) MOBILE except aeronautical mobile 5.446A 5.447F 5.448A	Wireless Access Systems (WAS)/RLAN	Resolution 229 (Rev.WRC-19) applies
5 350 - 5460 MHz EARTH-EXPLORATIONSATELLITE (active) 5.448B SPACE RESEARCH (active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D	**5 350 - 5460 MHz** EARTH EXPLORATION SATELLITE (active) 5.448B SPACE RESEARCH (active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D	Ground based and airborne weather Radar	
5 460 - 5470 MHz RADIONAVIGATION 5.449 EARTH EXPLORATIONSATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.448D 5.448B	**5 460 - 5470 MHz** RADIONAVIGATION 5.449 EARTH EXPLORATION SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.448D 5.448B		

5 470 - 5570 MHz MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A EARTH EXPLORATIONSATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.450B 5.448B 5.450 5.451	**5 470 - 5570 MHz** MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A EARTH EXPLORATIONSATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.450B 5.448B	Wireless Access Systems (WAS)/RLAN	Resolution 229 (Rev.WRC-19) applies
5 570 - 5650 MHz MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B 5.450 5.451 5.452	**5 570 - 5650 MHz** MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B 5.452	WirelessAccess Systems (WAS)/RLAN Ground-based meteorological radars (5600-5650 MHz)	Resolution 229 (Rev.WRC-19) applies
5 650 - 5725 MHz RADIOLOCATION MOBILE except aeronautical mobile 5.446A 5.450A Amateur Space research (deep space) 5.282 5.451 5.453 5.454 5.455	**5 650 - 5725 MHz** RADIOLOCATION MOBILE except aeronautical mobile 5.446A 5.450A Amateur Space Research (deep space) 5.282 5.453 SADC18	Wireless Access Systems (WAS)/RLAN	Resolution 229 (Rev.WRC-19) applies
5 725 – 5 830 MHz FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455	**5 725 – 5 830 MHz** FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455 SADC18	Wireless Access Systems (WAS)/RLAN BFWA (5725-5850 MHz) ISM (5725-5875 MHz) RTTT (Road Transport and Traffic Telematics) (5795-5815 MHz) SRD applications (5 725-5 875 MHz) SRD – Transport and information control systems (5 805-5 815 MHz)	Resolution 229 (Rev.WRC-19) applies BFWA is limited to below 5850 MHz in order to protect FSS in the band 5850-6425MHz. Common international SRD band; see ITU-R Rec.SM. [SRD] Transport information and control systems Recommendation ITU-R M.1453
5 830 - 5850 MHz FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.451 5.453 5.455	**5 830 - 5850 MHz** FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455 SADC18	Wireless Access Systems (WAS)/RLAN BFWA (5725-5850 MHz) ISM (5725-5875 MHz)	BFWA is limited to below 5850 MHz in order to protect FSS in the band 5850-6425 MHz. Resolution 229 (Rev.WRC-19) applies

5 850 - 5925 MHz FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.150	**5 850 - 5925 MHz** FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.150	Wireless Access Systems (WAS)/RLAN Fixed-satellite uplinks (PTP/VSAT/SNG) (5850-6425 MHz) FIXED links (5850-5925 MHz) ISM (5725-5875 MHz)	Resolution 229 (Rev.WRC-19) applies FS could be used for temporary OB links.
5 925 - 6700 MHz FIXED 5.457 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B MOBILE 5.457C 5.149 5.440 5.458	**5 925 - 6700 MHz** FIXED 5.457 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.149 5.440 5.458	Fixed links – Lower 6 GHz (5925-6425 MHz) and Upper 6 GHz (6425-7110 MHz) Fixed-satellite uplinks (PTP/VSAT/SNG) (5850-6425 MHz)	Channelling plan for L6 GHz band in accordance with ITU-R Rec. F.383. Channelling plan for U6 GHz band in accordance with ITU-R Rec. F.384. Earth Station on-board vessels (ESV) also allowed under FSS.
6 700 - 7075 MHz FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE 5.458 5.458A 5.458B	**6 700 - 7075 MHz** FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 5.458 5.458A 5.458B	Fixed links – Upper 6 GHz (6425-7110 MHz) and Lower 7 GHz (7110-7425 MHz)	Channelling plan for U6 GHz band in accordance with ITU-R Rec. F.384. The band 6 725-7025 MHz is part of the APP30B Plan (FSS Earth-to-space); refer to Annex B.
7 075 - 7145 MHz FIXED MOBILE 5.458 5.459	**7 075 - 7145 MHz** FIXED 5.458 5.460	Fixed links – Upper 6 GHz (6425-7110 MHz) and Lower 7 GHz (7110-7425 MHz)	Channelling plan for U6 band in accordance with ITU-R Rec. F.384. Channelling plan for L7 band is in accordance with ITU-R Rec. F.385 Annex 3.
7 145 – 7190 MHz FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) 5.458 5.459	**7 145 – 7190 MHz** FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) 5.458 5.459	Fixed links – Lower 7 GHz (7110-7425 MHz)	Channelling plan for L7 band in accordance with ITU-R Rec. F.385 Annex 3.
7 190 - 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	**7 190 - 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	Fixed links – Lower 7 GHz (7110-7425 MHz)	Channelling plan for L7 band in accordance with ITU-R Rec. F.385 Annex 3.

7 235 - 7250 MHz EARTH EXPLORATION SATELLITE (Earth-to-Space) 5.460A FIXED MOBILE 5.458	**7 235 - 7250 MHz** EARTH EXPLORATION SATELLITE (Earth-to-Space) 5.460A FIXED 5.458	Fixed links – Lower 7 GHz (7110-7425 MHz)	Channelling plan for L7 band in accordance with ITU-R Rec. F.385 Annex 3.
7 250 -7 300 MHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 5.461	**7 250 -7 300 MHz** FIXED 5.461	Fixed links – Lower 7 GHz (7110-7425 MHz)	Channelling plan for L7 band in accordance with ITU-R Rec. F.385 Annex 3.
7 300 -7 375 MHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461	**7 300 -7 375 MHz** FIXED 5.461	Fixed links – Lower 7 GHz (7110-7425 MHz) and Upper 7 GHz (7425-7750 MHz)	Channelling plan for L7 band in accordance with ITU-R Rec. F.385 Annex 3.
7 375 - 7450 MHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE SATELLITE (Space-to-Earth) 5.461AA 5.461AB	**7 375 - 7450 MHz** FIXED MOBILE except aeronautical mobile MARITIME MOBILE SATELLITE (Space-to-Earth) 5.461AA 5.461AB	Fixed links – Lower 7 GHz (7110-7425 MHz) and Upper 7 GHz (7425-7750 MHz)	Channelling plan for L7 band in accordance with ITU-R Rec. F.385 Annex 3.
7 450 - 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	**7 450 - 7550 MHz** FIXED METEOROLOGICAL SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE SATELLITE (Space-to-Earth) 5.461AA 5.461AB 5.461A	Fixed links – Upper 7 GHz (7425-7750 MHz)	Channelling plan for L7 band in accordance with ITU-R Rec. F.385 Annex 3.
7 550 - 7750 MHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE SATELLITE (Space-to-Earth) 5.461AA 5.461AB	**7 550 - 7750 MHz** FIXED MOBILE except aeronautical mobile MARITIME MOBILE SATELLITE (Space-to-Earth) 5.461AA 5.461AB	Fixed links – Upper 7 GHz (7425-7750 MHz)	Channelling plan for L7 band in accordance with ITU-R Rec.F.385 Annex 3.

7 750 - 7900 MHz F IXED METEOROLOGICAL SATELLITE (space-to Earth) 5.461B MOBILE except aeronautical mobile	**7 750 - 7900 MHz** FIXED Meteorological-SATELLITE (space-to-Earth) 5.461B	Fixed links – Lower 8 GHz (7725-8275 MHz)	Channelling plan for L8 band in accordance with ITU-R Rec. F.386 Annex 1.
7 900 - 8025 MHz FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.461	**7 900 - 8025 MHz** FIXED 5.461	Fixed links – Lower 8 GHz (7725-8275 MHz)	Channelling plan for L8 band in accordance with ITU-R Rec. F.386 Annex 1.
8 025 - 8175 MHz EARTH EXPLORATION SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	**8 025 - 8 175 MHz** EARTH EXPLORATION SATELLITE (space-to-Earth) FIXED 5.462A	Fixed links – Lower 8 GHz (7725-8275 MHz)	Channelling plan for L8 band in accordance with ITU-R Rec. F.386 Annex 1.
8 175 - 8215 MHz EARTH EXPLORATION SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	**8 175 - 8215 MHz** EARTH EXPLORATION SATELLITE (space-to-Earth) FIXED 5.462A	Fixed links – Lower 8 GHz (7725-8275 MHz)	Fixed links – Lower 8 GHz (7725-8275 MHz)
8 215 - 8400 MHz EARTH EXPLORATIONSATELLITE (space-to Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	**8 215 - 8400 MHz** EARTH EXPLORATION SATELLITE (space-to-Earth) FIXED 5.462A	Fixed links - Lower 8 GHz (7725-8275 MHz) and Upper 8 GHz (8275-8500 MHz)	Channelling plan for L8 band in accordance with ITU-R Rec.F.386 Annex 1. Channelling plan for U8 band in accordance with ITU-R Rec. F.386 Annex 1.
8 400 - 8500 MHz FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.465 5.466	**8 400 - 8500 MHz** FIXED	Fixed links – Upper 8 GHz (8275-8500 MHz)	Channelling plan for U8 band in accordance with ITU-R Rec. F.386 Annex 1.

8 500 - 8550 MHz RADIOLOCATION 5.468 5.469	**8 500 - 8550 MHz** RADIOLOCATION 5.468	RADARS. Civil and military aeronautical radionavigation e.g. precision airfield approach radars	
8 550-8 650 MHz EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469 5.469A	**8 550 - 8650 MHz** EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469A	RADARS. Civil and military aeronautical radionavigation e.g. precision airfield approach radars	
8 650 - 8750 MHz RADIOLOCATION 5.468 5.469	**8 650 - 8750 MHz** RADIOLOCATION 5.468	RADARS. Civil and military aeronautical radionavigation e.g. precision airfield approach radars	
8 750 - 8850 MHz RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 5.471	**8 750 - 8850 MHz** RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470	RADARS. Civil and military aeronautical radionavigation e.g. precision airfield approach radars	
8 850 - 9000 MHz RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473	**8 850 - 9000 MHz** RADIOLOCATION MARITIME RADIONAVIGATION 5.472	RADARS. Civil and military aeronautical radionavigation e.g. precision airfield approach radars	
9 000 - 9200 MHz AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION 5.471 5.473A	**9 000 - 9200 MHz** AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION 5.473A	RADARS. Civil and military aeronautical radionavigation e.g. precision airfield approach radars	
9 200 - 9300 MHz EARTH EXPLORATION SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474 5474D	**9 200 - 9300 MHz** EARTH EXPLORATION SATELLITE (active) 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474 5474D	RADARS. Civil and military aeronautical radionavigation e.g. precision airfield approach radars	
9 300 - 9500 MHz RADIONAVIGATION 5.475 EARTH EXPLORATION SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.427 5.474 5.475A 5.475B 5.476A	**9 300 - 9500 MHz** RADIONAVIGATION 5.475 EARTH EXPLORATION SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.427 5.474 5.475A 5.475B 5.476A	RADARS. Civil and military aeronautical radionavigation e.g. precision airfield approach radars	

9 500 - 9800 MHz EARTH EXPLORATION SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	**9 500 - 9800 MHz** EARTH EXPLORATION SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	RADARS. Civil and military aeronautical radionavigation e.g. precision airfield approach radars	
9 800 - 9900 MHz RADIOLOCATION Earth exploration-satellite (active) Space research (active) Fixed 5.477 5.478 5.478A 5.478B	**9 800 - 9900 MHz** RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.478A 5.478B		
9 900 – 10 000 MHz EARTH EXPLORATION SATELLITE (active) 5.474A 5.474B 5474C RADIOLOCATION Fixed 5.474D 5.477 5.478 5.479	**9 900 – 10 000 MHz** EARTH EXPLORATION SATELLITE (active) 5.474B 5474C RADIOLOCATION Fixed 5.474D 5.477 5.478 5.479	RADARS. 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	**10-10.4 GHz** EARTH EXPLORATION SATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.474D 5.479		
10.4 - 10.45 GHz FIXED MOBILE RADIOLOCATION Amateur	**10.4 - 10.45 GHz** FIXED RADIOLOCATION	BFWA – 10.5 GHz (10.15-10.30 GHz)	Paired with 10.50-10.65 GHz Channelling plan for 10.5 GHz Band in accordance with ITUR Rec. F.1568 Annex 1.
10.45 - 10.5 GHz RADIOLOCATION Amateur Amateur-satellite 5.481	**10.45 - 10.5 GHz** RADIOLOCATION Amateur Amateur-Satellite 5.481	RADIOLOCATION	
10.5 - 10.55 GHz FIXED MOBILE Radiolocation	**10.5 - 10.55 GHz** FIXED	BFWA (10.50-10.65 GHz)	Paired with 10.15-10.30 GHz Channelling plan for 10.5 GHz band in accordance with ITUR Rec. F.1568 Annex 1.

10.55 - 10.6 GHz FIXED MOBILE except aeronautical mobile Radiolocation	**10.55 - 10.6 GHz** FIXED	BFWA (10.50-10.65 GHz)	Paired with 10.15-10.30 GHz Channelling plan for 10.5 GHz band in accordance with ITUR Rec. F.1568 Annex 1.
10.6 - 10.68 GHz EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482 5.482A	**10.6 - 10.68 GHz** EARTH EXPLORATION SATELLITE (passive) FIXED RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.482 5.482A	BFWA (10.50-10.65 GHz)	Paired with 10.15-10.30 GHz Channelling plan for 10.5 GHz band in accordance with ITUR 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	**10.68 - 10.7 GHz** EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340		
10.7 – 10.95 GHz FIXED FIXED SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	**10.7 – 10.95 GHz** FIXED FIXED SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile		
10.95 - 11.2 GHz FIXED FIXED SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	**10.95 - 11.2 GHz** FIXED FIXED SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile		
11.2 - 11.45 GHz FIXED FIXED SATELLITE(space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	**11.2 - 11.45 GHz** FIXED FIXED SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile		
11.45-11.7 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	**11.45 - 11.7 GHz** FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	Fixed links - 11 GHz (10.7-11.7 GHz) Fixed-satellite downlinks (PTP/VSAT/SNG)	Channelling plan for 11 GHz band in accordance with ITUR Rec. F.387. The bands 10.7-10.9 GHz and 11.2-11.45 GHz are part of the APP30B Plan (FSS space-to-Earth); refer to Annex B.

11.7 - 12.5 GHz FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE .492 5.487 5.487A	**11.7 - 12.5 GHz** BROADCASTING-SATELLITE 5.492 5.487 5.487A		This band is available for BSS in accordance with Appendix 30 of ITU RR. Refer to Annex B
12.5 - 12.75 GHz FIXED-SATELLITE (space-to-Earth) 5.484A 4.484B (Earth-to-space) 5.494 5.495 5.496	**12.5-12.75 GHz** FIXED-SATELLITE (space-to-Earth) 5.484A 4.484B (Earth-to-space)	FSS uplinks (VSAT/SNG) (12.5-12.75 GHz)	
12.75 - 13.25 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.441 MOBILE Space research (deep space) (space-to-Earth)	**12.75 - 13.25 GHz** FIXED FIXED-SATELLITE (Earth-to-space) 5.441	Fixed links - 13 GHz (12.75-13.25 GHz)	Channelling plan for 13 GHz band in accordance with ITU-R Rec. F.497. The band 12.75 - 13.25 GHz is part of the APP30B Plan (FSS Earth-to-space); refer to Annex B.
13.25 - 13.4 GHz EARTH EXPLORATION SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A 5.499	**13.25 - 13.4 GHz** EARTH EXPLORATION SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A	Airborne Doppler Radar	
13.4 - 13.65 GHz EARTH EXPLORATION SATELLITE (active) FIXED SATELLITE (space-to-Earth) 5.499A 5.499B RADIOLOCATION SPACE RESEARCH 5.499C 5.499D Standard frequency and time signal satellite (Earth-to-space) 5.499E 5.500 5.501 5.501B	**13.4 - 13.65 GHz** EARTH EXPLORATION SATELLITE (active) FIXED SATELLITE (space-to-Earth) 5.499A 5.499B RADIOLOCATION SPACE RESEARCH 5.499C 5.499D Standard frequency and time signal satellite (Earth-to-space) 5.499E 5.500 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) 5.499 5.500 5.501 5.501B	**13.65 - 13.75 GHz** EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A Standard frequency and time signal-satellite (Earth-to-space) 5.499 5.500 5.501B	RADIOLOCATION	

13.75 -14 GHz FIXED-SATELLITE (Earth-to-space) 5.484A RADIOLOCATION Earth exploration-satellite Standard frequency and time signal-satellite (Earth-to-space) Space research 5.499 5.500 5.501 5.502 5.503	**13.75 – 14 GHz** FIXED-SATELLITE (Earth-to-space) 5.484A RADIOLOCATION 5.500 5.502 5.503	FSS uplinks (PTP/VSAT/SNG) (13.75-14.5 GHz) RADIOLOCATION	
14 - 14.25 GHz FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.504C 5.506A Space research 5.504A 5.505	**14 - 14.25 GHz** FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B Mobile-Satellite (Earth-to-space) 5.504B 5.504C 5.506A Space Research 5.504A 5.505	FSS uplinks (PTP/VSAT/SNG) (13.75-14.5 GHz)	Earth Station on-board vessels (ESV) also allowed under FSS; Res. 902applies. The band 14.0 -14.5 GHz may also be used for AES (aircraft-to-space station).
14.25 - 14.3 GHz FIXED-SATELLITE (Earth-to- space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.508A Space research 5.504A 5.505 5.508	**14.25 - 14.3 GHz** FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B Mobile-Satellite (Earth-to-space) 5.504B 5.506A 5.508A Space Research 5.504A 5.505	FSS uplinks (PTP/VSAT/SNG) (13.75-14.5 GHz)	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 5.484B 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Radionavigation-satellite 5.504A	**14.3 - 14.4 GHz** FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B Mobile-Satellite (Earth-to-space) 5.504B 5.506A 5.509A Radionavigation-satellite 5.504A	FSS uplinks (PTP/VSAT/SNG) (13.75-14.5 GHz)	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).

14.4 - 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	**14.4 - 14.47 GHz** FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B Mobile-Satellite (Earth-to-space) 5.504B 5.506A 5.509A Space research (space-to-Earth) 5.504A	FSS uplinks (PTP/VSAT/SNG) (13.75-14.5 GHz)	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	**14.47 - 14.5 GHz** FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B Mobile-Satellite (Earth-to- space) 5.504B 5.506A 5.509A Radio astronomy 5.149 5.504A	FSS uplinks (PTP/VSAT/SNG) (13.75-14.5 GHz)	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) 5.509B 5.509C 5.509D 5.509E 5.509F 5.510 MOBILE Space research 5.509G	**14.5 - 14.75 GHz** FIXED	Fixed links – 15 GHz (14.5-15.35 GHz)	Channelling plan for 15 GHz band in accordance with ITUR Rec. F.636. The band 14.5-14.8 GHz is part of the APP30A Plan (Feeder Links for BSS) for some SADC countries. Refer to Annex B.
14.75 - 14.8 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.510 MOBILE Space research 5.509G	**14.75 - 14.8 GHz** FIXED	Fixed links – 15 GHz (14.5-15.35 GHz)	Channelling plan for 15 GHz band in accordance with ITUR Rec. F.636. The band 14.5-14.8 GHz is part of the APP30A Plan (Feeder Links for BSS) for some SADC countries. Refer to Annex B.
14.8 - 15.35 GHz FIXED MOBILE Space research 5.339	**14.8 - 15.35 GHz** FIXED 5.339	Fixed links – 15 GHz (14.5-15.35 GHz)	Channelling plan for 15 GHz band in accordance with ITUR Rec. F.636. The band 14.5-14.8 GHz is part of the APP30A Plan (Feeder Links for BSS) for some SADC countries. Refer to Annex B.
15.35 - 15.4 GHz EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.511	**15.35 - 15.4 GHz** EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340		

15.4 - 15.43 GHz RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	**15.4 - 15.43 GHz** RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	Radio altimeters/ Radars	
15.43 - 15.63 GHz FIXED-SATELLITE (Earth-to-space) 5.511A RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511C	**15.43 - 15.63 GHz** FIXED-SATELLITE (Earth-to-space) 5.511A RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511C	Radars	
15.63 - 15.7 GHz RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	**15.63 - 15.7 GHz** RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	Radars	
15.7 - 16.6 GHz RADIOLOCATION 5.512 5.513	**15.7 - 16.6 GHz** RADIOLOCATION 5.512	Government use	
16.6 - 17.1 GHz RADIOLOCATION Space research (deep space) (Earth-to-space) 5.512 5.513	**16.6 - 17.1 GHz** RADIOLOCATION Space Research (deep space) (Earth-to-space) 5.512		
17.1 - 17.2 GHz RADIOLOCATION 5.512 5.513	**17.1 - 17.2 GHz** RADIOLOCATION 5.512	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	**17.2 - 17.3 GHz** EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.512 5.513A	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	**17.3 - 17.7 GHz** FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A 5.516B Radiolocation 5.514		The band 17.3-17.7 GHz is part of the APP30A Plan (Feeder Links for BSS) for many SADC countries; refer to Annex B. The band17.3-17.7 GHz is Identified for HDFFS; Res.143 applies.
17.7 - 18.1 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.517A (Earth-to-space) 5.516 MOBILE	**17.7 - 18.1 GHz** FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.517A (Earth-to-space) 5.516	Fixed links – 18 GHz (17.7-19.7 GHz)	Channelling plan for 18 GHz band in accordance with ITU-R Rec. F.595 Annex 1.
18.1 - 18.4 GHz FIXED	**18.1 - 18.4 GHz** FIXED	Fixed links – 18 GHz (17.7-19.7 GHz)	Channelling plan for 18 GHz band in accordance with ITU-R Rec. F.595 Annex

FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.571A (Earth-to-space) 5.520 MOBILE 5.519 5.521	5.519		1.
18.4 - 18.6 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A MOBILE	**18.4 - 18.6 GHz** FIXED	Fixed links – 18 GHz (17.7-19.7 GHz)	Channelling plan for 18 GHz band in accordance with ITU-R Rec. F.595 Annex 1.
18.6 - 18.8 GHz EARTH EXPLORATION SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.517A 5.522B MOBILE except aeronautical mobile Space research (passive) 5.522A 5.522C	**18.6 - 18.8 GHz** EARTH EXPLORATION SATELLITE (passive) FIXED 5.522A	Fixed links – 18 GHz (17.7-19.7 GHz)	Channelling plan for 18 GHz band in accordance with ITU-R Rec. F.595 Annex 1.
18.8 - 19.3 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.517A 5.523A MOBILE	**18.8 - 19.3 GHz** FIXED	Fixed links – 18 GHz (17.7-19.7 GHz)	Channelling plan for 18 GHz band in accordance with ITU-R Rec. F.595 Annex 1.
19.3 - 19.7 GHz FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.517A 5.523B 5.523C 5.523D 5.523E MOBILE	**19.3 - 19.7 GHz** FIXED	Fixed links – 18 GHz (17.7-19.7 GHz)	Channelling plan for 18 GHz band in accordance with ITU-R Rec. F.595 Annex 1.
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	**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		The band 19.7-20.2 GHz is identified for HDFFS; Res.143 applies.
20.1 - 20.2 GHz FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528	**20.1 - 20.2 GHz** FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528		The band 19.7-20.2 GHz is identified for HDFFS; Res.143 applies.

20.2 - 21.2 GHz FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) 5.524	**20.2 - 21.2 GHz** FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-Satellite (space-to-Earth) 5.524	Government use	
21.2 - 21.4 GHz EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	**21.2 - 21.4 GHz** EARTH EXPLORATION SATELLITE (passive) FIXED SPACE RESEARCH (passive)	Fixed links – 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz)	Channelling plan for 23 GHz band in accordance with ITU-R Rec. F.637 Annex 1 or Annex 3.
21.4 – 22 GHz FIXED MOBILE BROADCASTING-SATELLITE 5.208B 5.530A 5.530B 5.530D	**21.4 - 22 GHz** FIXED BROADCASTING-SATELLITE 5.208B 5.530A 5.530B 5.530D	Fixed links – 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz)	Channelling plan for 23 GHz band in accordance with ITU-R Rec. F.637 Annex 1 or Annex 3. The use of BSS in this band is subject to the provisions of Res.525. BSS systems operating in this band over SADC countries are not expected within the foreseeable future.
22 - 22.21 GHz FIXED MOBILE except aeronautical mobile 5.149	**22 - 22.21 GHz** FIXED 5.149	Fixed links – 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz)	Channelling plan for 23 GHz band in accordance with ITU-R Rec. F.637 Annex 1 or Annex 3.
22.21 - 22.5 GHz EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.532	**22.21 - 22.5 GHz** FIXED 5.149 5.532	Fixed links – 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz)	Channelling plan for 23 GHz band in accordance with ITU-R Rec. F.637 Annex 1 or Annex 3.
22.5 - 22.55 GHz FIXED MOBILE	**22.5 - 22.55 GHz** FIXED	Fixed links – 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz)	Channelling plan for 23 GHz band in accordance with ITU-R Rec. F.637 Annex 1 or Annex 3.
22.55 - 23.15 GHz FIXED INTER-SATELLITE 5.338A MOBILE SPACE RESEARCH (Earth-to-space) 5.532 5.149	**22.55 - 23.15 GHz** FIXED INTER-SATELLITE 5.338A SPACE RESEARCH (Earth-to-space) 5.532A 5.149	Fixed links – 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz)	Channelling plan for 23 GHz band in accordance with ITU-R Rec. F.637 Annex 1 or Annex 3.

23.15 - 23.55 GHz FIXED INTER-SATELLITE 5.338A MOBILE	**23.15 - 23.55 GHz** FIXED INTER-SATELLITE 5.338A MOBILE		
23.55 - 23.6 GHz FIXED MOBILE	**23.55 - 23.6 GHz** FIXED	Fixed links – 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz)	Channelling plan for 23 GHz band in accordance with ITU-R Rec. F.637 Annex 1 or Annex 3.
23.6 – 24 GHz EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	**23.6 – 24 GHz** EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340		
24 - 24.05 GHz AMATEUR AMATEUR-SATELLITE 5.150	**24 - 24.05 GHz** AMATEUR AMATEUR-SATELLITE 5.150	AMATEUR AMATEUR-SATELLITE ISM (24.0-24.25 GHz) SRD applications (24-24.25 GHz)	Common international SRD band; see ITU-R Rec.SM.2153
24.05 - 24.25 GHz RADIOLOCATION Amateur Earth exploration-satellite (active) 5.150	**24.05 - 24.25 GHz** RADIOLOCATION Amateur Earth Exploration-Satellite (active) 5.150		The band 24.0-24.2 GHz is designated for ISM applications (5.150).
24.25 - 24.45 GHz FIXED MOBILE except aeronautical mobile 5.338A 5.532AB	**24.25 - 24.45 GHz** FIXED MOBILE except aeronautical mobile 5.338A 5.532AB	IMT (24.25-27.5 GHz)	Temporary fixed links for ENG/OB IMT Res 242 (WRC-19) applies
24.45-24.65 GHz FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB	**24.45 - 24.65 GHz** FIXED MOBILE except aeronautical mobile 5.338A 5.532AB	Fixed links - 26 GHz (24.5-26.5 GHz) BFWA (24.5-26.5 GHz) IMT (24.25-27.5 GHz)	Channelling plan for 26 GHz band in accordance with ITUR Rec. F.748 Annex 1. IMT Res 242 (WRC-19) applies
24.65 - 24.75 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.532B INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB	**24.65 - 24.75 GHz** FIXED FIXED SATELLITE (Earth to Space) 5.532B INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB	Fixed links - 26 GHz (24.5-26.5 GHz) BFWA (24.5-26.5 GHz) IMT (24.25-27.5 GHz)	Channelling plan for 26 GHz band in accordance with ITUR Rec. F.748 Annex 1. IMT Res 242 (WRC-19) applies
24.75 - 25.25 GHz FIXED SATELLITE (Earth-to-space) 5.532B MOBILE except aeronautical mobile 5.338A 5.532AB	**24.75 - 25.25 GHz** FIXED SATELLITE (Earth-to-space) 5.532B MOBILE except aeronautical mobile 5.338A 5.532AB	Fixed links - 26 GHz (24.5-26.5 GHz) BFWA (24.5-26.5 GHz) IMT (24.25-27.5 GHz)	Channelling plan for 26 GHz band in accordance with ITUR Rec. F.748 Annex 1. IMT Res 242 (WRC-19) applies

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)	**25.25 - 25.5 GHz** FIXED MOBILE 5.338A 5.532AB	Fixed links - 26 GHz (24.5-26.5 GHz) BFWA (24.5-26.5 GHz) IMT (24.25-27.5 GHz)	Channelling plan for 26 GHz band in accordance with ITUR Rec. F.748 Annex 1. IMT Res 242 (WRC-19) applies
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 Standard frequency and time signal-satellite (Earth-to-space) 5.536A	**25.5 – 27 GHz** EARTH EXPLORATION SATELLITE (space-to-Earth) 5.536B FIXED MOBILE 5.338A 5.532AB SPACE RESEARCH (space-to-Earth) 5.536C 5.536A	Fixed links – 26 GHz (24.5-26.5 GHz) BFWA (24.5-26.5 GHz) IMT (24.25-27.5 GHz)	Channelling plan for 26 GHz band in accordance with ITUR Rec. F.748 Annex 1. IMT Res 242 (WRC-19) applies
27 - 27.5 GHz FIXED INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB	**27 - 27.5 GHz** FIXED INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB	Government use IMT (24.25-27.5 GHz)	IMT Res 242 (WRC-19) applies
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	**27.5 - 28.5 GHz** FIXED 5.537A FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.539 5.538 5.540	Fixed links – 28 GHz (27.5-29.5 GHz) BFWA (27.5-29.5 GHz)	Channelling plan for 28 GHz band in accordance with ITUR Rec. F.748 Annex 2. The band 27.5-27.82 GHz is identified for HDFFS; 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	**28.5 - 29.1 GHz** FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.523A 5.539 5.540	Fixed links – 28 GHz (27.5-29.5 GHz) BFWA (27.5-29.5 GHz)	Channelling plan for 28 GHz band in accordance with ITUR Rec. F.748 Annex 2. The band 28.45-28.94 GHz is identified for HDFFS; 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 (Earth-to-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	**29.1 - 29.5 GHz** FIXED FIXED-SATELLITE (Earth-to-space) 5.516B 5.517A 5.523C 5.523E 5.535A 5.539 5.541A 5.540		
29.5 - 29.9 GHz FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.427A 5.539 Earth exploration-satellite (Earth-to-space) 5.541 Mobile-satellite (Earth-to-space) 5.540 5.542	**29.5 - 29.9 GHz** FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.427A 5.539 Earth exploration-satellite (Earth-to-space) 5.541 Mobile-satellite (Earth-to-space) 5.540 5.542		The band 29.46-30.0 GHz is identified for HDFFS; Res.143 applies.
29.9 – 30 GHz FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.427A 5.539 MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (Earth-to-space) 5.541 5.543 5.525 5.526 5.527 5.538 5.540 5.542	**29.9 – 30 GHz** FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.427A 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		The band 29.46-30.0 GHz is identified for HDFFS; Res.143 applies.
30 – 31 GHz FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE-SATELLITE (Earth-to-space) Standard frequency and time signal-satellite (space-to-Earth) 5.542	**30 – 31 GHz** FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE-SATELLITE (Earth-to-space) Standard Frequency and time Signal-Satellite (space-to-Earth)		
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	**31 - 31.3 GHz** FIXED 5.338A 5.543B MOBILE Standard Frequency and Time Signal-Satellite (space-to-Earth) Space Research 5.544 5.149		Identified for HAPS Res 168 (WRC-19) applies

31.3 - 31.5 GHz EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	**31.3 - 31.5 GHz** EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340		
31.5 - 31.8 GHz EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except Aeronautical Mobile 5.149 5.546	**31.5 - 31.8 GHz** EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except Aeronautical Mobile 5.149 5.546		
31.8 - 32 GHz FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) Mobile except Aeronautical Mobile 5.547 547B 5.548	**31.8 - 32 GHz** FIXED 5.547A 5.547 5.548	Fixed links (PTP/PTMP) (31.8-33.4 GHz)	Channelling plan for 32 GHz band in accordance with ITUR Rec. F.1520 Annex 1. The band 31.8-33.4 GHz is identified for HDFS; Res.75 applies.
32 - 32.3 GHz FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547C 5.548	**32 - 32.3 GHz** FIXED 5.547A 5.547 5.548	Fixed links (PTP/PTMP) (31.8-33.4 GHz)	Channelling plan for 32 GHz band in accordance with ITUR Rec. F.1520 Annex 1. The band 31.8-33.4 GHz is identified for HDFS; Res.75 applies.
32.3 – 33 GHz FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.547D 5.548	**32.3 – 33 GHz** FIXED 5.547A 5.547 5.548	Fixed links (PTP/PTMP) (31.8-33.4 GHz)	Channelling plan for 32 GHz band in accordance with ITUR Rec. F.1520 Annex 1. The band 31.8-33.4 GHz is identified for HDFS; Res.75 applies.
33 - 33.4 GHz FIXED 5.547A RADIONAVIGATION 5.547 5.547E	**33 - 33.4 GHz** FIXED 5.547A 5.547	Fixed links (PTP/PTMP) (31.8-33.4 GHz)	Channelling plan for 32 GHz band in accordance with ITUR Rec. F.1520 Annex 1. The band 31.8-33.4 GHz is identified for HDFS; Res.75 applies.
33.4 - 34.2 GHz RADIOLOCATION 5.549	**33.4 - 34.2 GHz** RADIOLOCATION 5.549	Government use	

34.2 - 34.7 GHz RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) 5.549	**34.2 - 34.7 GHz** RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) 5.549	Government use	
34.7 - 35.2 GHz RADIOLOCATION Space research 5.550 5.549	**34.7 - 35.2 GHz** RADIOLOCATION Space Research 5.549	Government use	
35.2 - 35.5 GHz METEOROLOGICAL AIDS RADIOLOCATION 5.549	**35.2 - 35.5 GHz** METEOROLOGICAL AIDS RADIOLOCATION 5.549	Government use	
35.5-36 GHz METEOROLOGICAL AIDS EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549 5.549A	**35.5 - 36 GHz** METEOROLOGICAL AIDS EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549 5.549A	Government use	
36 – 37 GHz EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	**36 – 37 GHz** EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	Government use	
37 - 37.5 GHz FIXED MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to-Earth) 5.547	**37 - 37.5 GHz** FIXED MOBILE except aeronautical mobile 5.550B 5.547	Fixed links – 38 GHz (37.0-39.5 GHz) IMT (37-43.5 GHz)	The band 37-40 GHz is identified for HDFS; Res.75 applies. Channelling plan for 38 GHz band in accordance with ITU Rec. F.749 Annex 1. IMT Res 243 (WRC-19) applies
37.5 – 38 GHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	**37.5 – 38 GHz** FIXED MOBILE except aeronautical mobile 5.550B 5.547	Fixed links – 38 GHz (37.0-39.5 GHz) IMT (37-43.5 GHz)	The band 37-40 GHz is identified for HDFS; Res.75 applies. Channelling plan for 38 GHz band in accordance with ITU Rec. F.749 Annex 1. IMT Res 243 (WRC-19) applies

38 - 39.5 GHz FIXED 5.550D FIXED-SATELLITE (space-to-Earth) 5.550C MOBILE 5.550B Earth exploration-satellite (space-to-Earth) 5.547	**38 - 39.5 GHz** FIXED 5.550D MOBILE 5.550B	Fixed links – 38 GHz (37.0-39.5 GHz) IMT (37-43.5 GHz)	The band 37-40 GHz is identified for HDFS; Res.75 applies. Channelling plan for 38 GHz band in accordance with ITU Rec. F.749 Annex 1. IMT Res 243 (WRC-19) applies
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	**39.5 – 40 GHz** FIXED MOBILE 5.550B 5.547	IMT (37-43.5 GHz)	The band 37-40 GHz is identified for HDFS; Res.75 applies. The band 39.5-40 GHz is identified for HDFFS; Res.143 applies. IMT Res 243 (WRC-19) applies
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	**40 - 40.5 GHz** FIXED MOBILE 5.550B	Government use IMT (37-43.5 GHz)	The band 40-40.5 GHz is identified for HDFFS; Res.143 applies. IMT Res 243 (WRC-19) applies
40.5 – 41 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.550C LAND MOBILE 5.550B BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile 5.547	**40.5 – 41 GHz** FIXED LAND MOBILE 5.550B Aeronautical mobile Maritime mobile 5.547	IMT (37-43.5 GHz)	BFWA or MWS (40.5-43.5 GHz). The band 40.5-43.5 GHz is identified for HDFS; Res.75 applies. IMT Res 243 (WRC-19) applies
41 - 42.5 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C LAND MOBILE 5.550B	**41 - 42.5 GHz** FIXED LAND MOBILE 5.550B Aeronautical mobile Maritime mobile	IMT (37-43.5 GHz)	BFWA or MWS (40.5-43.5 GHz). The band 40.5-43.5 GHz is identified for HDFS; Res.75 applies IMT Res 243 (WRC-19) applies

BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile 5.547 5.551F 5.551H 5.551I	5.547		
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	**42.5 - 43.5 GHz** FIXED MOBILE except aeronautical Mobile 5.550B RADIO ASTRONOMY 5.149 5.547	IMT (37-43.5 GHz)	BFWA or MWS (40.5-43.5 GHz). The band 40.5-43.5 GHz is identified for HDFS; Res.75 applies IMT Res 243 (WRC-19) applies
43.5 – 47 GHz MOBILE 5.553 5.553A MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION SATELLITE 5.554	**43.5 – 47 GHz** MOBILE 5.553 5.553A MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION SATELLITE 5.554	Government use (43.5-45.5 GHz) IMT (37-43.5 GHz)	IMT Res 243 (WRC-19) applies
47 – 47.2 GHz AMATEUR AMATEUR-SATELLITE	**47 - 47.2 GHz** AMATEUR AMATEUR-SATELLITE	Amateur Amateur-satellite	
47.2 – 47.5 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553B 5.552A	**47.2 – 47.5 GHz** FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.553B 5.552A	IMT (47.2-48.2 GHz)	Res 243 (WRC-19) applies The bands 47.2-47.5 GHz and 47.9-48.2 GHz is identified for HAPS Res 122 (rev. WRC-19) applies
47.5 - 47.9 GHz FIXED FIXED-SATELLITE (Earth-to-space) 550C 5.552 (space-to-Earth) 5.516B 5.554A MOBILE	**47.5 - 47.9 GHz** FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A MOBILE	IMT (47.2-48.2 GHz)	The band 47.5-47.9 GHz is identified for HDFFS; Res.143 applies. Res 243 (WRC-19) applies
47.9 - 48.2 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553B 5.552A	**47.9 – 48.2 GHz** FIXED FIXED-SATELLITE (Earth-to-space)5.550C 5.552 MOBILE 5.553B 5.552A	IMT (47.2-48.2 GHz)	Res 243 (WRC-19) applies The bands 47.2-47.5 GHz and 47.9-48.2 GHz is identified for HAPS Res 122 (rev. WRC-19) applies

48.2 – 48.54 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A5.555B MOBILE	**48.2 - 48.54 GHz** FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A5.555B MOBILE		The band 48.2-48.54 GHz is identified for HDFFS; Res.143 applies.
48.54 - 49.44 GHz FIXED FIXED-SATELLITE (Earth-to-space)5.550C 5.552 MOBILE 5.149 5.340 5.555	**48.54 - 49.44 GHz** FIXED FIXED-SATELLITE (Earth-to-space)5.550C 5.552 MOBILE 5.340 5.555		
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	**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		The band 49.44-50.2 GHz is identified for HDFFS; Res.143 applies.
50.2 - 50.4 GHz EARTH EXPLORATION SATELLITE (passive) SPACE RESEARCH (passive) 5.340	**50.2 - 50.4 GHz** EARTH EXPLORATION SATELLITE (passive) SPACE RESEARCH (passive) 5.340		
50.4 - 51.4 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.550C MOBILE Mobile-satellite (Earth-to-space)	**50.4 - 51.4 GHz** FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.55OC MOBILE Mobile-satellite (Earth-to-space)		
51.4 - 52.4 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.555C MOBILE 5.338A 5.547 5.556	**51.4 - 52.6 GHz** FIXED MOBILE 5.338A 5.547 5.556		The band 51.4-52.6 GHz is identified for HDFS; Res.75 applies.
52.4 – 52.6 GHz FIXED 5.338A MOBILE 5.547 5.556	**52.4 – 52.6 GHz** FIXED 5.338A MOBILE 5.547 5.556		

52.6 - 54.25 GHz EARTH EXPLORATION SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	**52.6 - 54.25 GHz** EARTH EXPLORATION SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556		
54.25 - 55.78 GHz EARTH EXPLORATIONSATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive) 5.556B	**54.25 – 55.78 GHz** EARTH EXPLORATION SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive)		
55.78 - 56.9 GHz EARTH EXPLORATION SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	**55.78 - 56.9 GHz** EARTH EXPLORATION SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547		The band 55.78-59 GHz is identified for HDFS; Res.75 applies.
56.9 – 57 GHz EARTH EXPLORATIONSATELLITE (passive) FIXED INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	**56.9 – 57 GHz** EARTH EXPLORATION SATELLITE (passive) FIXED INTER-SATELLITE 5.558A MOBILE 5.558 SPACERESEARCH (passive) 5.547		The band 55.78-59 GHz is identified for HDFS; Res.75 applies.
57 - 58.2 GHz EARTH EXPLORATIONSATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	**57 - 58.2 GHz** EARTH EXPLORATION SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547		The band 55.78-59 GHz is identified for HDFS; Res.75 applies.
58.2 – 59 GHz EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	**58.2 – 59 GHz** EARTH EXPLORATION SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556		The band 55.78-59 GHz is identified for HDFS; Res.75 applies.

59 - 59.3 GHz EARTH EXPLORATION SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	**59 - 59.3 GHz** EARTH EXPLORATION SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	Government use	
59.3-64 GHz FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	**59.3-64 GHz** FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	SRD applications (61-61.5 GHz)	The band 61-61.5 GHz is designated for ISM applications (5.138). The band 59 – 61 GHz reserved for government use. Common international SRD band; see ITU-R Rec.SM.2153
64 – 65 GHz FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	**64 – 65 GHz** FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556		The band 64-66 GHz is identified for HDFS; Res.75 applies.
65 – 66 GHz EARTH EXPLORATION SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	**65 – 66 GHz** EARTH EXPLORATION SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547		The band 64-66 GHz is identified for HDFS; Res.75 applies.
66 – 71 GHz INTER-SATELLITE MOBILE 5.553 5.558 5.559AA MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	**66 – 71 GHz** INTER-SATELLITE MOBILE 5.553 5.558 5.559AA MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	IMT (66-71 GHz)	Res 241 (WRC-19) applies
71 – 74 GHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	**71 - 74 GHz** FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	Fixed links (71-76 GHz)	E-band PTP links
74 – 76 GHz FIXED FIXED-SATELLITE (space-to-Earth)	**74 – 76 GHz** FIXED FIXED-SATELLITE (space-to-Earth)	Fixed links (71-76 GHz)	E-band PTP links

MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.561	MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.561		
76 - 77.5 GHz RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	**76 - 77.5 GHz** RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	SRD – Road Transport and Traffic Telematics Radar (76 – 77 GHz)	Common international SRD band; see ITU-R Rec.SM.2153 and Rec.M.1452
77.5 - 78 GHz AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.559B Radio astronomy Space research (space-to-Earth) 5.149	**77.5 - 78 GHz** AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.559B Radio astronomy Space research (space-to-Earth) 5.149		
78 – 79 GHz RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) 5.149 5.560	**78 – 79 GHz** RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) 5.149 5.560		
79 – 81 GHz RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	**79 – 81 GHz** RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149		

81 – 84 GHz FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY Space research (space-to-Earth) 5.149 5.561A	**81 – 84 GHz** FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY Space Research (space-to-Earth) 5.149 5.561A	Fixed links (81-86 GHz)	E-Band PTP links
84 – 86 GHz FIXED 5.338A FIXED-SATELLITE (Earth-to-space) 5.561B MOBILE RADIO ASTRONOMY 5.149	**84 – 86 GHz** FIXED 5.338A FIXED-SATELLITE (Earth-to-space) 5.561B MOBILE RADIO ASTRONOMY 5.149	Fixed links (81-86 GHz)	E-Band PTP links
86 – 92 GHz EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	**86 – 92 GHz** EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340		
92 – 94 GHz FIXED 5.338A MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	**92 – 94 GHz** FIXED 5.338A MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149		
94 - 94.1 GHz EARTH EXPLORATIONSATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	**94 - 94.1 GHz** EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A		
94.1 – 95 GHz FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	**94.1 - 95 GHz** FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149		

95 - 100 GHz FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	**95 – 100 GHz** FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554		

ANNEX A Satellite planned bands orbital slots relevant to Eswatini.

Satellite orbital slots relevant to Eswatini pertaining to Appendix 30 (BSS), Appendix 30A (BSS Feeder Links) and Appendix 30B (FSS):

Nr.	Country Name	ITU Symbol	APP30/30A Orbital slot	APP30B Orbital slot
1	Swaziland	SWZ	4.80	30.10

ANNEX B Satellite planned bands relevant to Eswatini

Satellite frequency bands relevant to Eswatini pertaining to Appendix 30 (BSS), Appendix 30A (BSS Feeder Links) and Appendix 30B (FSS) are:

APP30: 11.7–12.5GHz

APP30A: 17.3–18.1GHz

APP30B: 4500– 4800MHz, space-to-Earth

6725–7025MHz, Earth-to-space

10.7–10.95GHz, space-to-Earth

11.2–11.45GHz, space-to-Earth

12.75–13.25GHz, Earth-to-space

ANNEX C SADC footnotes relevant to the National Frequency Allocation Plan 2020

SADC18(5 650-5 725 MHz)

Additional allocation: In SWZ and TZA the band 5650-5850 MHz is also allocated to the fixed and mobile service on a primary basis.

ANNEX D Footnotes which have Eswatini name included

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)

5.87 Additional allocation: in Angola, Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia and Niger, the frequency band 526.5-535 kHz is also allocated to the mobile service on a secondary basis. (WRC-19)

5.107 Additional allocation: in Saudi Arabia, Eritrea, Eswatini, Ethiopia, Iraq, Libya and Somalia, the frequency band 2 160-2 170 kHz is also allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis. The mean power of stations in these services shall not exceed 50 W. (WRC-19)

5.123 Additional allocation: in Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Zambia and Zimbabwe, the frequency band 3 900-3 950 kHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. 9.21. (WRC-19)

5.164 Additional allocation: in Albania, Algeria, Germany, Austria, Belgium, Bosnia and Herzegovina, Botswana, Bulgaria, Côte d'Ivoire, Croatia, Denmark, Spain, Estonia, Eswatini, Finland, France, Gabon, Greece, Hungary, Ireland, Israel, Italy, Jordan, Lebanon, Libya, Liechtenstein, Lithuania, Luxembourg, Madagascar, Mali, Malta, Morocco, Mauritania, Monaco, Montenegro, Nigeria, Norway, the Netherlands, Poland, Syrian Arab Republic, Slovakia, Czech Rep., Romania, the United Kingdom, Serbia, Slovenia, Sweden, Switzerland, Chad, Togo, Tunisia and Turkey, the frequency band 47-68 MHz, in South Africa the frequency band 47-50 MHz, and in Latvia the frequency bands 48.5-56.5 MHz and 58-68 MHz, are also allocated to the land mobile service on a primary basis. However, stations of the land mobile service in the countries mentioned in connection with each frequency band referred to in this footnote shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations of countries other than those mentioned in connection with the frequency band. (WRC-19).

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

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

5.212 Alternative allocation: in Angola, Botswana, Cameroon, the Central African Rep., Congo (Rep. of the), Eswatini, Gabon, Gambia, Ghana, Guinea, Iraq, Jordan, Lesotho, Liberia, Libya, Malawi, Mozambique, Namibia, Niger, Oman, Uganda, Syrian Arab Republic, the Dem. Rep. of the Congo, Rwanda, Sierra Leone, South Africa, Chad, Togo, Zambia and Zimbabwe, the frequency band 138-144 MHz is allocated to the fixed and mobile services on a primary basis. (WRC-19)

5.221 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).

5.252 Alternative allocation: in Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Zambia and Zimbabwe, the frequency bands 230-238 MHz and 246-254 MHz are allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. 9.21. (WRC-19).

5.296 Additional allocation: in Albania, Germany, Angola, Saudi Arabia, Austria, Bahrain, Belgium, Benin, Bosnia and Herzegovina, Botswana, Bulgaria, Burkina Faso, Burundi, Cameroon, Vatican, Congo (Rep. of the), Côte d'Ivoire, Croatia, Denmark, Djibouti, Egypt, United Arab Emirates, Spain, Estonia, Eswatini, Finland, France, Gabon, Georgia, Ghana, Hungary, Iraq, Ireland, Iceland, Israel, Italy, Jordan, Kenya, Kuwait, Lesotho, Latvia, Lebanon, Libya, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Malawi, Mali, Malta, Morocco, Mauritius, Mauritania, Moldova, Monaco, Mozambique, Namibia, Niger, Nigeria, Norway, Oman, Uganda, the Netherlands, Poland, Portugal, Qatar, the Syrian Arab Republic, Slovakia, the Czech Republic, Romania, the United Kingdom, Rwanda, San Marino, Serbia, Sudan, South Africa, Sweden, Switzerland, Tanzania, Chad, Togo, Tunisia, Turkey, Ukraine, Zambia and Zimbabwe, the frequency band 470-694 MHz is also allocated on a secondary basis to the land mobile service, intended for applications ancillary to broadcasting and programme-making. Stations of the land mobile service in the countries listed in this footnote shall not cause harmful interference to existing or planned stations operating in accordance with the Table in countries other than those listed in this footnote. (WRC-19).

5.346 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).

5.401 In Angola, Australia, Bangladesh, China, Eritrea, Eswatini, Ethiopia, India, Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Syrian Arab Republic, Dem. Rep. of the Congo, Sudan, Togo and Zambia, the frequency band 2 483.5-2 500 MHz was already allocated on a primary basis to the radiodetermination- satellite service before WRC-12, subject to agreement obtained under No. 9.21 from countries not listed in this provision. Systems in the radiodetermination-satellite service for which complete coordination information has been received by the Radiocommunication Bureau before 18 February 2012 will retain their regulatory status, as of the date of receipt of the coordination request information. (WRC-19).

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).

5.441B 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 dB (W/ (m^2 · 1 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).

5.453 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).

5.468 Additional allocation: in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burundi, Cameroon, China, Congo

(Rep. of the), Djibouti, Egypt, the United Arab Emirates, Eswatini, Gabon, Guyana, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Jordan, Kenya, Kuwait, Lebanon, Libya, Malaysia, Mali, Morocco, Mauritania, Nepal, Nigeria, Oman, Uganda, Pakistan, Qatar, Syrian Arab Republic, the Dem. People's Rep. of Korea, Senegal, Singapore, Somalia, Sudan, Chad, Togo, Tunisia and Yemen, the frequency band 8 500-8 750 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-19).

5.505 Additional allocation: in Algeria, Saudi Arabia, Bahrain, Botswana, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), Korea (Rep. of), Djibouti, Egypt, the United Arab Emirates, Eswatini, Gabon, Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Oman, the Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, South Sudan, Chad, Viet Nam and Yemen, the frequency band 14-14.3 GHz is also allocated to the fixed service on a primary basis. (WRC-19).

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).