



الخطة الوطنية لتوزيع الطيف الترددي

National Spectrum Allocations Plan



www.tra.gov.om

PO Box: 3555, PC: 1111A'Seeb, Sultanate of Oman | Tel: +968 24 222 222 | Fax: +968 24 222 284 |

Email: traoman@tra.gov.om

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Replacement

This document replaces the National Frequency Allocation Plan edition 2020 issued by the Telecommunications Regulatory Authority of the Sultanate of Oman.

Clarifications and Corrections

Radio Spectrum Sector (RSS) can provide clarification of the information contained in this document when requested and would appreciate receiving suggestions for its improvement. Such matters may be emailed to rss@tra.gov.om.

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Terms and Definitions

1. Terms and definitions

1.1 General terms

- **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).
- **Radio:** A general term applied to the use of *radio waves*.
- **Radio waves or hertzian waves:** Electromagnetic waves of frequencies arbitrarily lower than 3 000 GHz, propagated in space without artificial guide.
- **Radiocommunication:** *Telecommunication* by means of *radio waves* (CS) (CV).
- **Terrestrial radiocommunication:** Any *radiocommunication* other than *space radiocommunication* or *radio astronomy*.
- **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.
- **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*.
- **Radionavigation:** *Radiodetermination* used for the purposes of navigation, including obstruction warning.
- **Radiolocation:** *Radiodetermination* used for purposes other than those of *radionavigation*.
- **Radio direction-finding:** *Radiodetermination* using the reception of *radio waves* for the purpose of determining the direction of a *station* or object.
- **Radio astronomy:** Astronomy based on the reception of *radio waves* of cosmic origin.
- **Coordinated Universal Time (UTC):** Time scale, based on the second (SI), as described in Resolution 655(Rev.WRC-23). (WRC-23)
- **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*.

1.2 Specific terms related to frequency management

- **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.

- *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.

1.3 *Radio services*

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

In these Regulations, unless otherwise stated, any radiocommunication service relates to *terrestrial radiocommunication*.

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

- *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.

- *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 radiobeacon stations* may also participate in this service.
- *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.

- *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.

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

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

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

* (R): route.

** (OR): off-route.

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

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

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

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

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

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

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

- *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*.
- *Radio astronomy service:* A service involving the use of radio astronomy.
- *Safety service:* Any radiocommunication service used permanently or temporarily for the safeguarding of human life and property.
- *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*.

1.4 Radio stations and systems

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

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

- *Terrestrial station:* A station effecting terrestrial radiocommunication.
 - In these Regulations, unless otherwise stated, any *station* is a terrestrial station.
- *Earth station:* A station located either on the Earth's surface or within the major portion of the Earth's atmosphere and intended for communication:
 - with one or more *space stations*; or
 - with one or more *stations* of the same kind by means of one or more reflecting *satellites* or other objects in space.
- *Space station:* A station located on an object which is beyond, is intended to go beyond, or has been beyond, the major portion of the Earth's atmosphere.
- *Survival craft station:* A mobile station in the *maritime mobile service* or the *aeronautical mobile service* intended solely for survival purposes and located on any lifeboat, life-raft or other survival equipment.
- *Fixed station:* A station in the *fixed service*.
- *High altitude platform station:* A station located on an object at an altitude of 20 to 50 km and at a specified, nominal, fixed point relative to the Earth.
- *Mobile station:* A station in the *mobile service* intended to be used while in motion or during halts at unspecified points.
- *Mobile earth station:* An *earth station* in the *mobile-satellite service* intended to be used while in motion or during halts at unspecified points.
- *Land station:* A station in the *mobile service* not intended to be used while in motion.

- *Land earth station:* An earth station in the *fixed-satellite service* or, in some cases, in the *mobile-satellite service*, located at a specified fixed point or within a specified area on land to provide a *feeder link* for the *mobile-satellite service*.
- *Base station:* A land station in the *land mobile service*.
- *Base earth station:* An earth station in the *fixed-satellite service* or, in some cases, in the *land mobile-satellite service*, located at a specified fixed point or within a specified area on land to provide a *feeder link* for the *land mobile-satellite service*.
- *Land mobile station:* A mobile station in the *land mobile service* capable of surface movement within the geographical limits of a country or continent.
- *Land mobile earth station:* A mobile earth station in the *land mobile-satellite service* capable of surface movement within the geographical limits of a country or continent.
- *Coast station:* A land station in the *maritime mobile service*.
- *Coast earth station:* An earth station in the *fixed-satellite service* or, in some cases, in the *maritime mobile-satellite service*, located at a specified fixed point on land to provide a *feeder link* for the *maritime mobile-satellite service*.
- *Ship station:* A mobile station in the *maritime mobile service* located on board a vessel, which is not permanently moored, other than a *survival craft station*.
- *Ship earth station:* A mobile earth station in the *maritime mobile-satellite service* located on board ship.
- *On-board communication station:* A low-powered mobile station in the *maritime mobile service* intended for use for internal communications on board a ship, or between a ship and its lifeboats and life-rafts during lifeboat drills or operations, or for communication within a group of vessels being towed or pushed, as well as for line handling and mooring instructions.
- *Port station:* A coast station in the *port operations service*.
- *Aeronautical station:* A land station in the *aeronautical mobile service*.

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

- *Aeronautical earth station:* An earth station in the *fixed-satellite service*, or, in some cases, in the *aeronautical mobile-satellite service*, located at a specified fixed point on land to provide a *feeder link* for the *aeronautical mobile-satellite service*.
- *Aircraft station:* A mobile station in the *aeronautical mobile service*, other than a *survival craft station*, located on board an aircraft.
- *Aircraft earth station:* A mobile earth station in the *aeronautical mobile-satellite service* located on board an aircraft.
- *Broadcasting station:* A station in the *broadcasting service*.
- *Radiodetermination Station:* A station in the *radiodetermination service*.
- *Radionavigation mobile station:* A station in the *radionavigation service* intended to be used while in motion or during halts at unspecified points.

- *Radionavigation land station*: A station in the *radionavigation service* not intended to be used while in motion.
- *Radiolocation mobile station*: A station in the *radiolocation service* intended to be used while in motion or during halts at unspecified points.
- *Radiolocation land station*: A station in the *radiolocation service* not intended to be used while in motion.
- *Radio direction-finding station*: A *radiodetermination station* using *radio direction-finding*.
- *Radiobeacon station*: A station in the *radionavigation service* the *emissions* of which are intended to enable a *mobile station* to determine its bearing or direction in relation to the radiobeacon station.
- *Emergency position-indicating radiobeacon station*: A station in the *mobile service* the *emissions* of which are intended to facilitate search and rescue operations.
- *Satellite emergency position-indicating radiobeacon*: An *earth station* in the *mobile-satellite service* the *emissions* of which are intended to facilitate search and rescue operations.
- *Standard frequency and time signal station*: A station in the *standard frequency and time signal service*.
- *Amateur station*: A station in the *amateur service*.
- *Radio astronomy station*: A station in the *radio astronomy service*.
- *Experimental station*: A station utilizing *radio waves* in experiments with a view to the development of science or technique.

This definition does not include *amateur stations*.

- *Ship's emergency transmitter*: A ship's transmitter to be used exclusively on a distress frequency for distress, urgency, or safety purposes.
- *Radar*: A *radiodetermination* system based on the comparison of reference signals with radio signals reflected, or retransmitted, from the position to be determined.
- *Primary radar*: A *radiodetermination* system based on the comparison of reference signals with radio signals reflected from the position to be determined.
- *Secondary radar*: A *radiodetermination* system based on the comparison of reference signals with radio signals retransmitted from the position to be determined.
- *Radar beacon (racon)*: A transmitter-receiver associated with a fixed navigational mark which, when triggered by a *radar*, automatically returns a distinctive signal which can appear on the display of the triggering *radar*, providing range, bearing and identification information.
- *Instrument landing system (ILS)*: A *radionavigation* system which provides aircraft with horizontal and vertical guidance just before and during landing and, at certain fixed points, indicates the distance to the reference point of landing.
- *Instrument landing system localizer*: A system of horizontal guidance embodied in the *instrument landing system* which indicates the horizontal deviation of the aircraft from its optimum path of descent along the axis of the runway.

- *Instrument landing system glide path*: A system of vertical guidance embodied in the *instrument landing system* which indicates the vertical deviation of the aircraft from its optimum path of descent.
- *Marker beacon*: A transmitter in the *aeronautical radionavigation service*, which radiates vertically a distinctive pattern for providing position information to aircraft.
- *Radio altimeter*: *Radionavigation* equipment, on board an aircraft or *spacecraft*, used to determine the height of the aircraft or the *spacecraft* above the Earth's surface or another surface.
- *Meteorological aids land station*: A station in the *meteorological aids service* not intended to be used while in motion.
- *Meteorological aids mobile station*: A station in the *meteorological aids service* intended to be used while in motion or during halts at unspecified points.
- *Radiosonde*: An automatic radio transmitter in the *meteorological aids service* usually carried on an aircraft, free balloon, kite or parachute, and which transmits meteorological data.
- *Adaptive system*: A radiocommunication system, which varies its radio characteristics according to channel quality.
- *Space system*: Any group of cooperating *earth stations* and/or *space stations* employing *space radiocommunication* for specific purposes.
- *Satellite system*: A *space system* using one or more artificial earth *satellites*.
- *Satellite network*: A *satellite system* or a part of a *satellite system*, consisting of only one *satellite* and the cooperating *earth stations*.
- *Satellite link*: A radio link between a transmitting *earth station* and a receiving *earth station* through one *satellite*.

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

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

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

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

1.5 Operational terms

- *Public correspondence*: Any *telecommunication*, which the offices and *stations* must, by reason of their being at the disposal of the public, accept for transmission (CS).

- *Telegraphy*¹: A form of telecommunication in which the transmitted information is intended to be recorded on arrival as a graphic document; the transmitted information may sometimes be presented in an alternative form or may be stored for subsequent use (CS 1016).
- *Telegram*: Written matter intended to be transmitted by *telegraphy* for delivery to the addressee. This term also includes *radiotelegrams* unless otherwise specified (CS).

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

- *Radiotelegram*: A *telegram*, originating in or intended for a *mobile station* or a *mobile earth station* transmitted on all or part of its route over the *radiocommunication* channels of the *mobile service* or of the *mobile-satellite service*.
- *Radiotelex call*: A telex call, originating in or intended for a *mobile station* or a *mobile earth station*, transmitted on all or part of its route over the *radiocommunication* channels of the *mobile service* or the *mobile-satellite service*.
- *Frequency-shift telegraphy*: *Telegraphy* by frequency modulation in which the telegraph signal shifts the frequency of the carrier between predetermined values.
- *Facsimile*: A form of *telegraphy* for the transmission of fixed images, with or without half-tones, with a view to their reproduction in a permanent form.
- *Telephony*: A form of *telecommunication* primarily intended for the exchange of information in the form of speech (CS 1017).
- *Radiotelephone call*: A telephone call, originating in or intended for a *mobile station* or a *mobile earth station*, transmitted on all or part of its route over the *radiocommunication* channels of the *mobile service* or of the *mobile-satellite service*.
- *Simplex operation*: Operating method in which transmission is made possible alternately in each direction of a *telecommunication* channel, for example, by means of manual control².
- *Duplex operation*: Operating method in which transmission is possible simultaneously in both directions of a *telecommunication* channel²
- *Semi-duplex operation*: A method, which is *simplex operation* at one end of the circuit and *duplex operation* at the other².
- *Television*: A form of *telecommunication* for the transmission of transient images of fixed or moving objects.
- *Individual reception* (in the broadcasting-satellite service): The reception of *emissions* from a *space station* in the *broadcasting-satellite service* by simple domestic installations and in particular those possessing small antennae.
- *Community reception* (in the broadcasting-satellite service): The reception of *emissions* from a *space station* in the *broadcasting-satellite service* by receiving equipment, which in some cases may be complex and have antennae larger than those used for *individual reception*, and intended for use:

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

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

- by a group of the general public at one location; or
- through a distribution system covering a limited area.
- *Telemetry*: The use of *telecommunication* for automatically indicating or recording measurements at a distance from the measuring instrument.
- *Radiotelemetry*: *Telemetry* by means of *radio waves*.
- *Space Telemetry*: The use of *telemetry* for the transmission from a *space station* of results of measurements made in a *spacecraft*, including those relating to the functioning of the *spacecraft*.
- *Telecommand*: The use of *telecommunication* for the transmission of signals to initiate, modify or terminate functions of equipment at a distance.
- *Space telecommand*: The use of *radiocommunication* for the transmission of signals to a *space station* to initiate, modify or terminate functions of equipment on an associated space object, including the *space station*.
- *Space tracking*: Determination of the *orbit*, velocity or instantaneous position of an object in space by means of *radiodetermination*, excluding *primary radar*, for the purpose of following the movement of the object.

1.6 *Characteristics of emissions and radio equipment*

- *Radiation*: The outward flow of energy from any source in the form of *radio waves*.
- *Emission*: *Radiation* produced, or the production of *radiation*, by a radio transmitting *station*.

For example, the energy radiated by the local oscillator of a radio receiver would not be an emission but a *radiation*.
- *Class of emission*: The set of characteristics of an *emission*, designated by standard symbols, e.g. type of modulation of the main carrier, modulating signal, type of information to be transmitted, and also, if appropriate, any additional signal characteristics.
- *Single-sideband emission*: An amplitude modulated *emission* with one sideband only.
- *Full carrier single-sideband emission*: A *single-sideband emission* without reduction of the carrier.
- *Reduced carrier single-sideband emission*: A *single-sideband emission* in which the degree of carrier suppression enables the carrier to be reconstituted and to be used for demodulation.
- *Suppressed carrier single-sideband emission*: A *single-sideband emission* in which the carrier is virtually suppressed and not intended to be used for demodulation.
- *Out-of-band emission*: *Emission* on a frequency or frequencies immediately outside the *necessary bandwidth* which results from the modulation process, but excluding *spurious emissions*.
- *Spurious emission*: *Emission* on a frequency or frequencies which are outside the *necessary bandwidth* and the level of which may be reduced without affecting the corresponding transmission of information. Spurious emissions include harmonic *emissions*, parasitic *emissions*, intermodulation products and frequency conversion products, but exclude *out-of-band emissions*.
- *Unwanted emissions*: Consist of *spurious emissions* and *out-of-band emissions*.
- *Assigned frequency band*: The frequency band within which the *emission* of a *station* is authorized; the width of the band equals the *necessary bandwidth* plus twice the absolute value

of the *frequency tolerance*. Where *space stations* are concerned, the assigned frequency band includes twice the maximum Doppler shift that may occur in relation to any point of the Earth's surface.

- *Assigned frequency*: The center of the frequency band assigned to a *station*.
- *Characteristic frequency*: A frequency, which can be easily identified and measured in a given *emission*.

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

- *Reference frequency*: A frequency having a fixed and specified position with respect to the *assigned frequency*. The displacement of this frequency with respect to the *assigned frequency* has the same absolute value and sign that the displacement of the *characteristic frequency* has with respect to the center of the frequency band occupied by the *emission*.
- *Frequency tolerance*: The maximum permissible departure by the center frequency of the frequency band occupied by an *emission* from the *assigned frequency* or, by the *characteristic frequency* of an *emission* from the *reference frequency*. Table of frequency tolerance presented in Appendix 2 to this Handbook.

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

- *Necessary bandwidth*: For a given *class of emission*, the width of the frequency band which is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions.
- *Occupied bandwidth*: The width of a frequency band such that, below the lower and above the upper frequency limits, the *mean powers* emitted are each equal to a specified percentage $\beta/2$ of the total *mean power* of a given *emission*.

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

- *Right-hand (clockwise) polarized wave*: An elliptically-or circularly-polarized wave, in which the electric field vector, observed in any fixed plane, normal to the direction of propagation, whilst looking in the direction of propagation, rotates with time in a right-hand or clockwise direction.
- *Left-hand (anticlockwise) polarized wave*: An elliptically-or circularly-polarized wave, in which the electric field vector, observed in any fixed plane, normal to the direction of propagation, whilst looking in the direction of propagation, rotates with time in a left-hand or anticlockwise direction.
- *Power*: Whenever the power of a radio transmitter, etc. is referred to it shall be expressed in one of the following forms, according to the class of *emission*, using the arbitrary symbols indicated:
 - *peak envelope power* (PX or pX);
 - *mean power* (PY or pY);
 - *carrier power* (PZ or pZ).

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

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

- *Peak envelope power* (of a radio transmitter): The average power supplied to the antenna transmission line by a transmitter during one radio frequency cycle at the crest of the modulation envelope taken under normal operating conditions.
- *Mean power* (of a radio transmitter): The average power supplied to the antenna transmission line by a transmitter during an interval of time sufficiently long compared with the lowest frequency encountered in the modulation taken under normal operating conditions.
- *Carrier power* (of a radio transmitter): The average power supplied to the antenna transmission line by a transmitter during one radio frequency cycle taken under the condition of no modulation.
- *Gain of an antenna*: The ratio, usually expressed in decibels, of the power required at the input of a loss-free reference antenna to the power supplied to the input of the given antenna to produce, in a given direction, the same field strength or the same power flux-density at the same distance. When not specified otherwise, the gain refers to the direction of maximum *radiation*. The gain may be considered for a specified polarization.

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

- a) absolute or isotropic gain (G_i), when the reference antenna is an isotropic antenna isolated in space;
 - b) gain relative to a half-wave dipole (G_d), when the reference antenna is a half-wave dipole isolated in space whose equatorial plane contains the given direction;
 - c) gain relative to a short vertical antenna (G_v), when the reference antenna is a linear conductor, much shorter than one quarter of the wavelength, normal to the surface of a perfectly conducting plane which contains the given direction.
- *Equivalent isotropically radiated power (e.i.r.p.)*: The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna (*absolute or isotropic gain*).
 - *Effective radiated power (e.r.p.)* (in a given direction): The product of the power supplied to the antenna and its *gain relative to a half-wave dipole* in a given direction.
 - *Effective monopole radiated power (e.m.r.p.)* (in a given direction): The product of the power supplied to the antenna and its *gain relative to a short vertical antenna* in a given direction.
 - *Troposphere scatter*: The propagation of *radio waves* by scattering as a result of irregularities or discontinuities in the physical properties of the troposphere.
 - *Ionospheric scatter*: The propagation of *radio waves* by scattering as a result of irregularities or discontinuities in the ionization of the ionosphere.

1.7 *Frequency sharing*

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

- *Permissible interference*³: Observed or predicted *interference* which complies with quantitative *interference* and sharing criteria contained in these Regulations or in ITU-R Recommendations or in special agreements as provided for in these Regulations.
- *Accepted interference*³: *Interference* at a higher level than that defined as *permissible interference* and which has been agreed upon between two or more administrations without prejudice to other administrations.
- *Harmful interference*: *Interference* which endangers the functioning of a *radionavigation service* or of other *safety services* or seriously degrades, obstructs, or repeatedly interrupts a *radiocommunication service* operating in accordance with Radio Regulations (CS).
- *Protection ratio* (R.F.): The minimum value of the wanted-to-unwanted signal ratio, usually expressed in decibels, at the receiver input, determined under specified conditions such that a specified reception quality of the wanted signal is achieved at the receiver output.
- *Coordination area*: When determining the need for coordination, the area surrounding an *earth station* sharing the same frequency band with *terrestrial stations*, or surrounding a transmitting *earth station* sharing the same bidirectionally allocated frequency band with receiving *earth stations*, beyond which the level of *permissible interference* will not be exceeded and coordination is therefore not required.
- *Coordination contour*: The line enclosing the *coordination area*.
- *Coordination distance*: When determining the need for coordination, the distance on a given azimuth from an *earth station* sharing the same frequency band with *terrestrial stations*, or from a transmitting *earth station* sharing the same bidirectionally allocated frequency band with receiving *earth stations*, beyond which the level of *permissible interference* will not be exceeded and coordination is therefore not required.
- *Equivalent satellite link noise temperature*: The noise temperature referred to the output of the receiving antenna of the *earth station* corresponding to the radio frequency noise power which produces the total observed noise at the output of the *satellite link* excluding noise due to *interference* coming from *satellite links* using other *satellites* and from terrestrial systems.
- *Effective boresight area* (of a steerable satellite beam): An area on the surface of the Earth within which the boresight of a *steerable satellite beam* is intended to be pointed.

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

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

1.8 Technical terms relating to space

- *Deep space*: Space at distances from the Earth equal to, or greater than, 2×10^6 km.
- *Spacecraft*: A man-made vehicle which is intended to go beyond the major portion of the Earth's atmosphere.

³ The terms “permissible interference” and “accepted interference” are used in the coordination of frequency assignments between administrations.

- *Satellite*: A body which revolves around another body of preponderant mass and which has a motion primarily and permanently determined by the force of attraction of that other body.
- *Active satellite*: A *satellite* carrying a *station* intended to transmit or retransmit radiocommunication signals.
- *Reflecting satellite*: A *satellite* intended to reflect radiocommunication signals.
- *Active sensor*: A measuring instrument in the *earth exploration-satellite service* or in the *space research service* by means of which information is obtained by transmission and reception of *radio waves*.
- *Passive sensor*: A measuring instrument in the *earth exploration-satellite service* or in the *space research service* by means of which information is obtained by reception of *radio waves* of natural origin.
- *Orbit*: The path, relative to a specified frame of reference, described by the center of mass of a *satellite* or other object in space subjected primarily to natural forces, mainly the force of gravity.
- *Inclination of an orbit* (of an earth satellite): The angle determined by the plane containing the *orbit* and the plane of the Earth's equator measured in degrees between 0° and 180° and in counter-clockwise direction from the Earth's equatorial plane at the ascending node of the *orbit*.
- *Period* (of a satellite): The time elapsing between two consecutive passages of a *satellite* through a characteristic point on its *orbit*.
- *Altitude of the apogee or of the perigee*: The altitude of the apogee or perigee above a specified reference surface serving to represent the surface of the Earth.
- *Geosynchronous satellite*: An earth *satellite* whose period of revolution is equal to the period of rotation of the Earth about its axis.
- *Geostationary satellite*: A *geosynchronous satellite* whose circular and direct *orbit* lies in the plane of the Earth's equator and which thus remains fixed relative to the Earth; by extension, a *satellite* which remains approximately fixed relative to the Earth.
- *Geostationary-satellite orbit*: The *orbit* of a *geosynchronous satellite* whose circular and direct *orbit* lies in the plane of the Earth's equator.
- *Steerable satellite beam*: A *satellite* antenna beam that can be re-pointed.

1.9 Additional definitions

- *Electromagnetic Wave polarization*: The orientation of electric field wave vector respect to a given direction.
- *Monitoring station*: An equipped station for doing measurement and investigation of received electromagnetic wave characteristics and authority.
- *National spectrum allocation chart*: A painted strips of nationally employed radio frequency allocation plan on a 70^{cm}×100^{cm} (or A0) sized paper sheet, which presents frequencies of edges of the allocated sub-bands, priority of allocations, type of radiocommunication services to which the frequency bands are allocated and informative notes. This chart may be updated in after the each World Radiocommunication Conference (WRC).


- *Short Range Device*: The term “Short Range Device” (SRD) is intended to cover the radio transmitters which provide either unidirectional or bi-directional communication and which have low capability of causing interference to other radio equipment. SRDs use either integral, dedicated or external antennas and all modes of modulation can be permitted subject to relevant standards. Due to the many different services provided by these devices, no description can be exhaustive; however, the following categories are amongst those covered:
 - Telecommand and Telecontrol
 - Telemetry
 - Alarms
 - Speech and Video.

ITU-R SM.1896 Recommendation is comprehensive reference to the utilized SRD applications worldwide.

- *LORAN*: Is a long range radio navigation systems used by ships or crafts to obtain a position fix. The system is based on the difference in transit time required for pulsed radio signals to arrive at the LORAN receiver from multiple synchronized omnidirectional transmitters. The receiving set provides a direct reading, in microsecond, of the time difference is measured between signals
- *MSI*: In the maritime mobile service, these frequencies are used exclusively for the transmission of maritime safety information (MSI) (including meteorological and navigational warnings and urgent information) by coast stations to ships, by means of narrow-band direct-printing telegraphy.
- *NAVTEX*: The NAVTEX system is used for the automatic broadcast of localized Maritime Safety Information (MSI) using Radio Telex (also known as Narrow Band Direct Printing, or NBDP). The system mainly operates in the Medium Frequency radio band just above and below the old 500 kHz Morse Distress frequency. System range is generally 300 or so nautical miles from the transmitter. The NAVTEX system is designed to be used in GMDSS Sea Area A2, and is utilized mainly by those countries with relatively small areas of coastline and/or sea areas to cover. Major areas of NAVTEX coverage include the Mediterranean Sea, the North Sea, coastal areas around Japan and areas around the North American continent. *DME (DISTANCE MEASURING EQUIPMENT)*: A system in the band 960-1 215 MHz in which the aircraft interrogator transmits a series of coded pulses which are received at the ground transponder and retransmitted on a new frequency 50 μ s later. By timing the period from transmission of the interrogating pulse to the reception of the transponder reply, a measure is obtained of the distance of the aircraft from the transponder. Usually associated with ILS, MLS or VOR facility. When associated with a VOR, the DME facility is co-located with the VOR facility.
- *SSR (SECONDARY SURVEILLANCE RADAR)*: The SSR system is used as an aid to air traffic services and it consists of two components: a ground interrogator and an airborne transponder. The ground interrogator can operate in different modes (A, B, C, D). Mode A is used to initiate a response from the aircraft transponder for identification and tracking; Mode C is used to initiate automatic pressure altitude transmission. The interrogation and control transmissions are in the ground to air direction on the centre frequency 1 030 MHz. The reply transmission, in the air to ground direction, is on the centre frequency 1 090 MHz. The transponder antenna system, installed onboard aircraft has an omnidirectional antenna pattern in the horizontal plane. The SSR system is intended to provide service under all weather conditions at all bearings and at all distances between 1.85 km and 370 km, and at all operational altitudes up to at least 30 480 m above mean sea level between at least the angles of elevation of 0.5° and 45°.
- *MLS (MICROWAVE LANDING SYSTEMS)*: MLS is a precision approach and landing guidance system that provides position information and various ground-to-air data. The position information is provided in a wide coverage sector and is determined by an azimuth angle measurement, an elevation angle measurement and a range (distance) measurement. The MLS equipment operates

on a frequency pairing basis with the DME equipment. Radiators in a linear array are fed sequentially from a microwave power source which produces a Time Referenced Scanning Beam (TRSB), that is equivalent to the source moving along a linear track. An aircraft will receive the signal with a Doppler shift which depends on the component of the apparent velocity of the source towards the aircraft, and is proportional to the cosine of the angle between the aircraft and the line of the transmitting array. To eliminate effects of frequency drift and Doppler shift due to the movement of the aircraft, the same R.F. signal is simultaneously radiated from an antenna. Azimuth guidance is obtained from a horizontal transmitting array, while a vertical array gives guidance in the elevation plane. A measure of the distance to touchdown is obtained using a Precision DME in a frequency paired relationship with the MLS. The sharing criteria between MLS and radionavigation-satellite service is available in ITU-R M.1582.

- **GLONASS:** The Global Navigation Satellite System (GLONASS) is based on a constellation of active satellites which continuously transmit coded signals in three frequency bands (1 598.0625 MHz to 1 605.3750 MHz , 1 242.9375 MHz to 1 248.6250 MHz) and 1201.7430 MHz to 1209.7800 MHz, which can be received by users anywhere on the Earth's surface to identify their position and velocity in real time based on ranging measurements. The system is a counterpart to the United States Global Positioning System (GPS) and both systems share the same principles in the data transmission and positioning methods. GLONASS is managed for the Russian Federation Government by the Russian Space Forces and the system is operated by the Coordination Scientific Information Center (KNITs) of the Ministry of Defense of the Russian Federation. The operational space segment of GLONASS consists of 24 satellites in three orbital planes with eight satellites in each plane. The three orbital planes are separated 120° relative to the equator, and the satellites are equally spaced by 45° in a plane. Each satellite operates in circular 19,100 km orbits at an inclination angle of 64.8° and each satellite completes an orbit in approximately 11 hours 15 minutes. ITU-R Recommendation M.1787 Annex1 provides characteristics of GLONASS radionavigation system.
- **GPS:** The Navigation System with Timing And Ranging (NAVSTAR) Global Positioning System (GPS) was conceived as a ranging system from known positions of satellites in space to unknown positions on land, sea, in air and space. The GPS constellation consists of 24 satellites in 6 orbital planes with 4 satellites in each plane. The ascending nodes of the orbital planes are separated by 60° and the planes are inclined 55° . Each GPS satellite is in an approximately circular, semi-synchronous (20,200 km altitude) orbit. The orbits of the GPS satellites are available by broadcast - superimposed on the GPS pseudorandom noise codes (PRN), or after post-processing to get precise ephemerides, they are available from organizations such as the Jet Propulsion Lab (JPL) or the International Geodetic Service (IGS) among others. The GPS receivers convert the satellite's signals into position, velocity, and time estimates for navigation, positioning, time dissemination, or geodesy. Each GPS satellite transmits data on two frequencies, L1 (1575.42 MHz) and L2 (1227.60 MHz). A third GPS channel centred at 1 176.45 MHz (GPS L5 signal) supports civil aviation applications. ITU-R Recommendation M.1787 Annex2 provides the characteristics of GPS radionavigation system.



2

National Frequency Allocations Table

2.1 Introduction

Table of frequency allocations presented herewith constitutes the document for regulation of the frequency allocations and the frequency utilization in the Sultanate of **Oman** by legal and physical entities which engaged in ordering, development and purchasing radio-electronic installations (REI) or in planning frequency use by the existing REI. The Table, however, does not present any right for a frequency band use (or a specific frequency) for development, production, import and operation of the REI without issue of duly completed authorization by Telecommunications Regulatory Authority (TRA) which is empowered for this duty by the Government of the Sultanate of **Oman**.

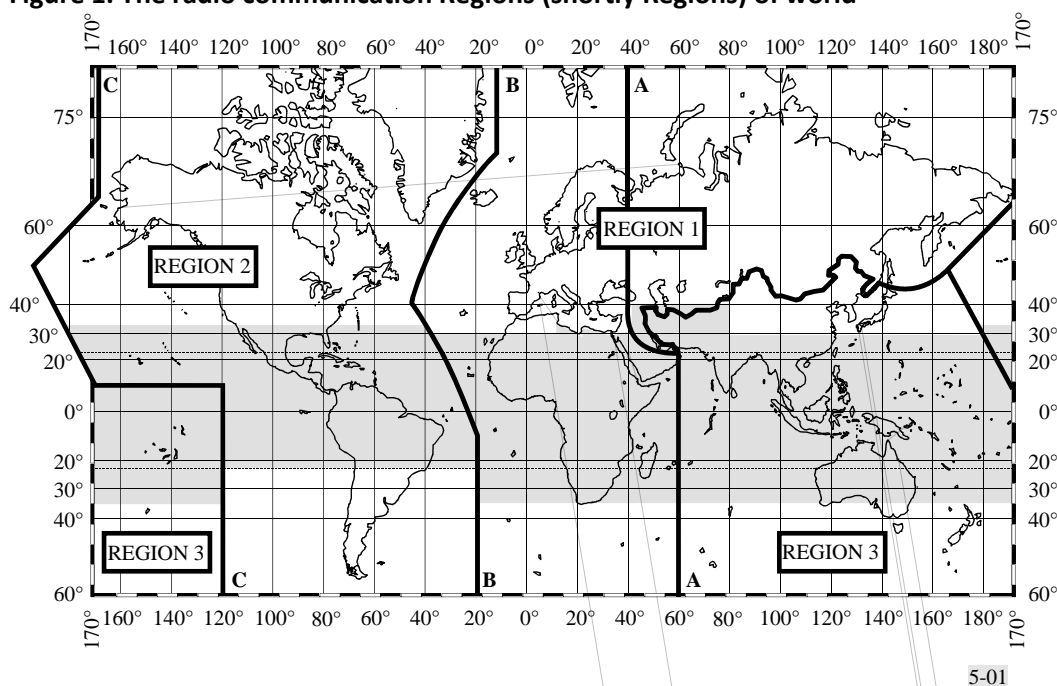
The content of frequency allocation table and accompanied regulations are always under the optimization of the Telecommunications Regulatory Authority for embracing the increasing demands of radio telecommunication sector, as far as compatible with national Telecommunication Act, international trends and existing applications.

2.2 Description of the Table

Regions and areas

For the allocation of frequencies the world has been divided into three Regions¹ as shown on the following map and described after map:

Figure 1. The radio communication Regions (shortly Regions) of world



The shaded part represents the Tropical Zones. Different Regions and Tropical Zones are distinguished in accordance to the following definitions in detail:

- *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,

¹ It should be noted that where the words “regions” or “regional” are without a capital “R” in these Regulations, they do not relate to the three Regions here defined for purposes of frequency allocation.

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.
- *Tropical Zone:* The whole of that area in Region 2 between the Tropics of Cancer and Capricorn, the whole of that area in Regions 1 and 3 contained between the parallels 30° North and 35° South with the addition of i) the area contained between the meridians 40° East and 80° East of Greenwich and the parallels 30° North and 40° North; and ii) that part of Libyan Arab Jamahiriya north of parallel 30° North. In Region 2, the Tropical Zone may be extended to parallel 33° North, subject to special agreements between the countries concerned in that Region.

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

- *Line A:* Line A extends from the North Pole along meridian 40° East of Greenwich to parallel 40° North; thence by great circle arc to the intersection of meridian 60° East and the Tropic of Cancer; thence along the meridian 60° East to the South Pole.
- *Line B:* Line B extends from the North Pole along meridian 10° West of Greenwich to its intersection with parallel 72° North; thence by great circle arc to the intersection of meridian 50° West and parallel 40° North; thence by great circle arc to the intersection of meridian 20° West and parallel 10° South; thence along meridian 20° West to the South Pole.
- *Line C:* Line C extends from the North Pole by great circle arc to the intersection of parallel 65° 30' North with the international boundary in Bering Strait; thence by great circle arc to the intersection of meridian 165° East of Greenwich and parallel 50° North; thence by great circle arc to the intersection of meridian 170° West and parallel 10° North; thence along parallel 10° North to its intersection with meridian 120° West; thence along meridian 120° West to the South Pole.

For the purposes of these Regulations, the term “African Broadcasting Area” means *a)* African countries, parts of countries, territories and groups of territories situated between the parallels 40° South and 30° North; *b)* islands in the Indian Ocean west of meridian 60° East of Greenwich, situated between the parallel 40° South and the great circle arc joining the points 45° East, 11° 30' North and 60° East, 15° North; and *c)* islands in the Atlantic Ocean east of line B (as defined above) of these Regulations, situated between the parallels 40° South and 30° North. Television-signal broadcasting in this region is governed by Geneva-89 regional agreement which includes the territory of **Oman**.

The “European Broadcasting Area” is bounded on the west by the western boundary of Region 1, on the east by the meridian 40° East of Greenwich and on the south by the parallel 30° North so as to include the northern part of Saudi Arabia and that part of those countries bordering the Mediterranean within these limits. In addition, Armenia, Azerbaijan, Georgia and those parts of the territories of Iraq, Jordan, Syrian Arab Republic, Turkey and Ukraine lying outside the above limits are included in the European Broadcasting Area.

The “European Maritime Area” is bounded to the north by a line extending along parallel 72° North from its intersection with meridian 55° East of Greenwich to its intersection with meridian 5° West, then along meridian 5° West to its intersection with parallel 67° North, thence along parallel 67° North to its intersection with meridian 32° West; to the west by a line extending along meridian 32° West to its intersection with parallel 30° North; to the south by a line extending along parallel 30° North to its intersection with meridian 43° East; to the east by a line extending along meridian 43° East to its

intersection with parallel 60° North, thence along parallel 60° North to its intersection with meridian 55° East and thence along meridian 55° East to its intersection with parallel 72° North.

A sub-Region is an area consisting of two or more countries in the same Region.

Categories of services and allocations

Primary and secondary services:

Where, in a box of the Table in Section 2.3 of this chapter, a band is indicated as allocated to more than one service, either on a worldwide or Regional basis, such services are listed in the following order:

- a) services the names of which are printed in “capitals” (example: FIXED); these are called “primary” services. Where a band is indicated in a footnote of the Table as allocated to a service “on a primary basis”, in an area smaller than a Region, or in a particular country, this is a primary service only in that area or country.
- b) services the names of which are printed in “normal characters” (example: Mobile); these are called “secondary” services. Stations of a secondary service shall not cause harmful interference to stations of primary services to which frequencies are already assigned or to which frequencies may be assigned at a later date. Moreover, Stations of a secondary service cannot claim protection from harmful interference from stations of a primary service to which frequencies are already assigned or may be assigned at a later date. However they can claim protection, from harmful interference from stations of the same or other secondary service(s) to which frequencies may be assigned at a later date. Where a band is indicated in a footnote of the Table as allocated to a service “on a secondary basis” in an area smaller than a Region, or in a particular country, this is a secondary service

Additional allocations:

Where a band is indicated in a footnote of the Table as “also allocated” to a service in an area smaller than a Region, or in a particular country, this is an “additional” allocation, i.e. an allocation which is added in this area or in this country to the service or services which are indicated in the Table. If the footnote does not include any restriction on the service or services concerned apart from the restriction to operate only in a particular area or country, stations of this service or these services shall have equality of right to operate with stations of the other primary service or services indicated in the Table.

Alternative allocations:

Where a band is indicated in a footnote of the Table as “allocated” to one or more services in an area smaller than a Region, or in a particular country, this is an “alternative” allocation, i.e. an allocation which replaces, in this area or in this country, the allocation indicated in the Table. If the footnote does not include any restriction on stations of the service or services concerned, apart from the restriction to operate only in a particular area or country, these stations of such a service or services shall have an equality of right to operate with stations of the primary service or services, indicated in the Table, to which the band is allocated in other areas or countries.

Miscellaneous provisions

Where it is indicated in these Regulations that a service or stations in a service may operate in a specific frequency band subject to not causing harmful interference to another service or to another station in the same service, this means also that the service which is subject to not causing harmful interference cannot claim protection from harmful interference caused by the other service or other station in the same service. Vice versa, where it is indicated in these Regulations that a service or stations in a service may operate in a specific frequency band subject to not claiming protection from another service or from another station in the same service, this means also that the service which is subject to not claiming protection shall not cause harmful interference to the other service or other station in the same service.

Except if otherwise specified in a footnote, the term “fixed service”, where appearing in Section 2.3 of this chapter, does not include systems using ionospheric scatter propagation.

Description of the National Frequency Allocation Table:

The Allocation table provides the general plan for frequency bands and the basic structure to ensure effective utilization of the spectrum and the prevention of radio frequency interference between services. It also provides more detailed information about how each band is actually planned and sub-divided to accommodate particular radio technologies and references to corresponding regulations.

The heading of the Table in Section 2.3 of this chapter includes four columns, as follow:

Column #1: correspond to Region1 as identified in Section 2.2. The inputs in this table are from ITU Radio Regulations.

Column #2: presents national frequency allocations.

Column #3: 'Priority' shows only systems and technologies that are capable to share and utilize the spectrum efficiently.

Column #4: 'Notes' indicates further limits on frequency bands, specific radio technologies and systems and relevant regulations applied to corresponding systems/technologies in column 'Priority'. Use of frequency spectrum for military purposes in exclusive military bands is not shown for security reasons but utilization must be in accordance with the ITU Radio Regulations, national regulations, world and regional agreements where the Sultanate is a part. Conformity of existing and planned services and systems with the National Frequency Allocations Table of Sultanate of **Oman** is a must.

The order of radio communication service listing in each band does not indicate relative priority within each category (Section 2.2). In the case where there is a parenthetical addition to an allocation in the Table, that service allocation is restricted to the type of operation so indicated.

Column#2not only indicates the frequency bands, but also identifies the category of users allowed to utilize it in the territory of **Oman**. One of following categories is assigned for each frequency band:

- MILITARY: Frequency bands provided exclusively for the use of stations for the national security purpose;
- CIVIL: Frequency bands provided exclusively for the use of stations for those purpose except security;
- SHARED: Frequency band provided for the shared use of both Military and Civil user categories.

The footnote references which appear in the two left columns of Table below the allocated service or services apply to more than one of the allocated services, or to the whole of the allocation concerned. If the footnote references appear to the right of the name of a service, it is applicable only to that particular service. In certain cases, the names of countries appearing in the footnotes have been simplified in order to shorten the text. Furthermore, applicable Region one footnotes under each frequency band analyzed and the most relevant ones referenced under the corresponding bands in the second column. The text of each footnote (international and national) is provided after the Table.

Assignment of the operational frequencies to be used by the civil and military REI in the corresponding civil, military or shared bands as well as designating the frequency bands (specific frequencies) for development of new (or modernized) REI is the duty of the Telecommunications Regulatory Authority (TRA) of the Sultanate of **Oman**.

2.3 Concerns on 6th revision

This (7th) edition of the Allocation table editorially updates the previously issued 6th edition. In this edition (7th), the Allocation table has been revised with taking into consideration Decision 133/2008 & its

amendments ,annexes and the new edition (2024) of the ITU-R Radio Regulations, which incorporates the decisions of the World Radiocommunication Conferences 2023(WRC-23).

2.4 Future revision

Telecommunication is growing very rapidly. Regulations in telecom must be as neutral and minimum as necessary to promote the deployment of spectrum efficient and advanced technologies and networks. These circumstances impose that the Allocation table shall be a dynamic document to reflect all these rapid changes. Therefore, the Allocation table will be revised and amended very often to reflect national and international regulations, at least, after each Regional and World Radiocommunication Conferences and as it was mentioned earlier (see Disclaimer) , TRA may , without prior notice, amend the content of this document.

2.5 Table of Frequency Allocations

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
Below 8.3 kHz	Below 8.3 kHz		
(Not allocated)	(Not allocated)		
5.53 5.54		SRD	100 Hz - 9 kHz: Inductive application Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
8.3-9 kHz	8.3-9 kHz (SHARED)		
METEOROLOGICAL AIDS 5.54A 5.54B 5.54C	METEOROLOGICAL AIDS 5.54A	SRD	100 Hz - 9 kHz: Inductive Application Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
9-11.3 kHz	9-11.3 kHz (SHARED)		
METEOROLOGICAL AIDS 5.54A	METEOROLOGICAL AIDS 5.54A		
RADIONAVIGATION	RADIONAVIGATION		
		SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
11.3-14 kHz	11.3-14 kHz (SHARED)		
RADIONAVIGATION	RADIONAVIGATION	Radionavigation aid	
		SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
14-19.95 kHz	14-19.95 kHz (SHARED)		
FIXED	FIXED		
MARITIME MOBILE 5.57	MARITIME MOBILE 5.57		
5.55 5.56	5.56	SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
19.95-20.05 kHz	19.95-20.05 kHz (SHARED)		
STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	Standard Frequency and Time Signal	Art. 26 ITU RR
		SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
			9

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
20.05-70 KHz	20.05-70 KHz (SHARED)		
FIXED	FIXED		
MARITIME MOBILE 5.57	MARITIME MOBILE 5.57		
5.56 5.58	5.56	SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
70-72 kHz	70-72 kHz (SHARED)		
RADIONAVIGATION 5.60	RADIONAVIGATION 5.60		
		SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
72-84 kHz	72-84 kHz (SHARED)		
FIXED	FIXED		
MARITIME MOBILE 5.57	MARITIME MOBILE 5.57		
RADIONAVIGATION 5.60	RADIONAVIGATION 5.60		
		SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.56	5.56		
84-86 kHz	84-86 kHz (SHARED)		
RADIONAVIGATION 5.60	RADIONAVIGATION 5.60		
			9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
86-90 kHz	86-90 kHz (SHARED)		
FIXED	FIXED		
MARITIME MOBILE 5.57	MARITIME MOBILE 5.57		
RADIONAVIGATION	RADIONAVIGATION		
		SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.56	5.56		
90-110 kHz	90-110 kHz (SHARED)		
RADIONAVIGATION 5.62	RADIONAVIGATION 5.62	Loran C	

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
Fixed	Fixed		
		SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.64	5.64		
110-112 kHz	110-112 kHz (SHARED)		
FIXED	FIXED		
MARITIME MOBILE	MARITIME MOBILE		
RADIONAVIGATION	RADIONAVIGATION		
		SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.64	5.64		
112-115 kHz	112-115 kHz (SHARED)		
RADIONAVIGATION 5.60	RADIONAVIGATION 5.60		
		SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
115-117.6 kHz	115-117.6 kHz (SHARED)		
RADIONAVIGATION 5.60	RADIONAVIGATION 5.60		
Fixed	Fixed		
Maritime mobile	Maritime mobile		
		SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.64 5.66	5.64		
117.6-126 kHz	117.6-126 kHz (SHARED)		
FIXED	FIXED		
MARITIME MOBILE	MARITIME MOBILE		
RADIONAVIGATION 5.60	RADIONAVIGATION 5.60		
		SRD	9-148.5kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.64	5.64		
126-129 kHz	126-129 kHz (SHARED)		
RADIONAVIGATION 5.60	RADIONAVIGATION 5.60		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
129-130 kHz	129-130 kHz (SHARED)		
FIXED	FIXED		
MARITIME MOBILE	MARITIME MOBILE		
RADIONAVIGATION 5.60	RADIONAVIGATION 5.60		
		SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.64	5.64		
130-135.7 kHz	130-135.7 kHz (SHARED)		
FIXED	FIXED		
MARITIME MOBILE	MARITIME MOBILE		
		SRD	9-148.5 kHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.64 5.67	5.64		
135.7-137.8 kHz	135.7-137.8 kHz (SHARED)		
FIXED	FIXED		
MARITIME MOBILE	MARITIME MOBILE		
Amateur 5.67A	Amateur 5.67A		
5.64 5.67 5.67B	5.64	SRD	9-148.5 KHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges Power & Limitations
137.8-148.5 kHz	137.8-148.5 kHz (SHARED)		
FIXED	FIXED		
MARITIME MOBILE	MARITIME MOBILE		
5.64 5.67	5.64	SRD	9-148.5 KHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
148.5-255 kHz	148.5-200 kHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	Regional agreement GE75
		SRD	148.5 kHz – 30 MHz: Inductive Application 9-315KHz : Medical implement

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
			Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
	200-255 kHz (SHARED)		
	AERONAUTICAL RADIONAVIGATION 5.70	Beacons (aeronautical)	
		SRD	148.5 kHz – 30 MHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.68 5.69 5.70			
255-283.5 kHz	255-283.5 kHz (SHARED)		
BROADCASTING	AERONAUTICAL RADIONAVIGATION 5.70	Beacons (aeronautical)	
AERONAUTICAL RADIONAVIGATION			
		SRD	148.5 kHz – 30 MHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.7			
283.5-315 kHz	283.5-315 kHz (SHARED)		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	Beacons (aeronautical)	Regional agreement GE85-EMA
MARITIME RADIONAVIGATION (radiobeacons) 5.73	MARITIME RADIONAVIGATION (radiobeacons) 5.73	Beacons (maritime)	Regional agreement GE85-EMA
		SRD	148.5 kHz – 30 MHz: Inductive Application 9-315KHz : Medical implement Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.74	5.74		
315-325 kHz	315-325 kHz (SHARED)		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	Beacons (aeronautical)	Regional agreement GE85-EMA
Maritime radionavigation (radiobeacons) 5.73	Maritime radionavigation (radiobeacons) 5.73	Beacons (maritime)	Regional agreement GE85-EMA
5.75		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
325-405 kHz	325-405 kHz (SHARED)		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	Beacons (aeronautical)	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
405-415 kHz	405-415 kHz (SHARED)		
RADIONAVIGATION 5.76	RADIONAVIGATION 5.76	Beacons (aeronautical)	

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		Beacons (maritime)	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
415-435 kHz	415-435 kHz (SHARED)		
MARITIME MOBILE 5.79	MARITIME MOBILE 5.79	Maritime	Regional agreement GE85-MM-R1
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	Beacons (aeronautical)	Regional agreement GE85-MM-R1
		SRD	148.5 kHz - 30 MHz Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
435-472 kHz	435-472 kHz (SHARED)		
MARITIME MOBILE 5.79	MARITIME MOBILE 5.79	Maritime	Regional agreement GE85-MM-R1
Aeronautical radionavigation 5.77	Aeronautical radionavigation		
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
		SRD	456.9-457.1 kHz: Tracking, Tracing and Data Acquisition applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.82	5.82		
472-479 kHz	472-479 kHz (SHARED)		
MARITIME MOBILE 5.79	MARITIME MOBILE 5.79	Maritime	Regional agreement GE85-MM-R1
Amateur 5.80A	Amateur 5.80A		
Aeronautical radionavigation 5.77 5.80	Aeronautical radionavigation		
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.80B 5.82	5.80B 5.82		
479-495 kHz	479-495 kHz (SHARED)		
MARITIME MOBILE 5.79 5.5.79A	MARITIME MOBILE 5.79 5.79A	Maritime	Regional agreement GE85-MM-R1
		Maritime safety information, NAVTEX	490 kHz using NBDP. Annex 6 List of the System of Safety services and Associated Frequencies Band
Aeronautical radionavigation 5.77 5.82	Aeronautical radionavigation 5.82	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
495-505 kHz	495-505 kHz (SHARED)		
MARITIME MOBILE 5.82C 5.82D	MARITIME MOBILE 5.82C 5.82D		
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
505-526.5 kHz	505-526.5 kHz (SHARED)		
MARITIME MOBILE 5.79 5.79A 5.84	MARITIME MOBILE 5.79 5.79A 5.84	Maritime	Regional agreement GE85-MM-R1
		NAVTEX transmission International	518 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	Beacons (aeronautical)	Regional agreement GE85-MM-R1
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
526.5-1 606.5 kHz	526.5-1 606.5 kHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	Regional agreement GE75
5.87 5.87A		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
1 606.5-1 625 kHz	1 606.5-1 625 kHz (SHARED)		
FIXED	FIXED		
MARITIME MOBILE 5.90	MARITIME MOBILE 5.90	Maritime	Regional agreement GE85-MM-R1
LAND MOBILE	LAND MOBILE		
5.92		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
1 625-1 635 kHz	1 625-1 635 kHz (SHARED)		
RADIOLOCATION	RADIOLOCATION	Radiodetermination applications	
5.93		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
1 635-1 800 kHz	1 635-1 800 kHz (SHARED)		
FIXED	FIXED	Fixed links	Art. 6 of GE85-MM-R1 applied
MARITIME MOBILE 5.90	MARITIME MOBILE 5.90	Maritime	Regional agreement GE85-MM-R1
LAND MOBILE	LAND MOBILE		
5.92 5.96	5.92	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
1 800-1 810 kHz	1 800-1 810 kHz (SHARED)		
RADIOLOCATION	RADIOLOCATION	Radiodetermination applications	
5.93		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
1 810-1 850 kHz	1 810-1 850 kHz (CIVIL)		
AMATEUR	AMATEUR	Amateur	
5.98 5.99 5.100		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
1 850-2 000 kHz	1 850-2 000 kHz (SHARED)		
FIXED	FIXED		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Maritime	Art. 52 ITU RR
5.92 5.96 5.103	5.92 5.103	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
2 000-2 025 kHz	2 000-2 025 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	Maritime	Art. 52 ITU RR
		Mobile applications	
5.92 5.103	5.92 5.103	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
2 025-2 045 kHz	2 025-2 045 kHz (SHARED)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	Maritime	Art. 52 ITU RR
		Mobile applications	
Meteorological aids 5.104	Meteorological aids 5.104	Oceanographic meteorological buoys	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.92 5.103	5.92 5.103		
2 045-2 160 kHz	2 045-2 160 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MARITIME MOBILE	MARITIME MOBILE	Maritime	Regional agreement GE85-MM-R1
LAND MOBILE	LAND MOBILE	Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.92	5.92		
2 160-2 170 kHz	2 160-2 170 kHz (SHARED)		
RADIOLOCATION	RADIOLOCATION	Radiodetermination applications	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.93 5.107			
2 170-2 173.5 kHz	2 170-2 173.5 kHz (SHARED)		
MARITIME MOBILE	MARITIME MOBILE	Maritime	Art. 52 ITU RR
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
2 173.5-2 190.5 kHz	2 173.5-2 190.5 kHz (SHARED)		
MOBILE (distress and calling)	MOBILE (distress and calling)	DSC for distress and calling	2187.5 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Maritime GMDSS distress and calling SAR	2182 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.108 5.109 5.110 5.111	5.108 5.109 5.110 5.111	Automatic Connection System	2174.5 kHz Recommendation ITU-R M.541
2 190.5-2 194 kHz	2 190.5-2 194 kHz (SHARED)		
MARITIME MOBILE	MARITIME MOBILE	Maritime	Art. 52 ITU RR
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
2 194-2 300 kHz	2 194-2 300 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	Maritime	Art. 52 ITU RR
		Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
5.92 5.103 5.112	5.92 5.103		
2 300-2 498 kHz	2 300-2 498 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	Maritime	Art. 52 ITU RR
		Mobile applications	
BROADCASTING 5.113	BROADCASTING 5.113	Broadcasting (tropical zones)	Subject to coordination (Art. 23 ITU RR)
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
5.103	5.103		
2 498-2 501 kHz	2 498-2 501 kHz (SHARED)		
STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	Standard Frequency and Time Signal	2 500 kHz. Art. 26 ITU RR
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
2 501-2 502 kHz	2 501-2 502 kHz (SHARED)		
STANDARD FREQUENCY AND TIME SIGNAL	STANDARD FREQUENCY AND TIME SIGNAL	Standard Frequency and Time Signal	Art. 26 ITU RR
Space Research	Space Research		
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
2 502-2 625 kHz	2 502-2 625 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	Maritime	Art. 52 ITU RR
		Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
5.92 5.103 5.114	5.92 5.103		
2 625-2 650 kHz	2 625-2 650 kHz (SHARED)		
MARITIME MOBILE	MARITIME MOBILE	Maritime	Art. 52 ITU RR
MARITIME RADIONAVIGATION	MARITIME RADIONAVIGATION		
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
5.92	5.92		
2 650-2 850 kHz	2 650-2 850 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	Maritime	Art. 52 ITU RR
		Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
5.92 5.103	5.92 5.103		
2 850-3 025 kHz	2 850-3 025 kHz (SHARED)		
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical mobile (R)	App. 27 ITU RR. Allotment plan

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.111 5.115	5.111 5.115	Telephony distress traffic and calling by Rescue centers	3 023 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
3 025-3 155 kHz	3 025-3 155 kHz (SHARED)		
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	App. 26 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz.: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
		GMDSS	3023KHz : SAR Annex 6 List of the System of Safety services and Associated Frequencies Band
3 155-3 200 kHz	3 155-3 200 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	Maritime	Art. 52 ITU RR
		Mobile applications	
5.116 5.117	5.116	SRD	3155-3400 kHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
3 200-3 230 kHz	3 200-3 230 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	Maritime	Art. 52 ITU RR
		Mobile applications	
BROADCASTING 5.113	BROADCASTING 5.113	Broadcasting (tropical zones)	Subject to coordination (Art. 23 ITU RR)
5.116	5.116	SRD	3155-3400 kHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
3 230-3 400 kHz	3 230-3 400 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Maritime	Art. 52 ITU RR
		Mobile applications	
BROADCASTING 5.113	BROADCASTING 5.113	Broadcasting (tropical zones)	Subject to coordination (Art. 23 ITU RR)
5.116 5.118	5.116	SRD	3155-3400 kHz.: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
3 400-3 500 kHz	3 400-3 500 kHz (SHARED)		
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical mobile (R)	App. 27 ITU RR. Allotment plan
3 500-3 800 kHz	3 500-3 800 kHz (SHARED)		
AMATEUR	AMATEUR	Amateur	
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Maritime	Art. 52 ITU RR
		Mobile applications	

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
5.92	5.92	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
3 800-3 900 kHz	3 800-3 900 kHz (SHARED)		
FIXED	FIXED	Fixed links	
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	
LAND MOBILE	LAND MOBILE	Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
3 900-3 950 kHz	3 900-3 950 kHz (SHARED)		
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	App. 26 ITU RR. Allotment plan
5.123		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
3 950-4 000 kHz	3 950-4 000 kHz (SHARED)		
FIXED	FIXED	Fixed links	
BROADCASTING	BROADCASTING	Broadcasting	Introduction of digital systems is encouraged
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
4 000-4 063 kHz	4 000-4 063 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MARITIME MOBILE 5.127	MARITIME MOBILE 5.127	Maritime	App. 25 ITU RR. Allotment plan
5.126		SRD	148.5 kHz - 30 MHz: Inductive applications 4059-4409 KHz : Railway Applications Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
4 063-4 438 kHz	4 063-4 438 kHz (SHARED)		
MARITIME MOBILE 5.79A 5.82D 5.109 5.110 5.130 5.131 5.132	MARITIME MOBILE 5.79A 5.82D 5.109 5.110 5.130 5.131 5.132	Maritime	App. 25 ITU RR. Allotment plan
		DSC calling	4208, 4208.5, 4209, 4219.5, 4220, 4220.5 kHz Appendix 17 ITU RR
		DSC distress and traffic	4207.5 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Mereological and navigational warning. Navigational Telex (NAVTEX)	4209.5 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Maritime Safety Information	4210 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Telephony distress traffic and calling by rescue centers	4125 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Automatic Connection System	4177.5 kHz Recommendation ITU-R M.541
5.128	5.128	SRD	148.5 kHz - 30 Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
4 438-4 488 kHz	4 438-4 488 kHz (SHARED)		
FIXED	FIXED	Fixed links	

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	Mobile applications	
Radiolocation 5.132A	Radiolocation 5.132A		
5.132B		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
4 488-4 650 kHz	4 488-4 650 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
4 650-4 700 kHz	4 650-4 700 kHz (SHARED)		
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical mobile (R)	App. 27 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
4 700-4 750 kHz	4 700-4 750 kHz (SHARED)		
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	App. 26 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
4 750-4 850 kHz	4 750-4 850 kHz (SHARED)		
FIXED	FIXED	Fixed links	
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	
LAND MOBILE	LAND MOBILE	Mobile applications	
BROADCASTING 5.113	BROADCASTING 5.113		Subject to coordination (Art. 23 ITU RR)
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
4 850-4 995 kHz	4 850-4 995 kHz (SHARED)		
FIXED	FIXED	Fixed links	
LAND MOBILE	LAND MOBILE	Mobile applications	
BROADCASTING 5.113	BROADCASTING 5.113	Broadcasting (tropical zones)	Subject to coordination (Art. 23 ITU RR)
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
4 995-5 003 kHz	4 995-5 003 kHz (SHARED)		
STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	Standard Frequency and Time Signal	5 000 kHz. Art. 26 ITU RR
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5 003-5 005 kHz	5 003-5 005 kHz (SHARED)		
STANDARD FREQUENCY AND TIME SIGNAL	STANDARD FREQUENCY AND TIME SIGNAL	Standard Frequency and Time Signal	Art. 26 ITU RR
Space research	Space research		
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
5 005-5 060 kHz	5 005-5 060 kHz (SHARED)		
FIXED	FIXED	Fixed links	
BROADCASTING 5.113	BROADCASTING 5.113	Broadcasting (tropical zones)	Subject to coordination (Art. 23 ITU RR)
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
5 060-5 250 kHz	5 060-5 250 kHz (SHARED)		
FIXED	FIXED	Fixed links	
Mobile except aeronautical mobile	Mobile except aeronautical mobile		
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
5.133			
5 250-5 275 kHz	5 250-5 275 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Mobile applications	
Radiolocation 5.132A	Radiolocation 5.132A		
5.133A		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
5 275-5 351.5 kHz	5 275-5 351.5 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
5 351.5-5 366.5 kHz	5 351.5-5 366.5 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Mobile applications	
Amateur 5.133B	Amateur 5.133B		
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
5 366.5-5 450 kHz	5 366.5-5 450 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
5 450-5 480 kHz	5 450-5 480 kHz (SHARED)		
FIXED	FIXED	Fixed links	
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	
LAND MOBILE	LAND MOBILE		
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
5 480-5 680 kHz	5 480-5 680 kHz (SHARED)		
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical mobile (R)	App. 27 ITU RR. Allotment plan

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		Telephony distress traffic and calling by rescue centers	5 680 kHz. Annex 6 List of the System of Safety services and Associated Frequencies Band
		SRD	148.5 kHz - 30 MHz: Inductive applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.111 5.115	5.111 5.115		
5 680-5 730 kHz	5 680-5 730 kHz (SHARED)		
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	App. 26 ITU RR. Allotment plan
		Telephony distress traffic and calling by rescue centers	5 680 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.111 5.115	5.111 5.115		
5 730-5 900 kHz	5 730-5 900 kHz (SHARED)		
FIXED	FIXED	Fixed links	
LAND MOBILE	LAND MOBILE	Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5 900-5 950 kHz	5 900-5 950 kHz (CIVIL)		
BROADCASTING 5.134	BROADCASTING 5.134	Broadcasting	Art. 12 ITU RR
5.136	5.136	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5 950-6 200 kHz	5 950-6 200 kHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	Art. 12 ITU RR
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
6 200-6 525 kHz	6 200-6 525 kHz (SHARED)		
MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137A	MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137A	Maritime	App. 25 ITU RR. Allotment plan
		DSC calling	6312.5, 6313, 6313.5, 6331, 6331.5, 6332 kHz Appendix 17 ITU RR
		DCS distress traffic	6312 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Maritime Safety Information	6314 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Telephony distress traffic and calling by rescue centers	6215 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Automatic Connection System	6268 kHz Recommendation ITU-R M.541
5.137	5.137	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
6 525-6 685 kHz	6 525-6 685 kHz (CIVIL)		
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical mobile (R)	App. 27 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
6 685-6 765 kHz	6 685-6 765 kHz (SHARED)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	App. 26 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
6 765-7 000 kHz	6 765-7 000 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.138	5.138	ISM	6765-6795 kHz
7 000-7 100 kHz	7 000-7 100 kHz (CIVIL)		
AMATEUR	AMATEUR	Amateur	
AMATEUR-SATELLITE	AMATEUR-SATELLITE		
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.140 5.141 5.141A			
7 100-7 200 kHz	7 100-7 200 kHz (CIVIL)		
AMATEUR	AMATEUR	Amateur	
	FIXED 5.141B		
	MOBILE except aeronautical mobile (R) 5.141B		
5.141A 5.141B		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
7 200-7 300 kHz	7 200-7 300 kHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	Art. 12 ITU RR
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
7 300-7 400 kHz	7 300-7 350 kHz (CIVIL)		
BROADCASTING 5.134	BROADCASTING 5.134	Broadcasting	Art. 12 ITU RR
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
	5.143 5.143B		
	7 350-7 400 kHz (CIVIL)		
	BROADCASTING 5.134	Broadcasting	Art. 12 ITU RR
	FIXED 5.143C	Fixed links	Priority is given to Broadcasting
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.143 5.143A 5.143B 5.143C 5.143D	5.143 5.143B		
7 400-7 450 kHz	7 400-7 450 kHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	Art. 12 ITU RR
	FIXED 5.143C	Fixed links	Priority is given to Broadcasting
			148.5 kHz - 30 MHz: Inductive applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.143B 5.143C	5.143B	SRD	
7 450-8 100 kHz	7 450-8 100 kHz (SHARED)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	Mobile applications	
5.144		SRD	148.5 kHz - 30 MHz.: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
8 100-8 195 kHz	8 100-8 195 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MARITIME MOBILE	MARITIME MOBILE	Maritime	App. 17 ITU RR. Channeling plan
		SRD	148.5 kHz - 30 MHz.: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
8 195-8 815 kHz	8 195-8 815 kHz (SHARED)		
MARITIME MOBILE 5.109 5.110 5.132 5.137A 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.137A 5.145	Maritime	App. 25 ITU RR. Allotment plan
		DSC calling	8415, 8415.5, 8416, 8436.5, 8437, 8437.5 kHz Appendix 17 ITU RR
		DSC distress traffic	8414.5 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Maritime Safety Information	8416.5 kHz 8364KHz : Annex 6 List of the System of Safety services and Associated Frequencies Band
		Telephony distress traffic and calling by rescue centers	8291 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Automatic Connection System	8376.5 kHz Recommendation ITU-R M.541
5.111	5.111	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
8 815-8 965 kHz	8 815-8 965 kHz (CIVIL)		
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical mobile (R)	App. 27 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz.: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
8 965-9 040 kHz	8 965-9 040 kHz (MILITARY)		
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	App. 26 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
9 040-9 305 kHz	9 040-9 305 kHz (SHARED)		
FIXED	FIXED	Fixed links	
		SRD	148.5 kHz - 30 MHz.: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
9 305-9 355 kHz	9 305-9 355 kHz (SHARED)		
FIXED	FIXED	Fixed links	
Radiolocation 5.145A	Radiolocation 5.145A		
5.145B		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
9 355-9 4000 kHz	9 355-9 400 kHz (SHARED)		
FIXED	FIXED	Fixed links	

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
9 400-9 500 kHz	9 400-9 500 kHz (CIVIL)		
BROADCASTING 5.134	BROADCASTING 5.134	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.146	5.146		
9 500-9 900 kHz	9 500-9 900 kHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
5.147	5.147	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
9 900-9 995 kHz	9 900-9 995 kHz (SHARED)		
FIXED	FIXED	Fixed links	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
9 995-10 003 kHz	9 995-10 003 kHz (SHARED)		
STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz)	Standard Frequency and Time Signal	10 000 kHz. Art. 26 ITU RR
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.111	5.111	SAR (communications)	10003 kHz (± 3 kHz) concerning manned space vehicles Annex 6 List of the System of Safety services and Associated Frequencies Band
10 003-10 005 kHz	10 003-10 005 kHz (SHARED)		
STANDARD FREQUENCY AND TIME SIGNAL	STANDARD FREQUENCY AND TIME SIGNAL	Standard Frequency and Time Signal	Art. 26 ITU RR
Space research	Space research		
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.111	5.111	SAR (communications)	10003 kHz (± 3 kHz) concerning manned space vehicles Annex 6 List of the System of Safety services and Associated Frequencies Band
10 005-10 100 kHz	10 005-10 100 kHz (CIVIL)		
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical mobile (R)	App. 27 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.111	5.111	SAR (communications)	10003 kHz (± 3 kHz) concerning manned space vehicles
10 100-10 150 kHz	10 100-10 150 kHz (SHARED)		
FIXED	FIXED		
Amateur	Amateur	Amateur	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
10 150-11 175 kHz	10 150-11 175 kHz (SHARED)		
FIXED	FIXED	Fixed links	
Mobile except aeronautical mobile (R)	Mobile except aeronautical mobile (R)		
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
11 175-11 275 kHz	11 175-11 275 kHz (SHARED)		
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	App. 26 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
11 275-11 400 kHz	11 275-11 400 kHz (SHARED)		
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical mobile (R)	App. 27 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
11 400-11 600 kHz	11 400-11 600 kHz (SHARED)		
FIXED	FIXED	Fixed links	
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
11 600-11 650 kHz	11 600-11 650 kHz (CIVIL)		
BROADCASTING 5.134	BROADCASTING 5.134	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
5.146	5.146	SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
11 650-12 050 kHz	11 650-12 050 kHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
5.147	5.147	SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
12 050-12 100 kHz	12 050-12 100 kHz (CIVIL)		
BROADCASTING 5.134	BROADCASTING 5.134	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
5.146	5.146	SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
12 100-12 230 kHz	12 100-12 230 kHz (SHARED)		
FIXED	FIXED	Fixed links	
		SRD	148.5 kHz - 30 MHz: Annex 2, Short Range Devices, Frequency Ranges & Power Limitations
12 230-13 200 kHz	12 230-13 200 kHz (SHARED)		
MARITIME MOBILE 5.109 5.110 5.132 5.137A 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.137A 5.145	Maritime	App. 25 ITU RR. Allotment plan
		DSC calling	12577.5, 12578, 12578.5, 12657, 12657.5, 12658 kHz Appendix 17 ITU RR
		DCS distress traffic	12577 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		Maritime Safety Information	12579 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Telephony distress traffic and calling by rescue centers	12290 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Automatic Connection System	12520 kHz Recommendation ITU-R M.541
		SRD	148.5 kHz - 30 MHz: Inductive applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
13 200-13 260 kHz	13 200-13 260 kHz (SHARED)		
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	App. 26 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
13 260-13 360 kHz	13 260-13 360 kHz (SHARED)		
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical mobile (R)	App. 27 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
13 360-13 410 kHz	13 360-13 410 kHz (SHARED)		
FIXED	FIXED	Fixed links	
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149	5.149	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
13 410-13 450 kHz	13 410-13 450 kHz (SHARED)		
FIXED	FIXED	Fixed links	
Mobile except aeronautical mobile (R)	Mobile except aeronautical mobile (R)		
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
13 450-13 550 kHz	13 450-13 550 kHz (SHARED)		
FIXED	FIXED	Fixed links	
Mobile except aeronautical mobile (R)	Mobile except aeronautical mobile (R)		
Radiolocation 5.132A	Radiolocation 5.132A		
5.149A		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
13 550-13 570 kHz	13 550-13 570 kHz (SHARED)		
FIXED	FIXED	Fixed links	
Mobile except aeronautical mobile (R)	Mobile except aeronautical mobile (R)		
		SRD	148.5 kHz - 30 MHz: Inductive application 13553 – 13567 kHz: RFID Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.150	5.150	ISM	13553 – 13567 kHz
13 570-13 600 kHz	13 570-13 600 kHz (CIVIL)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
BROADCASTING 5.134	BROADCASTING 5.134	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
5.151	5.151	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
13 600-13 800 kHz	13 600-13 800 kHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
13 800-13 870 kHz	13 800-13 870 kHz (CIVIL)		
BROADCASTING 5.134	BROADCASTING 5.134	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
5.151	5.151	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
13 870-14 000 kHz	13 870-14 000 kHz (SHARED)		
FIXED	FIXED	Fixed links	
Mobile except aeronautical mobile (R)	Mobile except aeronautical mobile (R)		
		SRD	148.5 kHz - 30 MHz: Inductive applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
14 000-14 250 kHz	14 000-14 250 kHz (CIVIL)		
AMATEUR	AMATEUR	Amateur	
AMATEUR-SATELLITE	AMATEUR-SATELLITE	Amateur Satellite	
		SRD	148.5 kHz - 30 MHz: Inductive applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
14 250-14 350 kHz	14 250-14 350 kHz (CIVIL)		
AMATEUR	AMATEUR	Amateur	
5.152		SRD	148.5 kHz - 30 MHz: Inductive applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
14 350-14 990 kHz	14 350-14 990 kHz (SHARED)		
FIXED	FIXED	Fixed links	
Mobile except aeronautical mobile (R)	Mobile except aeronautical mobile (R)		
		SRD	148.5 kHz - 30 MHz: Inductive applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
14 990-15 005 kHz	14 990-15 005 kHz (SHARED)		
STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz)	Standard Frequency and Time Signal	15 000 kHz. Art. 26 ITU RR
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.111	5.111	SAR (communications)	14993 kHz (± 3 kHz) concerning manned space vehicles Annex 6 List of the System of Safety services and Associated Frequencies Band
15 005-15 010 kHz	15 005-15 010 kHz (SHARED)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
STANDARD FREQUENCY AND TIME SIGNAL	STANDARD FREQUENCY AND TIME SIGNAL	Standard Frequency and Time Signal	Art. 26 ITU RR
Space research	Space research		
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
15 010-15 100 kHz	15 010-15 100 kHz (SHARED)		
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	App. 26 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
15 100-15 600 kHz	15 100-15 600 kHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
15 600-15 800 kHz	15 600-15 800 kHz (CIVIL)		
BROADCASTING 5.134	BROADCASTING 5.134	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
5.146	5.146	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
15 800-16 100 kHz	15 800-16 100 kHz (SHARED)		
FIXED	FIXED	Fixed links	
5.153		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
16 100-16 200 kHz	16 100-16 200 kHz (SHARED)		
FIXED	FIXED	Fixed links	
Radiolocation 5.145A	Radiolocation 5.145A	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.145B			
16 200-16 360 kHz	16 200-16 360 kHz (SHARED)		
FIXED	FIXED	Fixed links	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
16 360-17 410 kHz	16 360-17 410 kHz (SHARED)		
MARITIME MOBILE 5.109 5.110 5.132 5.137A 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.137A 5.145	Maritime	App. 25 ITU RR. Allotment plan
		DSC calling	16805, 16805.5, 16806, 16903, 16903.5, 16904 kHz Appendix 17 ITU RR
		DCS distress traffic	16804.5 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Maritime Safety Information	16806.5 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Telephony distress traffic and calling by rescue centers	16420 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		Automatic Connection System	16695 kHz Recommendation ITU-R M.541

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
17 410-17 480 kHz	17 410-17 480 kHz (SHARED)		
FIXED	FIXED	Fixed links	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
17 480-17 550 kHz	17 480-17 550 kHz (CIVIL)		
BROADCASTING 5.134	BROADCASTING 5.134	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
5.146	5.146	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
17 550-17 900 kHz	17 550-17 900 kHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
17 900-17 970 kHz	17 900-17 970 kHz (SHARED)		
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical mobile (R)	App. 27 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
17 970-18 030 kHz	17 970-18 030 kHz (SHARED)		
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	App. 26 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
18 030-18 052 kHz	18 030-18 052 kHz (SHARED)		
FIXED	FIXED	Fixed links	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
18 052-18 068 kHz	18 052-18 068 kHz (SHARED)		
FIXED	FIXED	Fixed links	
Space research	Space research		
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
18 068-18 168 kHz	18 068-18 168 kHz (CIVIL)		
AMATEUR	AMATEUR	Amateur	
AMATEUR-SATELLITE	AMATEUR-SATELLITE	Amateur Satellite	
5.154		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
18 168-18 780 kHz	18 168-18 780 kHz (SHARED)		
FIXED	FIXED	Fixed links	
Mobile except aeronautical mobile	Mobile except aeronautical mobile	-	-

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
18 780-18 900 kHz	18 780-18 900 kHz (SHARED)		
MARITIME MOBILE	MARITIME MOBILE	Maritime	App. 25 ITU RR. Allotment plan
		DSC calling -ship stations	18898.5, 18899. 18899.5 kHz Appendix 17 ITU RR
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
18 900-19 020 kHz	18 900-19 020 kHz (CIVIL)		
BROADCASTING 5.134	BROADCASTING 5.134	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
5.146	5.146	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
19 020-19 680 kHz	19 020-19 680 kHz (SHARED)		
FIXED	FIXED	Fixed links	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
19 680-19 800 kHz	19 680-19 800 kHz (SHARED)		
MARITIME MOBILE 5.132	MARITIME MOBILE 5.132	Maritime	App. 25 ITU RR. Allotment plan
		DSC calling -coast stations	19703.5, 19704, 19704.5 kHz Appendix 17 ITU RR
		Maritime Safety Information	19680.5 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		SRD	148.5 kHz - 30 MHz: Inductive applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
19 800-19 990 kHz	19 800-19 990 kHz (SHARED)		
FIXED	FIXED	Fixed links	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
19 990-19 995 kHz	19 990-19 995 kHz (SHARED)		
STANDARD FREQUENCY AND TIME SIGNAL	STANDARD FREQUENCY AND TIME SIGNAL	Standard Frequency and Time Signal	Art. 26 ITU RR
Space research	Space research		
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.111	5.111	SAR (communications)	19993 kHz (± 3 kHz) concerning manned space vehicles Annex 6 List of the System of Safety services and Associated Frequencies Band
19 995-20 010 kHz	19 995-20 010 kHz (SHARED)		
STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz)	Standard Frequency and Time Signal	20 000 kHz. Art. 26 ITU RR
5.111	5.111	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
20 010-21 000 kHz	20 010-21 000 kHz (SHARED)		
FIXED	FIXED	Fixed links	
Mobile	Mobile		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
21 000-21 450 kHz	21 000-21 450 kHz (CIVIL)		
AMATEUR	AMATEUR	Amateur	
AMATEUR-SATELLITE	AMATEUR-SATELLITE	Amateur Satellite	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
21 450-21 850 kHz	21 450-21 850 kHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
21 850-21 870 kHz	21 850-21 870 kHz (SHARED)		
FIXED 5.155A	FIXED	Fixed links	
5.155		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
21 870-21 924 kHz	21 870-21 924 kHz (SHARED)		
FIXED 5.155B	FIXED 5.155B	Fixed links	Only for provision of services related to aircraft flight safety
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
21 924-22 000 kHz	21 924-22 000 kHz (SHARED)		
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical mobile (R)	App. 27 ITU RR. Allotment plan
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
22 000-22 855 kHz	22 000-22 855 kHz (SHARED)		
MARITIME MOBILE 5.132 5.137A	MARITIME MOBILE 5.132 5.137A	Maritime	App. 25 ITU RR. Allotment plan
		DSC calling	22374.5, 22375, 22375.5, 22444, 22444.5, 22445 kHz Appendix 17 ITU RR
		Maritime Safety Information	22376 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
5.156		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
22 855-23 000 kHz	22 855-23 000 kHz (SHARED)		
FIXED	FIXED	Fixed links	
5.156		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
23 000-23 200 kHz	23 000-23 200 kHz (SHARED)		
FIXED	FIXED	Fixed links	
Mobile except aeronautical mobile (R)	Mobile except aeronautical mobile (R)		
5.156		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
23 200-23 350 kHz	23 200-23 350 kHz (SHARED)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
FIXED 5.156A	FIXED 5.156A	Fixed links	Only for provision of services related to aircraft flight safety
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical mobile (OR)	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
23 350-24 000 kHz	23 350-24 000 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile 5.157	MOBILE except aeronautical mobile 5.157	Maritime mobile	Limited to inter-ship radiotelegraphy only
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices Frequency Ranges & Power Limitations
24 000-24 450 kHz	24 000-24 450 kHz (SHARED)		
FIXED	FIXED	Fixed links	
LAND MOBILE	LAND MOBILE	Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
24 450-24 600 kHz	24 450-24 600 kHz (SHARED)		
FIXED	FIXED	Fixed links	
LAND MOBILE	LAND MOBILE	Mobile applications	
Radiolocation 5.132A	Radiolocation 5.132A		
5.158		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
24 600-24 890 kHz	24 600-24 890 kHz (SHARED)		
FIXED	FIXED	Fixed links	
LAND MOBILE	LAND MOBILE	Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
24 890-24 990 kHz	24 890-24 990 kHz (CIVIL)		
AMATEUR	AMATEUR	Amateur	
AMATEUR-SATELLITE	AMATEUR-SATELLITE	Amateur Satellite	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
24 990-25 005 kHz	24 990-25 005 kHz (SHARED)		
STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	Standard Frequency and Time Signal	25 000 kHz. Art. 26 ITU RR
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
25 005-25 010 kHz	25 005-25 010 kHz (SHARED)		
STANDARD FREQUENCY AND TIME SIGNAL	STANDARD FREQUENCY AND TIME SIGNAL	Standard Frequency and Time Signal	Art. 26 ITU RR
Space research	Space research		
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
25 010-25 070 kHz	25 010-25 070 kHz (SHARED)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
25 070-25 210 kHz	25 070-25 210 kHz (SHARED)		
MARITIME MOBILE	MARITIME MOBILE	Maritime	App. 25 ITU RR. Allotment plan
		DSC calling -ship stations	25208.5, 25209, 25209.5 kHz Appendix 17 ITU RR
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
25 210-25 550 kHz	25 210-25 550 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
25 550-25 670 kHz	25 550-25 670 kHz (SHARED)		
RADIO ASTRONOMY	RADIO ASTRONOMY	Radio astronomy	
5.149	5.149	SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
25 670-26 100 kHz	25 670-26 100 kHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	Art. 12 ITU RR. Introduction of digital systems is encouraged
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
26 100-26 175 kHz	26 100-26 175 kHz (SHARED)		
MARITIME MOBILE 5.132	MARITIME MOBILE 5.132	Maritime	App. 25 ITU RR. Allotment plan
		DSC calling -coast stations	26121, 26121.56, 26122 kHz Appendix 17 ITU RR
		Maritime Safety Information	26100.5 kHz Annex 6 List of the System of Safety services and Associated Frequencies Band
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
26 175-26 200 kHz	26 175-26 200 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
26 200-26 350 kHz	26 200-26 350 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Mobile applications	
Radiolocation 5.132A	Radiolocation 5.132A		
5.133A		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
26 350-27 500 kHz	26 350-27 500 kHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	CB Radio	Within the band: 26.960-27.410 MHz

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		Mobile applications	
		ISM	26.975-27.283 MHz
		DRONE	26.975-27.283 MHz Annex 9 Regulation Requirement for Drone
5.150	5.150	SRD	148.5 kHz - 30 MHz: Inductive application 26.957 – 27.283 MHz: Non specific applications 26.995 MHz, 27.045 MHz, 27.095 MHz, 27.145 MHz and 27.195 MHz: Model control 27.090-27.100MHz: Railway Applications Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
27.5-28 MHz	27.5-28 MHz (SHARED)		
METEOROLOGICAL AIDS	METEOROLOGICAL AIDS		
FIXED	FIXED	Fixed links	
MOBILE	MOBILE	Mobile applications	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
28-29.7 MHz	28-29.7 MHz (CIVIL)		
AMATEUR	AMATEUR	Amateur	
AMATEUR-SATELLITE	AMATEUR-SATELLITE	Amateur Satellite	
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
29.7-30.005 MHz	29.7-30.005 MHz (MILITARY)		
FIXED	FIXED		
MOBILE	MOBILE		
		SRD	148.5 kHz - 30 MHz: Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
		Military systems	
30.005-30.01 MHz	30.005-30.01 MHz (MILITARY)		
SPACE OPERATION (satellite identification)	SPACE OPERATION (satellite identification)		
FIXED	FIXED		
MOBILE	MOBILE		
SPACE RESEARCH	SPACE RESEARCH		
		Military systems	
30.01-37.5 MHz	30.01-37.5 MHz (MILITARY)		
FIXED	FIXED		
MOBILE	MOBILE		
		Military systems	
		SRD DRONE	34.995-35.225 MHz Model control. Annex 2 Short Range Devices,

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
			Frequency Ranges & Power Limitations Annex 9 Regulation Requirement for Drone
37.5-38.25 MHz	37.5-38.25 MHz (SHARED)		
FIXED	FIXED		
MOBILE	MOBILE	PMR	
		Paging	
Radio astronomy	Radio astronomy		
5.149	5.149		
38.25-39 MHz	38.25-39 MHz (SHARED)		
FIXED	FIXED		
MOBILE	MOBILE	PMR	
39-39.5 MHz	39-39.5 MHz (SHARED)		
FIXED	FIXED		
MOBILE	MOBILE	PMR	
Radiolocation 5.132A	Radiolocation 5.132A		
5.159	5.159		
39.5-39.986 MHz	39.5-39.986 MHz (SHARED)		
FIXED	FIXED		
MOBILE	MOBILE	PMR	
39.986-40 MHz	39.986-40 MHz (SHARED)		
FIXED	FIXED		
MOBILE	MOBILE	PMR	
Space research	Space research		
40-40.02 MHz	40-40.02 MHz (SHARED)		
FIXED	FIXED		
MOBILE	MOBILE	PMR	
Earth exploration-satellite (active) 5.159A	Earth exploration-satellite (active) 5.159A		
Space research	Space research		
40.02-40.98 MHz	40.02-40.98 MHz (SHARED)		
FIXED	FIXED		
MOBILE	MOBILE	PMR	40.02-40.66 MHz and 40.7-40.98 MHz
5.150	5.150	ISM	40.66 – 40.70 MHz
		SRD	40.66 – 40.7 MHz: Non-specific applications. 40.665 MHz, 40.675 MHz, 40.685 MHz and 40.695 MHz : Model control Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
		DRONE	Annex 9 Regulation Requirement for Drone
Earth exploration-satellite (active) 5.159A	Earth exploration-satellite (active) 5.159A		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
40.98-41.015 MHz	40.98-41.015 MHz (SHARED)		
FIXED	FIXED		
MOBILE	MOBILE	PMR	
Earth exploration-satellite (active) 5.159A	Earth exploration-satellite (active) 5.159A		
Space research	Space research		
5.160 5.161			
41.015-42 MHz	41.015-42 MHz (MILITARY)		
FIXED	FIXED		
MOBILE	MOBILE		
Earth exploration-satellite (active) 5.159A	Earth exploration-satellite (active) 5.159A		
5.160 5.161 5.161A		Military systems	
42-42.5 MHz	42-42.5 MHz (MILITARY)		
FIXED	FIXED		
MOBILE	MOBILE		
Earth exploration-satellite (active) 5.159A	Earth exploration-satellite (active) 5.159A		
Radiolocation 5.132A	Radiolocation 5.132A		
5.160 5.161B		Military systems	
42.5-44 MHz	42.55-44 MHz (MILITARY)		
FIXED	FIXED		
MOBILE	MOBILE		
Earth exploration-satellite (active) 5.159A	Earth exploration-satellite (active) 5.159A		
5.160 5.161 5.161A		Military systems	
44-47 MHz	44-47 MHz (MILITARY)		
FIXED	FIXED		
MOBILE	MOBILE		
Earth exploration-satellite (active) 5.159A	Earth exploration-satellite (active) 5.159A		
5.162 5.162A		Military systems	
47-50 MHz	47-50 MHz (CIVIL)		
BROADCASTING	BROADCASTING		
Earth exploration-satellite (active) 5.159A	Earth exploration-satellite (active) 5.159A		
5.162A 5.163 5.164 5.165			
50-52 MHz	50-52 MHz (CIVIL)		
BROADCASTING	BROADCASTING		
Amateur 5.166A 5.166B 5.166C 5.166D 5.166E 5.169 5.169A 5.169B	AMATEUR 5.166B 5.166C 5.169A 5.169B		
5.162A 5.164 5.165			
52-68 MHz	52-68 MHz (CIVIL)		
BROADCASTING	BROADCASTING		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
5.162A 5.163 5.164 5.165 5.169 5.169A 5.169B 5.171	5.169A 5.169B		
68-74.8 MHz	68-74.8 MHz (SHARED)		
FIXED	FIXED		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	PMR/PAMR	
5.149 5.175 5.177 5.179	5.149		
74.8-75.2 MHz	74.8-75.2 MHz (SHARED)		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	ILS/marker beacons	75 MHz \pm 0.005%. ICAO Regulations (Annex 10, volume1, chapter 3, sections 3.1.7 and 3.6)
5.180 5.181	5.180 .		
75.2-87.5 MHz	75.2-77.8 MHz (MILITARY)		
FIXED	FIXED		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
		Military systems	
	77.8-84.6 MHz (SHARED)		
	FIXED		
	MOBILE except aeronautical mobile	PMR/PAMR	
	84.6-87.5 MHz (MILITARY)		
	FIXED		
	MOBILE except aeronautical mobile		
5.175 5.179 5.187		Military systems	
87.5-100 MHz	87.5-100 MHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	FM sound. Regional agreement GE84
5.190 .		SRD	87.5-108 MHz: Wireless Audio Applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
100-108 MHz	100-108 MHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	FM sound. Regional agreement GE84
5.194		SRD	87.5-108 MHz: Wireless Audio Applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
108-117.975 MHz	108-117.975 MHz (CIVIL)		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	ILS/Localizer	108-112 MHz
		VOR	112-117.975 MHz
5.197 5.197A	5.197A		
117.975-137 MHz	117.975-137 MHz (CIVIL)		
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	Aeronautical mobile	117.975-121.45 MHz. Safety and regularity of flights. ICAO Regulations (Annex 10, volume III, Part II, Chapter 2)
		Distress Radio Beacons	121.45-121.55 MHz band only for distress and safety. Annex 6 List of the System of Safety services and Associated Frequencies Band
		Aeronautical mobile	121.55-136 MHz
		Aeronautical mobile distress communication	123.1 MHz Annex 6 List of the System of Safety services and Associated Frequencies Band

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		Aeronautical communication	136-137 MHz
AERONAUTICAL MOBILE-SATELLITE (R) 7 5.198A 5.198B	AERONAUTICAL MOBILE-SATELLITE (R) 5.198A 5.198B		
5.111 5.200 5.201 5.202	5.111 5.200 5.202		
137-137.025 MHz	137-137.025 MHz (CIVIL)		
SPACE OPERATION (space-to-Earth) 5.203C	FIXED 5.204		
METEOROLOGICAL-SATELLITE (space-to-Earth)	MOBILE except aeronautical mobile (R) 5.204	Mobile applications	Restricted to Aeronautical Mobile (OR), including air sport
MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209	SPACE OPERATION (space-to-Earth) 5.203C		
SPACE RESEARCH (space-to-Earth)	METEOROLOGICAL-SATELLITE (space-to-Earth)	Meteorological satellites	
Fixed	MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209	Low earth orbit satellites	
Mobile except aeronautical mobile (R)	SPACE RESEARCH (space-to-Earth)		
5.204 5.205 5.206 5.207 5.208	5.208		
137.025-137.175 MHz	137.025-137.175 MHz (CIVIL)		
SPACE OPERATION (space-to-Earth) 5.203C	FIXED 5.204	Fixed links	Priority to mobile and satellite applications
METEOROLOGICAL-SATELLITE (space-to-Earth)	MOBILE except aeronautical mobile (R) 5.204	Mobile applications	Restricted to Aeronautical Mobile (OR), including air sport
SPACE RESEARCH (space-to-Earth)	SPACE OPERATION (space-to-Earth) 5.203C		
Fixed	METEOROLOGICAL-SATELLITE (space-to-Earth)	Meteorological satellites	
Mobile except aeronautical mobile (R)	SPACE RESEARCH (space-to-Earth)		
Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209	Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209	Low earth orbit satellites	
5.204 5.205 5.206 5.207 5.208	5.208		
137.175-137.825 MHz	137.175-137.825 MHz (CIVIL)		
SPACE OPERATION (space-to-Earth) 5.203C 5.209A	FIXED 5.204	Fixed links	Priority to mobile and satellite applications
METEOROLOGICAL-SATELLITE (space-to-Earth)	MOBILE except aeronautical mobile (R) 5.204	Mobile applications	Restricted to Aeronautical Mobile (OR), including air sport
MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209	SPACE OPERATION (space-to-Earth) 5.203C 5.209A		
SPACE RESEARCH (space-to-Earth)	METEOROLOGICAL-SATELLITE (space-to-Earth)	Meteorological satellites	
Fixed	MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209	Low earth orbit satellites	
Mobile except aeronautical mobile (R)	SPACE RESEARCH (space-to-Earth)		
5.204 5.205 5.206 5.207 5.208	5.208		
137.825-138 MHz	137.825-138 MHz (CIVIL)		
SPACE OPERATION (space-to-Earth) 5.203C	FIXED 5.204	Fixed links	Priority to mobile and satellite applications
METEOROLOGICAL-SATELLITE (space-to-Earth)	MOBILE except aeronautical mobile (R) 5.204	Mobile applications	Restricted to Aeronautical Mobile (OR), including air sport
SPACE RESEARCH (space-to-Earth)	SPACE OPERATION (space-to-Earth) 5.203C		
Fixed	METEOROLOGICAL-SATELLITE (space-to-Earth)	Meteorological satellites	
Mobile except aeronautical mobile (R)	SPACE RESEARCH (space-to-Earth)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209	Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209	Low earth orbit satellites	
5.204 5.205 5.206 5.207 5.208	5.208		
138-143.6 MHz	138-144 MHz (SHARED)		
AERONAUTICAL MOBILE (OR)	FIXED 5.212	Fixed links	
	MOBILE 5.212	Mobile applications	Including air operation control
5.210 5.211 5.212 5.214			
143.6-143.65 MHz			
AERONAUTICAL MOBILE (OR)			
SPACE RESEARCH (space-to-Earth)			
5.211 5.212 5.214			
143.65-144 MHz			
AERONAUTICAL MOBILE (OR)			
5.210 5.211 5.212 5.214			138.2 – 138.45 MHz: Non-specific applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
144-146 MHz	144-146 MHz (CIVIL)		
AMATEUR	AMATEUR	Amateur	
AMATEUR-SATELLITE	AMATEUR-SATELLITE	Amateur Satellite	
5.216			
146-148 MHz	146-148 MHz (CIVIL)		
FIXED	FIXED	Fixed links	Priority to PMR/PAMR
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	PMR/PAMR	
148-149.9 MHz	148-149.9 MHz (CIVIL)		
FIXED	FIXED		
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	PMR/PAMR	
MOBILE-SATELLITE (Earth-to-space) 5.209	MOBILE-SATELLITE (Earth-to-space) 5.209	Low earth orbit satellites	
5.218 5.218A 5.219 5.221	5.218 5.218A 5.219 5.221		
149.9-150.05 MHz	149.9-150.05 MHz (CIVIL)		
MOBILE-SATELLITE (Earth-to-space) 5.209 5.220	MOBILE-SATELLITE (Earth-to-space) 5.209 5.220	Low earth orbit satellites	
150.05-153 MHz	150.05-153 MHz (CIVIL)		
FIXED	FIXED		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	PMR/PAMR	
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149	5.149		
153-154 MHz	153-154 MHz (CIVIL)		
FIXED	FIXED		
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	PMR/PAMR	
Meteorological Aids	Meteorological Aids		
154-156.4875 MHz	154-156 MHz (CIVIL)		
FIXED	FIXED		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	PMR/PAMR	
	156-156.4875 MHz (SHARED)		
	FIXED		
	MOBILE except aeronautical mobile (R)	Maritime	App. 18 ITU RR
5.225A 5.226	5.226	SAR	156.3MHz Annex 6 List of the System of Safety services and Associated Frequencies Band
156.4875-156.5625 MHz	156.4875-156.5625 MHz (SHARED)		
MARITIME MOBILE (distress and calling via DSC)	MARITIME MOBILE (distress and calling via DSC)	DSC for distress and calling	156.525 MHz App. 18 ITU RR Annex 6 List of the System of Safety services and Associated Frequencies Band
5.111 5.226 5.227	5.111 5.226 5.227		
156.5625-156.7625 MHz	156.5625-156.7625 MHz (SHARED)		
FIXED	FIXED		
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	Maritime	App. 18 ITU RR
5.226	5.226		
156.7625-156.7875 MHz	156.7625-156.7875 MHz (CIVIL)		
MARITIME MOBILE	MARITIME MOBILE	Maritime	App. 18 ITU RR
Mobile-satellite (Earth-to-space)	Mobile-satellite (Earth-to-space)		
5.111 5.226 5.228	5.111 5.226 5.228		
156.7875-156.8125 MHz	156.7875-156.8125 MHz (CIVIL)		
MARITIME MOBILE (distress and calling)	MARITIME MOBILE (distress and calling)	Distress, safety and calling SAR	156.8 MHz App. 18 ITU RR Annex 6 List of the System of Safety services and Associated Frequencies Band
5.111 5.226	5.111 5.226		
156.8125-156.8375 MHz	156.8125-156.8375 MHz (CIVIL)		
MARITIME MOBILE	MARITIME MOBILE	Maritime	App. 18 ITU RR
Mobile-satellite (Earth-to-space)	Mobile-satellite (Earth-to-space)		
5.111 5.226 5.228	5.111 5.226 5.288		
156.8375-157.1875 MHz	156.8375-157.1875 MHz (SHARED)		
FIXED	MARITIME MOBILE	Maritime	App. 18 ITU RR
MOBILE except aeronautical mobile			
5.226	5.226		
157.1875-157.3375 MHz	157.1875-157.3375 MHz (SHARED)		
FIXED	MARITIME MOBILE	Maritime	App. 18 ITU RR
MOBILE except aeronautical mobile	Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228AC		
Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228AC			
5.226	5.226		
157.3375-161.7875 MHz	157.3375-157.45 MHz (SHARED)		
FIXED	MARITIME MOBILE	Maritime	App. 18 ITU RR
MOBILE except aeronautical mobile	5.226		
	157.45-160.6 MHz (CIVIL)		
	FIXED	Fixed links	

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
	MOBILE except aeronautical mobile	PMR/PAMR	Priority to PMR/PAMR
	160.6-160.975 MHz (SHARED)		
	MARITIME MOBILE	Maritime	App. 18 ITU RR
	5.226		
	160.975-161.475 MHz (CIVIL)		
	FIXED	Fixed links	
	MOBILE except aeronautical mobile	PMR/PAMR	Priority to PMR/PAMR
	161.475-161.7875 MHz (SHARED)		
	MARITIME MOBILE	Maritime	App. 18 ITU RR
5.226	5.226		
161.7875-161.9375 MHz	161.7875-161.9375 MHz (SHARED)		
FIXED	MARITIME MOBILE	Maritime	App. 18 ITU RR
MOBILE except aeronautical mobile	Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228AC		
Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228AC			
5.226	5.226		
161.9375-161.9625 MHz	161.9375-161.9625MHz (SHARED)		
FIXED	MARITIME MOBILE	Maritime	App. 18 ITU RR
MOBILE except aeronautical mobile			
Maritime mobile-satellite (Earth-to-space) 5.228AA	Maritime mobile-satellite (Earth-to-space) 5.228AA		
5.226	5.226		
161.9625-161.9875 MHz	161.9625-161.9875 MHz (SHARED)		
FIXED			
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Automatic Identification System (AIS)	161.975 MHz Annex 6 List of the System of Safety services and Associated Frequencies Band
Mobile-satellite (Earth-to-space) 5.228F	Mobile-satellite (Earth-to-space) 5.228F		
5.226 5.228A 5.228B	5.226 5.228A 5.228B		
161.9875-162.0125 MHz	161.9875-162.0125 MHz (SHARED)		
FIXED			
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Maritime	App. 18 ITU RR
Maritime mobile-satellite (Earth-to-space) 5.228AA	Maritime mobile-satellite (Earth-to-space) 5.228AA		
5.226	5.226		
162.0125-162.0375 MHz	162.0125-162.0375 MHz (SHARED)		
FIXED			
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Automatic Identification System (AIS)	162.025 MHz Annex 6 List of the System of Safety services and Associated Frequencies Band App. 18 ITU RR
Mobile-satellite (Earth-to-space) 5.228F	Mobile-satellite (Earth-to-space) 5.228F		
5.226 5.228A 5.228B	5.226 5.228A 5.228B		
162.0375-174 MHz	162.0375-162.05 MHz (SHARED)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
FIXED			
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Maritime	App. 18 ITU RR
	5.226		
	162.05-174 MHz (CIVIL)		
	FIXED	Fixed links	
	MOBILE except aeronautical mobile	PMR/PAMR	Priority to PMR/PAMR
		SRD	169.4-169.475 MHz: Meter reading and Asset tracking and tracing systems. 169.4-169.4875,169.5875-169.8125MHz:Non-specific applications. 169.4875-169.5875 MHz: Aids for hearing impairment. 169.48125 MHz and 169.59375 MHz: Social alarms, alarms for security and safety Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
		Camel racing	167-168 MHz Annex 12: Regulation of automated riding devices in camel racing.
5.226			
174-223 MHz	174-223 MHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	174-230 MHz: Analog TV (B/PAL). Regional agreement GE06
			174-216 MHz: DVB-T. Regional agreement GE06
5.235 5.237 5.243			216-230 MHz: T-DAB. Regional agreement GE06
223-230 MHz	223-230 MHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	174-230 MHz: Analog TV (B/PAL). Regional agreement GE06
Fixed	Fixed		216-230 MHz: T-DAB. Regional agreement GE06
Mobile	Mobile		
5.243 5.246 5.247			
230-235 MHz	230-235 MHz (MILITARY)		
FIXED	AERONAUTICAL RADIONAVIGATION 5.247		
MOBILE	FIXED		
	MOBILE		
5.247 5.251 5.252		Military systems	
235-267 MHz	235-242.95 MHz (MILITARY)		
FIXED	FIXED		
MOBILE	MOBILE		
	5.254	Military systems	
	242.95-243.05 MHz (SHARED)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
	MOBILE	Distress Radio Beacons Search and Rescue (SAR) Operation	243 MHz Annex 6 List of the System of Safety services and Associated Frequencies Band
	5.111 5.254 5.256	survival craft stations	
	243.05-267 MHz (MILITARY)		
	FIXED		
	MOBILE		
5.111 5.252 5.254 5.256 5.256A	5.254	Military systems	
267-272 MHz	267-272 MHz (MILITARY)		
FIXED	FIXED		
MOBILE	MOBILE		
Space operation (space-to-Earth)	Space operation (space-to-Earth)		
5.254 5.257	5.254 5.257	Military systems	
272-273 MHz	272-273 MHz (MILITARY)		
SPACE OPERATION (space-to-Earth)	SPACE OPERATION (space-to-Earth)		
FIXED	FIXED		
MOBILE	MOBILE		
5.254	5.254	Military systems	
273-312 MHz	273-312 MHz (MILITARY)		
FIXED	FIXED		
MOBILE	MOBILE		
5.254	5.254	Military systems	
312-315 MHz	312-315 MHz (MILITARY)		
FIXED	FIXED		
MOBILE	MOBILE		
Mobile-satellite (Earth-to-space) 5.254 5.255	Mobile-satellite (Earth-to-space) 5.254 5.255		
		Military systems	
315-322 MHz	315-322 MHz (MILITARY)		
FIXED	FIXED		
MOBILE	MOBILE		
5.254	5.254	Military systems	
322-328.6 MHz	322-328.6 MHz (SHARED)		
FIXED	FIXED		
MOBILE	MOBILE	Mobile applications	including AGA communication
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149	5.149		
328.6-335.4 MHz	328.6-335.4 MHz (SHARED)		
AERONAUTICAL RADIONAVIGATION 5.258	AERONAUTICAL RADIONAVIGATION 5.258	ILS/Glide path	ICAO Regulations (Annex 10, Volume 1, Chapter 3)
5.259			
335.4-387 MHz	335.4-380 MHz (MILITARY)		
FIXED	FIXED		
MOBILE	MOBILE		
	5.254	Military systems	

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
	380-387 MHz (MILITARY)		
	MOBILE	Military systems	TETRA military
5.254	5.254		
387-390 MHz	387-390 MHz (MILITARY)		
FIXED	MOBILE	Military systems	TETRA military
MOBILE	Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255		
Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255			
390-399.9 MHz	390-399.9 MHz (MILITARY)		
FIXED	MOBILE	Military systems	TETRA military
MOBILE			
5.254	5.254		
399.9-400.05 MHz	399.9-400.05 MHz (CIVIL)		
MOBILE-SATELLITE (Earth-to-space) 5.209 5.220 5.260A 5.260B	MOBILE-SATELLITE (Earth-to-space) 5.209 5.220 5.260A 5.260B	Mobile satellite applications	
400.05-400.15 MHz	400.05-400.15 MHz (SHARED)		
STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz)	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz)	Standard Frequency and Time Signal	400.1 MHz. Art. 26 ITU RR
	FIXED 5.262		
	MOBILE 5.262		
5.261 5.262	5.261		
400.15-401 MHz	400.15-401 MHz (SHARED)		
METEOROLOGICAL AIDS	METEOROLOGICAL AIDS	Meteorological radiosondes	
METEOROLOGICAL-SATELLITE (space-to-Earth)	METEOROLOGICAL-SATELLITE (space-to-Earth)	Meteorological satellites	
MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209	MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209	Low earth orbit satellites	
SPACE RESEARCH (space-to-Earth) 5.263	SPACE RESEARCH (space-to-Earth) 5.263		
	FIXED 5.262		
	MOBILE 5.262		
Space operation (space-to-Earth)	Space operation (space-to-Earth)		
5.262 5.264	5.264		
401-402 MHz	401-402 MHz (SHARED)		
METEOROLOGICAL AIDS	METEOROLOGICAL AIDS	Meteorological radiosondes	
SPACE OPERATION (space-to-Earth)	SPACE OPERATION (space-to-Earth)		
EARTH EXPLORATION-SATELLITE (Earth-to-space)	EARTH EXPLORATION-SATELLITE (Earth-to-space)		
METEOROLOGICAL-SATELLITE (Earth-to-space)	METEOROLOGICAL-SATELLITE (Earth-to-space)	Meteorological satellites	Data collection platform telemetry
Fixed	Fixed		
Mobile except aeronautical mobile	Mobile except aeronautical mobile		
5.264A 5.264B	5.264A 5.264B		
402-403 MHz	402-403 MHz (SHARED)		
METEOROLOGICAL AIDS	METEOROLOGICAL AIDS	Meteorological radiosondes	

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
EARTH EXPLORATION-SATELLITE (Earth-to-space)	EARTH EXPLORATION-SATELLITE (Earth-to-space)		
METEOROLOGICAL-SATELLITE (Earth-to-space)	METEOROLOGICAL-SATELLITE (Earth-to-space)	Meteorological satellites	
Fixed	Fixed		
Mobile except aeronautical mobile	Mobile except aeronautical mobile		
5.264A 5.264B	5.264A 5.264B	SRD	402 – 405 MHz: Ultra low power active medical implants. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
403-406 MHz	403-406 MHz (SHARED)		
METEOROLOGICAL AIDS	METEOROLOGICAL AIDS	Meteorological radiosondes	
Fixed	Fixed		
Mobile except aeronautical mobile	Mobile except aeronautical mobile		
5.265	5.265	SRD	402 – 405 MHz: Ultra low power active medical implants. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
406-406.1 MHz	406-406.1 MHz (SHARED)		
MOBILE-SATELLITE (Earth-to-space)	MOBILE-SATELLITE (Earth-to-space)	Satellite EPIRB	406-406.1 MHz band only for distress and safety. Annex 6 List of the System of Safety services and Associated Frequencies Band Art. 31 and App. 15 ITU RR
5.265 5.266 5.267	5.265 5.266 5.267		
406.1-410 MHz	406.1-410 MHz (CIVIL)		
FIXED	FIXED		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	PMR/PAMR	
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149 5.265	5.149 5.265		
410-420 MHz	410-420 MHz (CIVIL)		
FIXED	FIXED		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	PMR/PAMR	TETRA
SPACE RESEARCH (space-to-space) 5.268	SPACE RESEARCH (space-to-space) 5.268		
420-430 MHz	420-430 MHz (CIVIL)		
FIXED	FIXED		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	PMR/PAMR	TETRA
Radiolocation	Radiolocation		
5.269 5.270 5.271			
430-432 MHz	430-432 MHz (CIVIL)		
AMATEUR	AMATEUR		on coordination basis
RADIOLOCATION	FIXED 5.276	Fixed links	
	MOBILE except aeronautical mobile 5.276	PMR/PAMR	
	RADIOLOCATION		
5.271 5.274 5.275 5.276 5.277			
432-438 MHz	432-435 MHz (CIVIL)		
AMATEUR	AMATEUR		on coordination basis
RADIOLOCATION	FIXED 5.276		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
Earth exploration-satellite (active) 5.279A	MOBILE except aeronautical mobile 5.276	PMR/PAMR	
	RADIOLOCATION		
	Earth exploration-satellite (active) 5.279A		
		ISM	433.05 – 434.79 MHz
		DRONE	433.05 – 434.79 MHz: Annex 9 Regulation Requirement for Drone
		SRD	434.040-434.790 MHz: Non-specific applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
	5.138		
	435-438 MHz (CIVIL)		
	AMATEUR	Amateur	
	FIXED 5.276		
	RADIOLOCATION		
	Earth exploration-satellite (active) 5.279A		
5.138 5.271 5.276 5.277 5.280 5.281 5.282	5.282		
438-440 MHz	438-440 MHz (CIVIL)		
AMATEUR	AMATEUR		on coordination basis
RADIOLOCATION	FIXED 5.276		
	MOBILE except aeronautical mobile 5.276	PMR/PAMR	
	RADIOLOCATION		
5.271 5.274 5.275 5.276 5.277 5.283		Camel Racing	438-440 MHz. Annex 12: Regulation of automated riding devices in camel racing.
440-450 MHz	440-450 MHz (CIVIL)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	PMR/PAMR	Priority to PMR/PAMR
			Paging: 443.5-443.75 MHz
Radiolocation	Radiolocation		
5.269 5.271 5.284 5.285 5.286	5.286	PMR446	446-446.2 MHz Annex 7 The Technical Specifications to operate PMR 446
450-455 MHz	450-455 MHz (CIVIL)		
FIXED	FIXED		
MOBILE 5.286AA	MOBILE 5.286AA	IMT	
5.209 5.271 5.286 5.286A 5.286B 5.286C 5.286E	5.209 5.286 5.286A		
455-456 MHz	455-456 MHz (CIVIL)		
FIXED	FIXED		
MOBILE 5.286AA	MOBILE 5.286AA	IMT	
5.209 5.271 5.286A 5.286B 5.286C 5.286E	5.209 5.286A		
456-459 MHz	456-459 MHz (CIVIL)		
FIXED	FIXED		
MOBILE 5.286AA	MOBILE 5.286AA	IMT	
5.271 5.287 5.288	5.287		
459-460 MHz	459-460 MHz (CIVIL)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
FIXED	FIXED		
MOBILE 5.286AA	MOBILE 5.286AA	IMT	
5.209 5.271 5.286A 5.286B 5.286C 5.286E	5.209 5.286A		
460-470 MHz	460-470 MHz (CIVIL)		
FIXED	FIXED		
MOBILE 5.286AA	MOBILE 5.286AA	IMT	
Meteorological-Satellite (space-to-Earth)	Meteorological-Satellite (space-to-Earth)		
5.287 5.288 5.289 5.290	5.287 5.289		
470-694 MHz	470-614 MHz (CIVIL)		
BROADCASTING	BROADCASTING	Broadcasting	DVB-T. Regional agreement GE06
	5.149 5.296 5.300 5.306	SRD	470-694 MHz: Wireless Audio Applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
	614-694 MHz (CIVIL)		
	BROADCASTING		
	MOBILE except aeronautical mobile 5.307A	IMT	
5.149 5.291A 5.294 5.295A 5.296 5.300 5.304 5.306 5.307A 5.307B 5.312	5.296 5.300	SRD	470-694 MHz: Wireless Audio Applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
694-790 MHz	694-790 MHz (CIVIL)		
MOBILE except aeronautical mobile 5.312A 5.312B 5.317A	MOBILE except aeronautical mobile 5.312A 5.317A	IMT	
BROADCASTING			
5.300 5.312	5.300		
790-862 MHz	790-862 MHz (CIVIL)		
FIXED	MOBILE except aeronautical mobile 5.312B 5.316B 5.317A	IMT	
MOBILE except aeronautical mobile 5.312B 5.316B 5.317A			
BROADCASTING			
5.312 5.319			
862-890 MHz	862-870 MHz (CIVIL)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile 5.312B 5.317A	MOBILE except aeronautical mobile 5.312B 5.317A	PMR/PAMR	
BROADCASTING 5.322			
		SRD	863-870 MHz, 868-868.6 MHz, 868.7-869.2 MHz, 869.4-869.65 MHz and 869.7-870 MHz: Non-specific applications. 868.6-868.7 MHz, 869.2-869.25 MHz, 869.25-869.3 MHz, 869.3-869.4 MHz, 869.65-869.7 MHz: Social alarms, alarms for security and safety 863-865 MHz: wireless audio applications. 865-868 MHz: Radio Frequency Identification (RFID) Applications

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
			Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
		DRONE	863-867MHz , 869.4 -869.65MHz: Annex 9 Regulation Requirement for Drone
	870-876 MHz (MILITARY)		
	FIXED		
	MOBILE except aeronautical mobile 5.312B 5.317A	Military systems	
	876-915 MHz (CIVIL)		
5.319 5.323	LAND MOBILE 5.312B 5.317A	IMT	880-890 MHz paired with 925-935 MHz 890-915 MHz paired with 935-960 MHz
890-942 MHz		GSM-R	876-880 MHz paired with 921-925 MHz
FIXED			
MOBILE except aeronautical mobile 5.312B 5.317A			
BROADCASTING 5.322	915-921 MHz (MILITARY)		
Radiolocation	FIXED		
	MOBILE except aeronautical mobile 5.312B 5.317A	Military systems	
	921-960 MHz (CIVIL)		
	LAND MOBILE 5.312B 5.317A	IMT	925-935 MHz paired with 880-890 MHz 935-960 MHz paired with 890-915 MHz
5.323		GSM-R	876-880 MHz paired with 921-925 MHz
942-960 MHz			
FIXED			
MOBILE except aeronautical mobile 5.312B 5.317A			
BROADCASTING 5.322			
5.323			
960-1 164 MHz	960-1 164 MHz (SHARED)		
AERONAUTICAL MOBILE (R) 5.327A	AERONAUTICAL MOBILE (R) 5.327A		
AERONAUTICAL RADIONAVIGATION 5.328	AERONAUTICAL RADIONAVIGATION 5.328	Navigation systems	960-1215 MHz: DME with 1 MHz channel bandwidth
			962-1214 MHz: DME/TACAN with 252 channels (126X and 126Y) and 1 MHz channel bandwidth
			1025-1035 MHz paired with 1085 – 1095 MHz: SSR
			960-1215 MHz: JTIDS/MIDS terminals

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
			ACAS supplementing SSR
5.328AA	5.328AA		
1 164-1 215 MHz	1 164-1 215 MHz (SHARED)		
AERONAUTICAL RADIONAVIGATION 5.328	AERONAUTICAL RADIONAVIGATION 5.328	Navigation systems	960-1215 MHz: DME with 1 MHz channel bandwidth
RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B			962-1214 MHz: DME/TACAN with 252 channels (126X and 126Y) and 1 MHz channel bandwidth
			960-1215 MHz: JTIDS/MIDS terminals
			ACAS supplementing SSR
	RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B	Galileo	Recommendation ITU-R M.1787
		GLONASS	Recommendation ITU-R M.1787
		GPS	Recommendation ITU-R M.1787
5.328A	5.328A		
1 215-1 240 MHz	1 215-1 240 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)		
RADIOLOCATION	RADIOLOCATION	Radiolocation systems	1215 – 1300 MHz
RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A	RADIONAVIGATION 5.331	Radar and Radionavigation systems	
SPACE RESEARCH (active)	RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A	GPS	Recommendation ITU-R M.1787
		GLONASS	Recommendation ITU-R M.1787
	SPACE RESEARCH (active)		
5.330 5.331 5.332	5.330 5.332		
1 240-1 300 MHz	1 240-1 300 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)		
RADIOLOCATION	RADIOLOCATION	Radiolocation systems	1215 – 1300 MHz
RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A	RADIONAVIGATION 5.331	Radar and Radionavigation systems	
SPACE RESEARCH (active)		Wind profiler radars	1270-1295 MHz
Amateur	RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A	GLONASS	Recommendation ITU-R M.1787
		Galileo	Recommendation ITU-R M.1787
	SPACE RESEARCH (active)		
	Amateur		
5.282 5.330 5.331 5.332 5.332A 5.335 5.335A	5.282 5.330 5.332 5.332A 5.335A		
1 300-1 350 MHz	1 300-1 350 MHz (CIVIL)		
RADIOLOCATION	RADIOLOCATION		
AERONAUTICAL RADIONAVIGATION 5.337	AERONAUTICAL RADIONAVIGATION 5.337	Radar and Radionavigation systems	
RADIONAVIGATION SATELLITE (Earth-to-space)	RADIONAVIGATION SATELLITE (Earth-to-space)	Satellite navigation systems	

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
5.149 5.337A	5.149 5.337A		
1 350-1 400 MHz	1 350-1 400 MHz (SHARED)		
FIXED	FIXED	Fixed links	Low capacity
MOBILE	MOBILE	PMR/PAMR	
RADIOLOCATION	RADIOLOCATION		
5.149 5.338 5.338A 5.339	5.149 5.338A 5.339		
1 400-1 427 MHz	1 400-1 427 MHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)	Passive sensors (satellite)	
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340 5.341	5.340 5.341		
1 427-1 429 MHz	1 427-1 429 MHz (SHARED)		
SPACE OPERATION (Earth-to-space)	SPACE OPERATION (Earth-to-space)		
FIXED	FIXED		
MOBILE except aeronautical mobile 5.341A 5.341B 5.341C	MOBILE except aeronautical mobile 5.341A	IMT	
5.338A 5.341	5.338A 5.341		
1 429-1 452 MHz	1 429-1 452 MHz (SHARED)		
FIXED	FIXED		
MOBILE except aeronautical mobile 5.341A	MOBILE except aeronautical mobile 5.341A	IMT	
5.338A 5.341 5.342	5.338A 5.341		
1 452-1 492 MHz	1 452-1 492 MHz (CIVIL)		
FIXED	FIXED		
MOBILE except aeronautical mobile 5.346	MOBILE except aeronautical mobile 5.346	IMT	
BROADCASTING	BROADCASTING		
BROADCASTING-SATELLITE 5.208B	BROADCASTING-SATELLITE 5.208B		
5.341 5.342 5.345	5.341 5.345		
1 492-1 518 MHz	1 492-1 518 MHz (SHARED)		
FIXED	FIXED		
MOBILE except aeronautical mobile 5.341A	MOBILE except aeronautical mobile 5.341A	IMT	
5.341 5.342	5.341		
1 518-1 525 MHz	1 518-1 525 MHz (CIVIL)		
FIXED	FIXED	Fixed links	Unidirectional
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A	MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.351A	Mobile satellite applications (S/E)	
5.341 5.342	5.341		
1 525-1 530 MHz	1 525-1 530 MHz (CIVIL)		
SPACE OPERATION (space-to-Earth)	SPACE OPERATION (space-to-Earth)		
FIXED	FIXED		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A	MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A	Mobile satellite applications (S/E)	
Earth exploration-satellite	Earth exploration-satellite		
Mobile except aeronautical mobile 5.349	Mobile except aeronautical mobile		
5.341 5.342 5.350 5.351 5.352A 5.354	5.341 5.351 5.352A 5.354		
1 530-1 535 MHz	1 530-1 535 MHz (CIVIL)		
SPACE OPERATION (space-to-Earth)	SPACE OPERATION (space-to-Earth)		
MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A	MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A	Mobile satellite applications (S/E)	Priority for GMDSS Distress and safety communications in the band 1530 – 1544 MHz. App. 15 ITU RR
Earth exploration-satellite	Earth exploration-satellite		
Fixed	Fixed		
Mobile except aeronautical mobile	Mobile except aeronautical mobile		
5.341 5.342 5.351 5.354	5.341 5.351 5.354		
1 535-1 559 MHz	1 535-1 559 MHz (CIVIL)		
MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A	MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A	Mobile satellite applications (S/E)	
		Distress and safety communications (including GMDSS) EPIRB	1544 – 1545 MHz Annex 6 List of the System of Safety services and Associated Frequencies Band Priority for GMDSS Distress and safety communications in the band 1530-1544 MHz. App. 15 ITU RR Art. 31 ITU RR
5.341 5.351 5.353A 5.354 5.355 5.356 5.357 5.357A 5.359 5.362A	5.341 5.351 5.353A 5.354 5.356 5.357 5.357A		
1 559-1 610 MHz	1 559-1 610 MHz (SHARED)		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION		
RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.208B 5.328B 5.329A	RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.208B 5.328B 5.329A	GPS	Recommendation ITU-R M.1787
		GLONASS	Recommendation ITU-R M.1787
		Galileo	Recommendation ITU-R M.1787
5.341	5.341		
1 610-1 610.6 MHz	1 610-1 610.6 MHz (CIVIL)		
MOBILE-SATELLITE (Earth-to-space) 5.351A	MOBILE-SATELLITE (Earth-to-space) 5.351A	Mobile satellite applications (E/S)	
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION		
5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.371 5.372	5.341 5.364 5.366 5.367 5.368 5.371 5.372	GLONASS	Recommendation ITU-R M.1787
1 610.6-1 613.8 MHz	1 610.6-1 613.8 MHz (CIVIL)		
MOBILE-SATELLITE (Earth-to-space) 5.351A	MOBILE-SATELLITE (Earth-to-space) 5.351A	Mobile satellite applications (E/S)	
RADIO ASTRONOMY	RADIO ASTRONOMY		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION		
5.149 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.371 5.372	5.149 5.341 5.364 5.366 5.367 5.368 5.371 5.372		
1 613.8-1 621.35 MHz	1 613.8-1 621.35 MHz (CIVIL)		
MOBILE-SATELLITE (Earth-to-space) 5.351A	MOBILE-SATELLITE (Earth-to-space) 5.351A	Mobile satellite applications (E/S)	
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION		
Mobile-satellite (space-to-Earth) 5.208B	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 5.372A	5.341 5.364 5.365 5.366 5.367 5.368 5.371 5.372 5.372A		
1 621.35-1 626.5 MHz	1 621.35-1 626.5 MHz (CIVIL)		
MARITIME MOBILE-SATELLITE (space-to-Earth) 5.373 5.373A	MARITIME MOBILE-SATELLITE (space-to-Earth) 5.373 5.373A		
MOBILE-SATELLITE (Earth-to-space) 5.351A	MOBILE-SATELLITE (Earth-to-space) 5.351A		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION		
Mobile-satellite (space-to-Earth) except maritime mobile satellite (space-to-Earth)	Mobile-satellite (space-to-Earth) except maritime mobile satellite (space-to-Earth)		
5.208B 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	5.208B 5.341 5.364 5.365 5.366 5.367 5.368 5.371 5.372		
1 626.5-1 660 MHz	1 626.5-1 660 MHz (CIVIL)		
MOBILE-SATELLITE (Earth-to-space) 5.351A	MOBILE-SATELLITE (Earth-to-space) 5.351A	Mobile satellite applications (E/S)	
5.341 5.351 5.353A 5.354 5.355 5.357A 5.359 5.362A 5.374 5.375 5.376	5.341 5.351 5.353A 5.354 5.357A 5.374 5.375 5.376	Distress and safety communications (including GMDSS) EPIRB	1645.5-1646.5 MHz. Art. 31 and App. 15 ITU RR 1645.5 – 1646.5 MHz Annex 6 List of the System of Safety services and Associated Frequencies Band
1 660-1 660.5 MHz	1 660-1 660.5 MHz (CIVIL)		
MOBILE-SATELLITE (Earth-to-space) 5.351A	MOBILE-SATELLITE (Earth-to-space) 5.351A	Mobile satellite applications (E/S)	
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149 5.341 5.351 5.354 5.362A 5.376A	5.149 5.341 5.351 5.354 5.376A		
1 660.5-1 668 MHz	1 660.5-1 668 MHz (CIVIL)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
Fixed	Fixed		
Mobile except aeronautical mobile	Mobile except aeronautical mobile		
5.149 5.341 5.379 5.379A	5.149 5.341 5.379A		Passive band
1 668-1 668.4 MHz	1 668-1 668.4 MHz (CIVIL)		
MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C	Mobile satellite applications (E/S)	
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
Fixed	Fixed		
Mobile except aeronautical mobile	Mobile except aeronautical mobile		
5.149 5.341 5.379 5.379A	5.149 5.341 5.379A		
1 668.4-1 670 MHz	1 668.4-1 670 MHz (CIVIL)		
METEOROLOGICAL AIDS	METEOROLOGICAL AIDS	Meteorology	
FIXED	FIXED		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C	Mobile satellite applications (E/S)	
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149 5.341 5.379D 5.379E	5.149 5.341 5.379D 5.379E		
1 670-1 675 MHz	1 670-1 675 MHz (CIVIL)		
METEOROLOGICAL AIDS	METEOROLOGICAL AIDS		
FIXED	FIXED		
METEOROLOGICAL-SATELLITE (space-to-Earth)	METEOROLOGICAL-SATELLITE (space-to-Earth)	Meteorological satellites	
MOBILE	MOBILE		
MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B	Mobile satellite applications (E/S)	
5.341 5.379D 5.379E 5.380A	5.341 5.379D 5.379E 5.380A		
1 675-1 690 MHz	1 675-1 690 MHz (SHARED)		
METEOROLOGICAL AIDS	METEOROLOGICAL AIDS	Meteorological radiosondes	
FIXED	FIXED		
METEOROLOGICAL-SATELLITE (space-to-Earth)	METEOROLOGICAL-SATELLITE (space-to-Earth)	Meteorological satellites	Data collection platform
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
5.341	5.341		
1 690-1 700 MHz	1 690-1 700 MHz (SHARED)		
METEOROLOGICAL AIDS	FIXED 5.382		
METEOROLOGICAL-SATELLITE (space-to-Earth)	METEOROLOGICAL AIDS		
Fixed	METEOROLOGICAL-SATELLITE (space-to-Earth)	Meteorological satellites	Data collection platform
Mobile except aeronautical mobile	MOBILE except aeronautical mobile 5.382		
5.289 5.341 5.382	5.289 5.341		
1 700-1 710 MHz	1 700-1 710 MHz (CIVIL)		
FIXED	FIXED		
METEOROLOGICAL-SATELLITE (space-to-Earth)	METEOROLOGICAL-SATELLITE (space-to-Earth)	Meteorological satellites	Data collection platform
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
5.289 5.341	5.289 5.341		
1 710-1 930 MHz	1 710-1 785 MHz (CIVIL)		
FIXED	LAND MOBILE 5.384A	GSM-1800	1710-1785 MHz paired with 1805-1880 MHz
MOBILE 5.384A 5.388 5.388A		IMT	1710-1785 MHz paired with 1805-1880 MHz

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
	5.149 5.341 5.385	MCA	1805-1880 MHz paired with 1710-1785 MHz Annex 5 Technical Specifications of Mobile Communications Onboard Aircraft (MCA)
	1 785-1 800 MHz (CIVIL)		
	FIXED	FWA	1785-1805 MHz: iBurst
	MOBILE 5.384A		
	1 800-1 880 MHz (CIVIL)		
	MOBILE 5.384A	GSM-1800	1805-1880 MHz paired with 1710-1785 MHz
		IMT	1805-1880 MHz paired with 1710-1785 MHz
		FWA	1785-1805 MHz: iBurst
		MCA	1805-1880 MHz paired with 1710-1785 MHz Annex 5 Technical Specifications of Mobile Communications Onboard Aircraft (MCA)
	1 880-1 885 MHz (CIVIL)		
	FIXED		
	LAND MOBILE 5.384A	Cordless telephone system	1880-1900 MHz: DECT Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
	1 885-1 980 MHz (CIVIL)		
5.149 5.341 5.385 5.386 5.387	LAND MOBILE 5.388 5.388A	Cordless telephone system	1880-1900 MHz: DECT Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
1 930-1 970 MHz		IMT	1920-1980 MHz paired with 2110-2170 MHz:
FIXED			
MOBILE 5.388 5.388A			
1 970-1 980 MHz			
FIXED			
MOBILE 5.388 5.388A			
			1920-1980 MHz paired with 2110-2170 MHz Annex 5 Technical Specifications of Mobile Communications Onboard Aircraft (MCA)
1 980-2 010 MHz	1 980-2 010 MHz (CIVIL)		
FIXED	FIXED		
MOBILE 5.388	MOBILE 5.388	IMT	
MOBILE-SATELLITE (Earth-to-space) 5.351A	MOBILE-SATELLITE (Earth-to-space) 5.351A	IMT satellite component	
		Mobile satellite applications	
5.389A 5.389B 5.389F	5.389A		
2 010-2 025 MHz	2 010-2 025 MHz (CIVIL)		
FIXED	FIXED		
MOBILE 5.388 5.388A	MOBILE 5.388 5.388A	IMT	
2 025-2 110 MHz	2 025-2 070 MHz (MILITARY)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
SPACE OPERATION (Earth-to-space) (space-to-space)	SPACE OPERATION (Earth-to-space) (space-to-space)		
EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space)	EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space)		
FIXED	FIXED	Fixed links	Tactical radio relay systems in the band 2025-2070 MHz can be paired with the band 2200-2245 MHz
MOBILE 5.391	MOBILE 5.391		
SPACE RESEARCH (Earth-to-space) (space-to-space)	SPACE RESEARCH (Earth-to-space) (space-to-space)		
	5.392		
	2 070-2 110 MHz (CIVIL)		
	SPACE OPERATION (Earth-to-space) (space-to-space)		
	EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space)		
	FIXED	Fixed links	
	MOBILE 5.391		
	SPACE RESEARCH (Earth-to-space) (space-to-space)		
5.392	5.392		
2 110-2 120 MHz	2 110-2 120 MHz (CIVIL)		
FIXED	LAND MOBILE 5.388A	IMT	2110-2170 MHz paired with 1920-1980 MHz:
MOBILE 5.388A			
SPACE RESEARCH (deep space) (Earth-to-space)	SPACE RESEARCH (deep space) (Earth-to-space)		
5.388	5.388		1920-1980 MHz paired with 2110-2170 MHz Annex 5 Technical Specifications of Mobile Communications Onboard Aircraft (MCA)
2 120-2 160 MHz	2 120-2 170 MHz (CIVIL)		
FIXED	LAND MOBILE 5.388 5.388A	IMT	2110-2170 MHz paired with 1920-1980 MHz
MOBILE 5.388 5.388A			
2 160-2 170 MHz			
FIXED			
MOBILE 5.388 5.388A			
			1920-1980 MHz paired with 2110-2170 MHz Annex 5 Technical Specifications of Mobile Communications Onboard Aircraft (MCA)
2 170-2 200 MHz	2 170-2 200 MHz (CIVIL)		
FIXED	FIXED		
MOBILE 5.388	MOBILE 5.388	IMT	
MOBILE-SATELLITE (space-to-Earth) 5.351A	MOBILE-SATELLITE (space-to-Earth) 5.351A	IMT satellite component	
		Mobile satellite applications	
5.389A 5.389F	5.389A		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
2 200-2 290 MHz	2 200-2 245 MHz (MILITARY)		
SPACE OPERATION (space-to-Earth) (space-to-space)	SPACE OPERATION (space-to-Earth) (space-to-space)		
EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space)	EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space)		
FIXED	FIXED	Fixed links	Tactical radio relay systems in the band 2200-2245 MHz can be paired with the band 2025-2070 MHz
MOBILE 5.391	MOBILE 5.391		
SPACE RESEARCH (space-to-Earth) (space-to-space)	SPACE RESEARCH (space-to-Earth) (space-to-space)		
	5.392		
	2 245-2 290 MHz (CIVIL)		
	SPACE OPERATION (space-to-Earth) (space-to-space)		
	EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space)		
	FIXED	Fixed links	
	MOBILE 5.391		
	SPACE RESEARCH (space-to-Earth) (space-to-space)		
5.392	5.392		
2 290-2 300 MHz	2 290-2 300 MHz (CIVIL)		
FIXED	FIXED		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Mobile applications	
SPACE RESEARCH (deep space) (space-to-Earth)	SPACE RESEARCH (deep space) (space-to-Earth)		
2 300-2 450 MHz	2 300-2 400 MHz (CIVIL)		
FIXED	FIXED		
MOBILE 5.384A	MOBILE 5.384A	IMT	
Amateur	Amateur		
Radiolocation	Radiolocation		
	2 400-2 450 MHz (CIVIL)		
	FIXED		
	MOBILE		
	Amateur	Amateur	
	Radiolocation		
		ISM	2400-2500 MHz
		SRD	2400 – 2483.5 MHz: Non-specific & Radio Determination Application. 2446-2454 MHz: Radio Frequency Identification (RFID) Applications Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
		DRONE	2400-2483.5MHz: Annex 9 Regulation Requirement for Drone

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
5.150 5.282 5.395	5.150 5.282	WAS/RLAN	2400-2483.5 MHz Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
2 450-2 483.5 MHz	2 450-2 483.5 MHz (CIVIL)		
FIXED	FIXED		
MOBILE	MOBILE		
Radiolocation	Radiolocation		
		ISM	2400-2500 MHz
		SRD	2400 – 2483.5 MHz: Movement detection and alert & Non-specific Short Range Devices. 2446-2454 MHz: Radio Frequency Identification (RFID) Applications Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.150	5.150	WAS/RLAN	2400-2483.5 MHz. Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
2 483.5-2 500 MHz	2 483.5-2 500 MHz (CIVIL)		
FIXED	FIXED		
MOBILE	MOBILE	Mobile applications	
MOBILE-SATELLITE (space-to-Earth) 5.351A	MOBILE-SATELLITE (space-to-Earth) 5.351A	Mobile satellite applications	
RADIODETERMINATION-SATELLITE (space-to-Earth) 5.398	RADIODETERMINATION-SATELLITE (space-to-Earth) 5.398		
Radiolocation 5.398A	Radiolocation		
5.150 5.368 5.372A 5.399 5.401 5.402	5.150 5.368 5.372A 5.402	ISM SRD	2483.5-2500 MHz: Medical data acquisition applications Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
2 500-2 520 MHz	2 500-2 520 MHz (CIVIL)		
FIXED 5.410	FIXED 5.410		
MOBILE except aeronautical mobile 5.384A 5.409A	MOBILE except aeronautical mobile 5.384A 5.409A	IMT	
5.412			
2 520-2 655 MHz	2 520-2 655 MHz (CIVIL)		
FIXED 5.410	FIXED 5.410		
MOBILE except aeronautical mobile 5.384A 5.409A	MOBILE except aeronautical mobile 5.384A 5.409A	IMT	
BROADCASTING-SATELLITE 5.413 5.416	BROADCASTING-SATELLITE 5.413 5.416		
5.339 5.412 5.418B 5.418C	5.339 5.418B 5.418C		
2 655-2 670 MHz	2 655-2 670 MHz (CIVIL)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
FIXED 5.410	FIXED 5.410		
MOBILE except aeronautical mobile 5.384A 5.409A	MOBILE except aeronautical mobile 5.384A 5.409A	IMT	
BROADCASTING-SATELLITE 5.208B 5.413 5.416	BROADCASTING-SATELLITE 5.208B 5.413 5.416		
Earth exploration-satellite (passive)	Earth exploration-satellite (passive)		
Radio astronomy	Radio astronomy		
Space research (passive)	Space research (passive)		
5.149 5.412	5.149		
2 670-2 690 MHz	2 670-2 690 MHz (CIVIL)		
FIXED 5.410	FIXED 5.410		
MOBILE except aeronautical mobile 5.384A 5.409A	MOBILE except aeronautical mobile 5.384A 5.409A	IMT	
Earth exploration-satellite (passive)	Earth exploration-satellite (passive)		
Radio astronomy	Radio astronomy		
Space research (passive)	Space research (passive)		
5.149 5.412	5.149		
2 690-2 700 MHz	2 690-2 700 MHz (CIVIL)		
EARTH EXPLORATION- SATELLITE (passive)	EARTH EXPLORATION- SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340 5.422	5.340 5.422		Passive band. No frequency assignment for transmitting stations is permitted in this band
2 700-2 900 MHz	2 700-2 900 MHz (SHARED)		
AERONAUTICAL RADIONAVIGATION 5.337	AERONAUTICAL RADIONAVIGATION 5.337	Radar and Radionavigation systems	
Radiolocation		Meteorological radars	
	Radiolocation		
5.423	5.423		
2 900-3 100 MHz	2 900-3 100 MHz (SHARED)		
RADIOLOCATION 5.424A	RADIOLOCATION 5.424A		
RADIONAVIGATION 5.426	RADIONAVIGATION 5.426	Radar and Radionavigation systems	
5.425 5.427	5.425 5.427	RACON	2920-3100 MHz Annex 6 List of the System of Safety services and Associated Frequencies Band
3 100-3 300 MHz	3 100-3 300 MHz (SHARED)		
RADIOLOCATION	RADIOLOCATION	Radiodetermination applications	
Earth exploration-satellite (active)	Earth exploration-satellite (active)		
Space research (active)	Space research (active)		
5.149 5.428	5.149		
3 300-3 400 MHz	3 300-3 400 MHz (SHARED)		
RADIOLOCATION	FIXED 5.429	BWA	
	MOBILE 5.429		
	RADIOLOCATION		
5.149 5.429 5.429A 5.429B 5.430	5.149		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
3 400-3 600 MHz	3 400-3 600 MHz (CIVIL)		
FIXED	FIXED	BWA	
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
MOBILE except aeronautical mobile 5.430A	MOBILE except aeronautical mobile 5.430A	IMT	
Radiolocation	Radiolocation		
5.431			
3 600-3800 MHz	3 600-3 800 MHz (CIVIL)		
FIXED	FIXED	BWA	
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
MOBILE except aeronautical mobile 5.433B 5.434A 5.434B 5.435A	MOBILE except aeronautical mobile 5.434A 5.434B	IMT	
3 800-4 200 MHz (CIVIL)	3 800-4 200 MHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)	FSS (S/E)	
Mobile	Mobile		
4 200-4 400 MHz	4 200-4 400 MHz (CIVIL)		
AERONAUTICAL MOBILE (R) 5.436	AERONAUTICAL MOBILE (R) 5.436		
AERONAUTICAL RADIONAVIGATION 5.438	AERONAUTICAL RADIONAVIGATION 5.438	Altimeters	
5.437 5.440	5.437 5.440		
4 400-4 500 MHz	4 400-4 500 MHz (MILITARY)		
FIXED	FIXED		
MOBILE 5.440A	MOBILE	BWA	
4 500-4 800 MHz	4 500-4 800 MHz (SHARED)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth) 5.441	FIXED-SATELLITE (space-to-Earth) 5.441	FSS (S/E)	App. 30B ITU RR. Oman has a national allotment (OMA00000)
MOBILE 5.440A	MOBILE		The band can also be used for coordinated SAP/SAB applications (occasional use only). Priority for FSS networks
4 800-4 990 MHz	4 800-4 990 MHz (MILITARY)		
FIXED	FIXED		
MOBILE 5.440A 5.441A 5.441B 5.442	MOBILE 5.442	BWA	
Radio astronomy	Radio astronomy		
5.149 5.339 5.443	5.149 5.339		
4 990-5 000 MHz	4 990-5 000 MHz (MILITARY)		
FIXED	FIXED		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	BWA	
RADIO ASTRONOMY	RADIO ASTRONOMY		
Space research (passive)	Space research (passive)		
5.149	5.149		
5 000-5 010 MHz	5 000-5 010 MHz (CIVIL)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION		
RADIONAVIGATION-SATELLITE (Earth-to-space)	RADIONAVIGATION-SATELLITE (Earth-to-space)	Galileo	Recommendation ITU-R M.1906
		Satellite navigation systems	
5 010-5 030 MHz	5 010-5 030 MHz (CIVIL)		
AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION		
RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.443B	RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.443B	Galileo	Recommendation ITU-R M.2031
		Satellite navigation systems	
5 030-5 091 MHz	5 030-5 091 MHz (CIVIL)		
AERONAUTICAL MOBILE (R) 5.443C	AERONAUTICAL MOBILE (R) 5.443C		
AERONAUTICAL MOBILE-SATELLITE (R) 5.443D	AERONAUTICAL MOBILE-SATELLITE (R) 5.443D		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	MLS	
5.444	5.444		
5 091-5 150	5 091-5 150 MHz (CIVIL)		
FIXED-SATELLITE (Earth-to-space) 5.444A	FIXED-SATELLITE (Earth-to-space) 5.444A		
AERONAUTICAL MOBILE 5.444B	AERONAUTICAL MOBILE 5.444B	Airport surface applications	Res. 748
		Aircraft telemetry	Res. 418
		Aeronautical security	Res. 419
AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	MLS	
5.444	5.444		
5 150-5 250 MHz	5 150-5 250 MHz (CIVIL)		
FIXED-SATELLITE (Earth-to-space) 5.447A	FIXED-SATELLITE (Earth-to-space) 5.447A		
MOBILE except aeronautical mobile 5.446A 5.446B	MOBILE except aeronautical mobile 5.446A 5.446B	Feeder links for MSS	
	AERONAUTICAL RADIONAVIGATION		
AERONAUTICAL RADIONAVIGATION			
5.446 5.446C 5.447 5.447B 5.447C	5.446 5.446C 5.447B 5.447C	WAS/RLAN	5150 – 5250 MHz. Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
5 250-5 255 MHz	5 250-5 255 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)		
MOBILE except aeronautical mobile 5.446A 5.447F	MOBILE except aeronautical mobile 5.446A 5.447F		
RADIOLOCATION	RADIOLOCATION	Radars	Tactical and weapon system radars

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
SPACE RESEARCH 5.447D		Position fixing	
		Shipborne and VTS radars	
		Weather radars	Ground based and airborne
	SPACE RESEARCH 5.447D		
5.448 5.448A	5.448A	WAS/RLAN	5250 – 5350 MHz. Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
5 255- 5 350 MHz	5 255- 5 350 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)		
MOBILE except aeronautical mobile 5.446A 5.447F	MOBILE except aeronautical mobile 5.446A 5.447F		
RADIOLOCATION	RADIOLOCATION	Radars	Tactical and weapon system radars
SPACE RESEARCH (active)		Position fixing	
		Shipborne and VTS radars	
		Weather radars	Ground based and airborne
	SPACE RESEARCH (active)		
5.448 5.448A	5.448A	WAS/RLAN	5250 – 5350 MHz. Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
5 350-5 460 MHz	5 350-5 460 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active) 5.448B	EARTH EXPLORATION-SATELLITE (active) 5.448B		
RADIOLOCATION 5.448D	RADIOLOCATION 5.448D	Radars	Tactical and weapon system radars
AERONAUTICAL RADIONAVIGATION 5.449		Position fixing	
SPACE RESEARCH (active) 5.448C		Shipborne and VTS radars	
		Weather radars	Ground based and airborne
	AERONAUTICAL RADIONAVIGATION 5.449		
	SPACE RESEARCH (active) 5.448C		
5 460-5 470 MHz	5 460-5 470 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)		
RADIOLOCATION 5.448D	RADIOLOCATION 5.448D	Radars	Tactical and weapon system radars
RADIONAVIGATION 5.449		Position fixing	
SPACE RESEARCH (active)		Shipborne and VTS radars	
		Weather radars	Ground based and airborne
	RADIONAVIGATION 5.449		
	SPACE RESEARCH (active)		
5.448B	5.448B		
5 470-5 570 MHz	5 470-5 570 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)		
MOBILE except aeronautical mobile 5.446A 5.450A	MOBILE except aeronautical mobile 5.446A 5.450A		
RADIOLOCATION 5.450B	RADIOLOCATION 5.450B	Radars	Tactical and weapon system radars
MARITIME RADIONAVIGATION		Position fixing	
SPACE RESEARCH (active)		Shipborne and VTS radars	

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		Weather radars	Ground based and airborne
	MARITIME RADIONAVIGATION		
	SPACE RESEARCH (active)		
5.448B 5.450 5.451	5.448B	WAS/RLAN	5470 – 5725 MHz Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
5 570-5 650 MHz	5 570-5 650 MHz (SHARED)		
MOBILE except aeronautical mobile 5.446A 5.450A	MOBILE except aeronautical mobile 5.446A 5.450A		
RADIOLOCATION 5.450B	RADIOLOCATION 5.450B	Radars	Tactical and weapon system radars
MARITIME RADIONAVIGATION		Position fixing	
		Shipborne and VTS radars	
		Weather radars	Ground based and airborne
	MARITIME RADIONAVIGATION		
5.450 5.451 5.452	5.452	WAS/RLAN	5470 – 5725 MHz Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
5 650-5 725 MHz	5 650-5 725 MHz (SHARED)		
MOBILE except aeronautical mobile 5.446A 5.450A			
RADIOLOCATION	FIXED 5.453		
	MOBILE 5.453		
Amateur	RADIOLOCATION	Radars	Tactical and weapon system radars
Space research (deep space)		Position fixing	
		Shipborne and VTS radars	
		Weather radars	Ground based and airborne
	Amateur		
	Space research (deep space)		
5.282 5.451 5.453 5.454 5.455	5.282	WAS/RLAN	5470 – 5725 MHz Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
5 725-5 830 MHz	5 725-5 830 MHz (SHARED)		
FIXED-SATELLITE (Earth-to- space)	FIXED 5.453		
RADIOLOCATION	MOBILE 5.453		
Amateur	FIXED-SATELLITE (Earth-to-space)		
	RADIOLOCATION	Radars	Tactical and weapon system radars
		Weather radars	Ground based and airborne
	Amateur		
		SRD	5725-5875 MHz: Non-specific & Tracking ,Tracing Applications 5795-5805 MHz: Transport & Traffic Telematics. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
		ISM	5725 – 5875 MHz
		DRONE	5725-5875MHz

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
			Annex 9 Regulation Requirement for Drone
5.150 5.451 5.453 5.455	5.150	FWA	5725 – 5850 MHz: Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
5 830-5 850 MHz	5 830-5 850 MHz (SHARED)		
	FIXED 5.453		
	MOBILE 5.453		
FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)		
RADIOLOCATION	RADIOLOCATION	Radars	Tactical and weapon system radars
Amateur		Weather radars	Ground based and airborne
Amateur-satellite (space-to-Earth)	Amateur		
	Amateur-satellite (space-to-Earth)		
		ISM	5725 – 5875 MHz
5.150 5.451 5.453 5.455	5.150	FWA	5725 – 5850 MHz: Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
5 850-5 925 MHz	5 850-5 925 MHz (CIVIL)		
FIXED	FIXED	Fixed links	Priority for FSS networks
FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)	FSS	
MOBILE	MOBILE		
		SRD	5875-5915 MHz: ITS. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.150	5.150	ISM	5725 – 5875 MHz
5 925-6 700 MHz	5 925-6 700 MHz (CIVIL)		
FIXED 5.457	FIXED	Fixed links	Priority for FSS networks
FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B	FSS	
		ESV	5925-6425 MHz Annex 13 “Regulation for operating earth stations located on board vessels in FSS”.
MOBILE 5.457C 5.457D 5.457E 5.457F	MOBILE 5.457E	IMT	6425-7125 MHz
5.149 5.440 5.458	5.149 5.440 5.458	WAS/RLAN	5925 – 6425 MHz: Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
6 700-7 075 MHz	6 700-7 075 MHz (CIVIL)		
FIXED	FIXED	Fixed links	Priority for FSS networks
FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441	FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441	FSS (E/S)	Band 6725-7025 MHz is regulated by App. 30B ITU RR. Oman has a national allotment (OMA00000)
MOBILE 5.457D 5.457E 5.457F	MOBILE 5.457E	IMT	6425-7125 MHz
5.458 5.458A 5.458B	5.458 5.458A 5.458B		
7 075-7 145 MHz	7 075-7 145 MHz (CIVIL)		
FIXED	FIXED	Fixed links	
MOBILE 5.457E 5.457F	MOBILE 5.457E	IMT	6425-7125 MHz
5.458 5.459	5.458		
7 145-7 190 MHz	7145-7190 MHz (CIVIL)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
FIXED	FIXED	Fixed links	
MOBILE	MOBILE		
SPACE RESEARCH (deep space) (Earth-to-space)	SPACE RESEARCH (deep space) (Earth-to-space)		
5.458 5.459	5.458 5.459		
7 190-7 235 MHz	7 190-7 235 MHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A 5.460B	FIXED	Fixed links	
FIXED	MOBILE		
MOBILE	SPACE RESEARCH (Earth-to-space) 5.460		
SPACE RESEARCH (Earth-to-space) 5.460	EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A 5.460B		
5.458 5.459	5.458		
7 235-7 250 MHz	7 235-7 250 MHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A	FIXED	Fixed links	
FIXED	MOBILE		
MOBILE	EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A		
5.458	5.458		
7 250-7 300 MHz	7 250-7 300 MHz (SHARED)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
MOBILE	MOBILE		
5.461	5.461	Mobile satellite applications	7250-7375 MHz Subject to coordination under No 9.21 ITU RR
7 300-7 375 MHz	7 300-7 375 MHz (SHARED)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
5.461	5.461	Mobile satellite applications	7250-7375 MHz Subject to coordination under No 9.21 ITU RR
7 375-7 450 MHz	7 375-7 450 MHz (SHARED)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB		
5.461AC	5.461AC		
7 450-7 550 MHz	7 450-7 550 MHz (SHARED)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
METEOROLOGICAL-SATELLITE (space-to-Earth)	METEOROLOGICAL-SATELLITE (space-to-Earth)	Meteorological satellites	Limited to non-GSO satellite systems
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB		
5.461A 5.461AC	5.461A 5.461AC		
7 550-7 750 MHz	7 550-7 750 MHz (SHARED)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		Military satellite operations
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB		
5.461AC	5.461AC		
7 750-7 900 MHz	7 750-7 900 MHz (SHARED)		
FIXED	FIXED	Fixed links	Including transportable radio relay systems
METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B	METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
7 900-8 025 MHz	7 900-8 025 MHz (SHARED)		
FIXED	FIXED	Fixed links	Including transportable radio relay systems
FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)		
MOBILE	MOBILE		
5.461	5.461		
8 025-8 175 MHz	8 025-8 175 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (space-to-Earth)	EARTH EXPLORATION-SATELLITE (space-to-Earth)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)		Military satellite operations
MOBILE 5.463	MOBILE 5.463	Mobile applications	8025 – 8200 MHz
5.462A	5.462A		
8 175-8 215 MHz	8 175-8 215 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (space-to-Earth)	EARTH EXPLORATION-SATELLITE (space-to-Earth)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)		Military satellite operations
METEOROLOGICAL-SATELLITE (Earth-to-space)	METEOROLOGICAL-SATELLITE (Earth-to-space)		
MOBILE 5.463	MOBILE 5.463	Mobile applications	8025 – 8200 MHz
5.462A	5.462A		
8 215-8 400 MHz	8 215-8 400 MHz (MILITARY)		
EARTH EXPLORATION-SATELLITE (space-to-Earth)	EARTH EXPLORATION-SATELLITE (space-to-Earth)		
FIXED	FIXED	Fixed links	

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)		Military satellite operations
MOBILE 5.463	MOBILE 5.463		
5.462A	5.462A		
8 400-8 500 MHz	8 400-8 500 MHz (MILITARY)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
SPACE RESEARCH (space-to-Earth) 5.465 5.466	SPACE RESEARCH (space-to-Earth) 5.465		
8 500-8 550 MHz	8 500-8 550 MHz (SHARED)		
RADIOLOCATION	FIXED 5.468		
	MOBILE 5.468		
	RADIOLOCATION	Aeronautical radionavigation	Airfield approach
5.468 5.469		Radars	Shipborne, land and airborne surveillance and weapon
8 550-8 650 MHz	8 550-8 650 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)		
RADIOLOCATION	FIXED 5.468		
SPACE RESEARCH (active)	MOBILE 5.468		
	RADIOLOCATION	Aeronautical radionavigation	Airfield approach
		Radars	Shipborne, land and airborne surveillance and weapon
	SPACE RESEARCH (active)		
5.468 5.469 5.469A	5.469A		
8 650-8 750 MHz	8 650-8 750 MHz (SHARED)		
RADIOLOCATION	FIXED 5.468		
	MOBILE 5.468		
	RADIOLOCATION	Aeronautical radionavigation	Airfield approach
5.468 5.469		Radars	Shipborne, land and airborne surveillance and weapon
8 750-8 850 MHz	8 750-8 850 MHz (SHARED)		
RADIOLOCATION	RADIOLOCATION	Radars	Shipborne, land and airborne surveillance and weapon
AERONAUTICAL RADIONAVIGATION 5.470	AERONAUTICAL RADIONAVIGATION 5.470	Aeronautical radionavigation	Airfield approach
5.471			
8 850-9 000 MHz	8 850-9 000 MHz (SHARED)		
RADIOLOCATION	RADIOLOCATION	Radars	Shipborne, land and airborne surveillance and weapon
		Aeronautical radionavigation	Airfield approach
MARITIME RADIONAVIGATION 5.472	MARITIME RADIONAVIGATION 5.472		
5.473			
9 000-9 200 MHz	9 000-9 200 MHz (SHARED)		
RADIOLOCATION	RADIOLOCATION	Radars	Shipborne, land and airborne surveillance and weapon
AERONAUTICAL RADIONAVIGATION 5.337	AERONAUTICAL RADIONAVIGATION 5.337	Aeronautical radionavigation	Airfield approach. ICAO Regulations (Annex 10, Volume 1, chapter 3)

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
5.471 5.473A	5.473A		
9 200-9 300 MHz	9 200-9 300 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C		
RADIOLOCATION	RADIOLOCATION	Radars	Shipborne, land and airborne surveillance and weapon
MARITIME RADIONAVIGATION 5.472		Search and rescue radar transponders	9200-9500 MHz. Art. 31 and App. 15 ITU RR
		Aeronautical radionavigation	Airfield approach
	MARITIME RADIONAVIGATION 5.472		
5.473 5.474 5.474D	5.474 5.474D		
9 300-9 500 MHz	9 300-9 500 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)		
RADIOLOCATION	RADIOLOCATION	Radars	Shipborne, land and airborne surveillance and weapon
RADIONAVIGATION 5.475		Search and rescue radar transponders	9200-9500 MHz. Art. 31 and App. 15 ITU RR Annex 6 List of the System of Safety services and Associated Frequencies Band
SPACE RESEARCH (active)		Weather radars	Ground based and airborne
	RADIONAVIGATION 5.475	Aeronautical radionavigation	Airfield approach
	SPACE RESEARCH (active)		
5.427 5.474 5.475A 5.475B 5.476A	5.427 5.474 5.475A 5.475B 5.476A		
9 500-9 800 MHz	9 500-9 800 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)		
RADIOLOCATION	RADIOLOCATION	Radars	Shipborne, land and airborne surveillance and weapon
RADIONAVIGATION	RADIONAVIGATION	Aeronautical radionavigation	Airfield approach
SPACE RESEARCH (active)	SPACE RESEARCH (active)		
5.476A	5.476A		
9 800-9 900 MHz	9 800-9 900 MHz (SHARED)		
RADIOLOCATION	FIXED 5.477		
Earth exploration-satellite (active)	RADIOLOCATION	Radars	Shipborne, land and airborne surveillance and weapon
Fixed		Aeronautical radionavigation	Airfield approach
Space research (active)	Earth exploration-satellite (active)		
	Space research (active)		
5.477 5.478 5.478A 5.478B	5.478A 5.478B		
9 900-10 000 MHz	9 900-10 000 MHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C	FIXED 5.477		
RADIOLOCATION	RADIOLOCATION	Radars	Shipborne, land and airborne surveillance and weapon
Fixed		Aeronautical radionavigation	Airfield approach

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C		
5.474D 5.477 5.478 5.479	5.474D 5.479		
10 – 10.4 GHz	10 – 10.4 GHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C		
FIXED	FIXED	FWA	10.15-10.30 GHz paired with 10.50-10.65 GHz
		Fixed links	
MOBILE	MOBILE		
RADIOLOCATION	RADIOLOCATION		
Amateur	Amateur		
5.474D 5.479	5.474D 5.479		
10.4-10.45 GHz	10.4-10.45 GHz (SHARED)		
FIXED	FIXED	Fixed links	
MOBILE	MOBILE		
RADIOLOCATION	RADIOLOCATION		
Amateur	Amateur		
10.45-10.5 GHz	10.45-10.5 GHz (SHARED)		
RADIOLOCATION	FIXED 5.481		
Amateur	MOBILE 5.481		
Amateur-satellite	RADIOLOCATION	Radars	
	Amateur		
	Amateur-satellite		
5.481			
10.5-10.55 GHz	10.5-10.55 GHz (CIVIL)		
FIXED	FIXED	FWA	10.50-10.65 GHz paired with 10.15-10.30 GHz
		Fixed links	
MOBILE	MOBILE		
Radiolocation	Radiolocation		
10.55-10.6 GHz	10.55-10.6 GHz (CIVIL)		
FIXED	FIXED	FWA	10.50-10.65 GHz paired with 10.15-10.30 GHz
		Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
Radiolocation	Radiolocation		
10.6-10.68 GHz	10.6-10.68 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
FIXED	FIXED	FWA	10.50-10.65 GHz paired with 10.15-10.30 GHz
		Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
Radiolocation	Radiolocation		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
5.149 5.482 5.482A	5.149 5.482 5.482A		
10.68-10.7 GHz	10.68-10.7 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340 5.483	5.340		Passive band. All emissions prohibited in this band
10.7-10.95 GHz	10.7-10.95 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484	FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484	FSS	Band 10.7-10.95/11.2-11.45 GHz is regulated by App. 30B ITU RR. Oman has a national allotment in these bands (App. 30B)
		GSO ESIMs	10.70-10.95 GHz: Res. 121 (WRC-23)
		AES	10.7-12.75 GHz. Annex 10 The use of AES communicating with GEO orbit space stations.
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
10.95 -11.2 GHz	10.95 -11.2 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484	AES	10.7-12.75 GHz. Annex 10 The use of AES communicating with GEO orbit space stations.
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
11.2 -11.45 GHz	11.2 -11.45 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth)5.441 (Earth-to-space) 5.484	FIXED-SATELLITE (space-to-Earth)5.441 (Earth-to-space) 5.484	FSS	Band 10.7-10.95/11.2-11.45 GHz is regulated by App. 30B ITU RR. Oman has a national allotment in these bands (App. 30B)
		GSO ESIMs	11.20-11.45 GHz: Res. 121 (WRC-23)
		AES	10.7-12.75 GHz. Annex 10 The use of AES communicating with GEO orbit space stations.
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
11.45-11.7 GHz	11.45-11.7 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484	AES	10.7-12.75 GHz. Annex 10 The use of AES communicating with GEO orbit space stations.
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
11.7-12.5 GHz	11.7-12.5 GHz (CIVIL)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
FIXED	FIXED		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
BROADCASTING	BROADCASTING		
BROADCASTING-SATELLITE 5.492	BROADCASTING-SATELLITE 5.492	Satellite Broadcasting	The band is regulated by App. 30 ITU RR. SIT within 12.4-12.5 GHz only. Oman national beam OMA12300 planned at 17.2E: 11708.30 + 19.18n MHz, $1 \leq n \leq 40$ (App. 30)
5.487 5.487A	5.487 5.487A	AES	10.7-12.75 GHz. Annex 10 The use of AES communicating with GEO orbit space stations.
12.5-12.75 GHz	12.5-12.75 GHz (CIVIL)		
FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space)	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space)	FSS	
		AES	10.7-12.75 GHz. Annex 10 "The use of AES communicating with GEO orbit space stations" .
	FIXED 5.494		
	MOBILE 5.494		
5.494 5.495 5.496			
12.75-13.25 GHz	12.75-13.25 GHz (CIVIL)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (Earth-to-space) 5.441 5.496A	FIXED-SATELLITE (Earth-to-space) 5.441 5.496A	FSS	The band is regulated by App. 30B ITU RR. Oman has a national allotment (OMA00000) (App. 30B)
		GSO ESIMs	12.75-13.25 GHz: Res. 121 (WRC-23)
MOBILE	MOBILE		
Space research (deep space) (space-to-Earth)	Space research (deep space) (space-to-Earth)		
13.25-13.4 GHz	13.25-13.4 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)		
AERONAUTICAL RADIONAVIGATION 5.497	AERONAUTICAL RADIONAVIGATION 5.497	Doppler navigation aids	
SPACE RESEARCH (active)	SPACE RESEARCH (active)		
5.498A	5.498A		
13.4-13.65 GHz	13.4-13.65 GHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active)	FIXED 5.500		
FIXED-SATELLITE (space-to-Earth) 5.499A 5.499B	MOBILE 5.500		
RADIOLOCATION	EARTH EXPLORATION-SATELLITE (active)		
SPACE RESEARCH 5.499C 5.499D	FIXED-SATELLITE (space-to-Earth) 5.499A 5.499B		
Standard frequency and time signal-satellite (Earth-to-space)	RADIOLOCATION	Doppler navigation aids	
		Radars	13.25 – 14 GHz. Military radars
		Ship berthing radars	
	SPACE RESEARCH 5.499C 5.499D		
	Standard frequency and time signal-satellite (Earth-to-space)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
5.499E 5.500 5.501 5.501B	5.499E 5.501B		
13.65-13.75 GHz	13.65-13.75 GHz (SHARED)		
EARTH EXPLORATION SATELLITE(active)	FIXED 5.500		
RADIOLOCATION	MOBILE 5.500		
SPACE RESEARCH 5.501A	EARTH EXPLORATION SATELLITE(active)		
Standard frequency and time signal-satellite (Earth-to-space)	RADIOLOCATION	Radars	13.25 – 14 GHz. Military radars
		Ship berthing radars	
		Doppler Navigation aids	
	SPACE RESEARCH		
	Standard frequency and time signal-satellite (Earth-to-space)		
5.500 5.501 5.501B	5.501B		
13.75-14GHz	13.75 - 14 GHz (SHARED)		
FIXED-SATELLITE (Earth-to-space) 5.484A	FIXED-SATELLITE (Earth-to-space) 5.484A	FSS	
RADIOLOCATION	RADIOLOCATION	Radars	
Earth exploration-satellite		Ship berthing radars	
Standard frequency and time signal-satellite (Earth-to-space)		Navigation radars	13.25 – 14 GHz. Military radars
Space research	FIXED 5.500		
	MOBILE 5.500		
	Earth exploration-satellite		
	Standard frequency and time signal-satellite (Earth-to-space)		
	Space research		
5.500 5.501 5.502 5.503	5.502 5.503		
14-14.25 GHz	14-14.25 GHz (CIVIL)		
FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B	FIXED 5.505		
RADIONAVIGATION 5.504	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506	FSS	
		ESV	14-14.5 GHz: Annex 13 “Regulation for operating earth stations located on board vessels in FSS”
		AES	14-14.5 GHz. Annex 10 “The use of AES communicating with GEO orbit space stations” .
Mobile-satellite (Earth-to-space) 5.504B 5.504C 5.506A	RADIONAVIGATION 5.504		
Space research	Mobile-satellite (Earth-to-space) 5.504B 5.504C 5.506A		
	Space research		
5.504A 5.505	5.504A		
14.25-14.3 GHz	14.25-14.3 GHz (CIVIL)		
FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B	FIXED 5.505		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
RADIONAVIGATION 5.504	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506	FSS	
		ESV	14-14.5 GHz: Annex 13 “Regulation for operating earth stations located on board vessels in FSS”
		AES	14-14.5 GHz. Annex 10 “The use of AES communicating with GEO orbit space stations “
Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.508A	RADIONAVIGATION 5.504		
Space research	Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.508A		
	Space research		
5.504A 5.505 5.508	5.504A		
14.3-14.4 GHz	14.3-14.4 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506	FSS	
		ESV	14-14.5 GHz: Annex 13 “Regulation for operating earth stations located on board vessels in FSS”
		AES	14-14.5 GHz. Annex 10 “The use of AES communicating with GEO orbit space stations”.
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A	Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A		
Radionavigation-satellite	Radionavigation-satellite		
5.504A	5.504A		
14.4-14.47 GHz	14.4-14.47 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506	FSS	
		ESV	14-14.5 GHz: Annex 13 “Regulation for operating earth stations located on board vessels in FSS”
		AES	14-14.5 GHz. Annex 10 “The use of AES communicating with GEO orbit space stations”.
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A	Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A		
Space research (space-to-Earth)	Space research (space-to-Earth)		
5.504A	5.504A		
14.47-14.5 GHz	14.47-14.5 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506	FSS	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
		ESV	14-14.5 GHz: Annex 13 “Regulation for operating earth stations located on board vessels in FSS”
		AES	14-14.5 GHz. Annex 10 “The use of AES communicating with GEO orbit space stations”.

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A	Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A		
Radio astronomy	Radio astronomy		
5.149 5.504A	5.149 5.504A		
14.5-14.75 GHz	14.5-14.75 GHz (SHARED)		
FIXED	FIXED	Fixed links	Including tactical fixed data links
FIXED-SATELLITE (Earth-to-space) 5.509B 5.509C 5.509D 5.509E 5.509F 5.510	FIXED-SATELLITE (Earth-to-space) 5.509B 5.509C 5.509D 5.509E 5.509F 5.510		
MOBILE	MOBILE		Tactical mobile data links
Space research 5.509G	Space research 5.509G		
14.75-14.8 GHz	14.75-14.8 GHz		
FIXED	FIXED	Fixed links	Including tactical fixed data links
FIXED-SATELLITE (Earth-to-space) 5.510	FIXED-SATELLITE (Earth-to-space) 5.510		
MOBILE	MOBILE		Tactical mobile data links
Space research 5.509G	Space research 5.509G		
14.8-15.35 GHz	14.8-15.35 GHz (SHARED)		
FIXED	FIXED	Fixed links	Including tactical fixed data links
MOBILE	MOBILE		Tactical mobile data links
SPACE RESEARCH 5.510A	SPACE RESEARCH 5.510A		
5.339	5.339		
15.35-15.4 GHz	15.35-15.4 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
	Fixed 5.511		
	Mobile 5.511		
5.340 5.511	5.34		Passive band. All emissions prohibited in this band
15.4-15.41 GHz	15.4-15.41 GHz (CIVIL)		
RADIOLOCATION 5.511E 5.511F	RADIOLOCATION 5.511E 5.511F		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	Doppler radar low power sensing	
		Ground movement radars	
15.41-15.43 GHz	15.4-15.43 GHz (CIVIL)		
RADIOLOCATION 5.511E 5.511F	RADIOLOCATION 5.511E 5.511F		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	Doppler radar low power sensing	
		Ground movement radars	
Aeronautical mobile (OR) 5.511G	Aeronautical mobile (OR) 5.511G		
15.43-15.63 GHz	15.43-15.63 GHz (CIVIL)		
FIXED-SATELLITE (Earth-to-space) 5.511A	FIXED-SATELLITE (Earth-to-space) 5.511A	FSS	MSS Feeder links
RADIOLOCATION 5.511E 5.511F	RADIOLOCATION 5.511E 5.511F		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	Doppler radar low power sensing	

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		Ground movement radars	
Aeronautical mobile (OR)5.511G	Aeronautical mobile (OR) 5.511G		
5.511C	5.511C		
15.63-15.7 GHz	15.63-15.7 GHz (CIVIL)		
RADIOLOCATION 5.511E 5.511F	RADIOLOCATION 5.511E 5.511F		
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	Doppler radar low power sensing	
		Ground movement radars	
Aeronautical mobile (OR) 5.511G	Aeronautical mobile (OR) 5.511G		
15.7-16.6 GHz	15.7-16.6 GHz (MILITARY)		
RADIOLOCATION	FIXED 5.512		
	MOBILE 5.512		
	RADIOLOCATION	Military systems	Land, airborne and naval radars
5.512 5.513			
16.6-17.1 GHz	16.6-17.1 GHz (MILITARY)		
RADIOLOCATION	FIXED 5.512		
Space research (deep space) (Earth-to-space)	MOBILE 5.512		
	RADIOLOCATION	Military systems	Radar applications
	Space research (deep space) (Earth-to-space)		
5.512 5.513			
17.1-17.2 GHz	17.1-17.2 GHz (SHARED)		
RADIOLOCATION	FIXED 5.512		
	MOBILE 5.512		
	RADIOLOCATION	Radars	
5.512 5.513			
17.2-17.3 GHz	17.2-17.3 GHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)		
RADIOLOCATION	FIXED 5.512		
SPACE RESEARCH (active)	MOBILE 5.512		
	RADIOLOCATION	Radars	
	SPACE RESEARCH (active)		
5.512 5.513 5.513A	5.513A		
17.3-17.7 GHz	17.3-17.7 GHz (SHARED)		
FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A 5.516B	FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A 5.516B	Feeder links for the BSS service	The band is regulated by App. 30A ITU RR. Oman national beam OMA12300 at 17.2 E: 17308.3 + 19.18n MHz, 1 ≤ n ≤ 20 (App. 30A)
		High density FSS	Res. 143 ITU RR
Radiolocation	Radiolocation		
	Fixed 5.514		
	Mobile 5.514		
5.514			

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
17.7-18.1 GHz	17.7-18.1 GHz (SHARED)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (space-to-Earth) 5.484A 5.517A 5.517B (Earth-to-space) 5.516	FIXED-SATELLITE (space-to-Earth) 5.484A 5.517A 5.517B (Earth-to-space) 5.516	Feeder links for the BSS service	The band is regulated by App. 30A ITU RR. Oman national beam OMA12300 at 17.2E: 17308.3 + 19.18n MHz, 21 ≤ n ≤ 40 (RR App. 30A)
		FSS	Coordinated earth stations
		GSO ESIMs	17.7-20.2 GHz: Annex 11 "Use of the frequency bands by ESIM communicating with GEO space stations in FSS" .
		Non-GSO ESIMs	17.7-18.6 GHz: Res. 123 (WRC-23)
MOBILE	MOBILE		
18.1-18.4 GHz	18.1-18.4 GHz (MILITARY)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A 5.517B (Earth-to-space) 5.520	FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A 5.517B (Earth-to-space) 5.520	FSS	Coordinated earth stations
		GSO ESIMs	17.7-20.2 GHz: Annex 11 "Use of the frequency bands by ESIM communicating with GEO space stations in FSS" .
		Non-GSO ESIMs	17.7-18.6 GHz: Res. 123 (WRC-23)
INTER-SATELLITE 5.521A	INTER-SATELLITE 5.521A		
MOBILE	MOBILE		
5.519 5.521	5.519		
18.4-18.6 GHz	18.4-18.6 GHz (MILITARY)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A 5.517B	FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A 5.517B	FSS	Coordinated earth stations
		GSO ESIMs	17.7-20.2 GHz: Annex 11 "Use of the frequency bands by ESIM communicating with GEO space stations in FSS" .
		Non-GSO ESIMs	17.7-18.6 GHz: Res. 123 (WRC-23)
INTER-SATELLITE 5.521A	INTER-SATELLITE 5.521A		
MOBILE	MOBILE		
18.6-18.8 GHz	18.6-18.8 GHz (MILITARY)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (space-to-Earth) 5.517A 5.522B	FIXED-SATELLITE (space-to-Earth) 5.517A 5.522B	FSS	Coordinated earth stations
		GSO ESIMs	17.7-20.2 GHz: Annex 11 "Use of the frequency bands by ESIM communicating with GEO space stations in FSS" .
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
Space research (passive)	Space research (passive)		
5.522A 5.522C	5.522A 5.522C		
18.8-19.3 GHz	18.8-19.3 GHz (MILITARY)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (space-to-Earth) 5.516.B 5.517A 5.517B 5.523A	FIXED-SATELLITE (space-to-Earth) 5.516.B 5.517A 5.517B 5.523A	FSS	Coordinated earth stations
		GSO ESIMs	17.7-20.2 GHz: Annex 11 "Use of the frequency bands by ESIM communicating with GEO space stations in FSS" .
		Non-GSO ESIMs	18.8-19.3 GHz: Res. 123 (WRC-23)
INTER-SATELLITE 5.521A	INTER-SATELLITE 5.521A		
MOBILE	MOBILE		
19.3-19.7 GHz	19.3-19.7 GHz (MILITARY)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.517A 5.523B 5.523C 5.523D 5.523E	FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.517A 5.523B 5.523C 5.523D 5.523E	FSS	
		GSO ESIMs	17.7-20.2 GHz: Annex 11 "Use of the frequency bands by ESIM communicating with GEO space stations in FSS" .
INTER-SATELLITE 5.521A 5.523DA	INTER-SATELLITE 5.521A 5.523DA		
MOBILE	MOBILE		
19.7-20.1 GHz	19.7-20.1 GHz (CIVIL)		
FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.517B 5.527A	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.517B 5.527A	High density FSS	Res. 143 ITU RR
		FSS	
		GSO ESIMs	17.7-20.2 GHz: Annex 11 "Use of the frequency bands by ESIM communicating with GEO space stations in FSS" .
		Non-GSO ESIMs	19.7-20.2 GHz: Res. 123 (WRC-23)
INTER-SATELLITE 5.521A	INTER-SATELLITE 5.521A		
Mobile-satellite (space-to-Earth)	Mobile-satellite (space-to-Earth)		Coordinated earth stations SUT
	FIXED 5.524		
	MOBILE 5.524		
5.524			
20.1-20.2 GHz	20.1-20.2 GHz (CIVIL)		
FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.517B 5.527A	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.517B 5.527A	High density FSS	Res. 143 ITU RR
		FSS	Coordinated earth stations
		GSO ESIMs	17.7-20.2 GHz: Annex 11 "Use of the frequency bands by ESIM communicating with GEO space stations in FSS" .

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		Non-GSO ESIMs	19.7-20.2 GHz: Res. 123 (WRC-23)
INTER-SATELLITE 5.521A	INTER-SATELLITE 5.521A		
MOBILE-SATELLITE (space-to-Earth)	MOBILE-SATELLITE (space-to-Earth)		
	FIXED 5.524		
	MOBILE 5.524		
5.524 5.525 5.526 5.527 5.528	5.525 5.526 5.527 5.528		
20.2-21.2 GHz	20.2-21.2 GHz (SHARED)		
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)	FSS	
MOBILE-SATELLITE (space-to-Earth)	MOBILE-SATELLITE (space-to-Earth)		
Standard frequency and time signal-satellite (space-to-Earth)	Standard frequency and time signal-satellite (space-to-Earth)		
	FIXED 5.524		
	MOBILE 5.524		
5.524 5.529A	5.529A		
21.2-21.4 GHz	21.2-21.4 GHz (MILITARY)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
FIXED	FIXED	Fixed links	21.2-21.4 GHz paired with 22.6-22.8 GHz
MOBILE	MOBILE	Mobile links	Unidirectional and temporary. Including SAP/SAB
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
21.4-22 GHz	21.4-22 GHz (CIVIL)		
FIXED	FIXED		
MOBILE	MOBILE		
BROADCASTING-SATELLITE 5.208B	BROADCASTING-SATELLITE 5.208B	Wideband Definition Television	High
5.530A 5.530B	5.530A 5.530B		
22-22.2 GHz	22-22.2 GHz (CIVIL)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile (R) 5.531A 5.531B 5.531C 5.531D 5.531F	MOBILE except aeronautical mobile (R) 5.531A 5.531B 5.531C 5.531D 5.531F		
5.149	5.149		
22.2-22.21 GHz	22.2-22.21 GHz (CIVIL)		
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
5.149	5.149		
22.21-22.5 GHz	22.21-22.5 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
FIXED	FIXED	Fixed links	
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.149 5.532	5.149 5.532		
22.5-22.55 GHz	22.5-22.55 GHz (CIVIL)		
FIXED	FIXED	Fixed links	
MOBILE	MOBILE		
22.55-23.15 GHz	22.55-22.6 GHz (CIVIL)		
FIXED	FIXED	Fixed links	
INTER-SATELLITE 5.338A	INTER-SATELLITE 5.338A		
MOBILE	MOBILE		
SPACE RESEARCH (Earth-to-space) 5.532A	SPACE RESEARCH (Earth-to-space) 5.532A		
	22.6-23 GHz (MILITARY)		
	FIXED	Fixed links	22.6-22.8 GHz paired with 21.2-21.4 GHz
	INTER-SATELLITE 5.338A		
	MOBILE		
	SPACE RESEARCH (Earth-to-space) 5.532A		
	23-23.15 GHz (CIVIL)		
	FIXED	Fixed links	
	INTER-SATELLITE 5.338A		
	MOBILE		
	SPACE RESEARCH (Earth-to-space) 5.532A		
5.149	5.149		
23.15-23.55 GHz	23.15-23.55 GHz (CIVIL)		
FIXED	FIXED	Fixed links	
INTER-SATELLITE 5.338A	INTER-SATELLITE 5.338A		
MOBILE	MOBILE		
23.55-23.6 GHz	23.55-23.6 GHz (CIVIL)		
FIXED	FIXED	Fixed links	
MOBILE	MOBILE		
23.6-24 GHz	23.6-24 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
			Passive band
5.340	5.340		
24-24.05 GHz	24-24.05 GHz (CIVIL)		
AMATEUR	AMATEUR	Amateur	
AMATEUR-SATELLITE	AMATEUR-SATELLITE	Amateur Satellite	
		ISM	24 – 24.25 GHz

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
5.150	5.150	SRD	24 – 24.25 GHz: Non-specific applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
24.05-24.25 GHz	24.05-24.25 GHz (SHARED)		
RADIOLOCATION	RADIOLOCATION		
Amateur	Amateur		
Earth exploration-satellite (active)	Earth exploration-satellite (active)		
		ISM	24 – 24.25 GHz
		SRD	24 – 24.25 GHz: Non-specific applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.150	5.150	Automotive SRR	24.05-24.25 GHz: Annex 3 Technical Specifications of Short-Range Radar (SRR)
24.25-24.45 GHz	24.25-24.45 GHz (CIVIL)		
FIXED	FIXED		
MOBILE except aeronautical mobile 5.338A 5.532AB	MOBILE except aeronautical mobile 5.338A 5.532AB	IMT	
24.45-24.65 GHz	24.45-24.65 GHz (CIVIL)		
FIXED	FIXED		
INTER-SATELLITE	INTER-SATELLITE		
MOBILE except aeronautical mobile 5.338A 5.532AB	MOBILE except aeronautical mobile 5.338A 5.532AB	IMT	
24.65-24.75 GHz	24.65-24.75 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (Earth-to-space) 5.532B	FIXED-SATELLITE (Earth-to-space) 5.532B		
INTER-SATELLITE	INTER-SATELLITE		
MOBILE except aeronautical mobile 5.338A 5.532AB	MOBILE except aeronautical mobile 5.338A 5.532AB	IMT	
24.75-25.25 GHz	24.75-25.25 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (Earth-to-space) 5.532B	FIXED-SATELLITE (Earth-to-space) 5.532B		
MOBILE except aeronautical mobile 5.338A 5.532AB	MOBILE except aeronautical mobile 5.338A 5.532AB	IMT	
25.25-25.5 GHz	25.25-25.5 GHz (CIVIL)		
FIXED 5.534A	FIXED 5.534A		
INTER-SATELLITE 5.536	INTER-SATELLITE 5.536		
MOBILE 5.338A 5.532AB	MOBILE 5.338A 5.532AB	IMT	
Standard frequency and time signal-satellite (Earth-to-space)	Standard frequency and time signal-satellite (Earth-to-space)		
25.5-27 GHz	25.5-26.5 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (space-to Earth) 5.536B	EARTH EXPLORATION-SATELLITE (space-to Earth) 5.536B		
FIXED 5.534A	FIXED 5.534A	-	-

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
INTER-SATELLITE 5.536	INTER-SATELLITE 5.536		
MOBILE 5.338A 5.532AB	MOBILE 5.338A 5.532AB	IMT	
SPACE RESEARCH (space-to-Earth) 5.536C	SPACE RESEARCH (space-to-Earth) 5.536C		
Standard frequency and time signal-satellite (Earth-to-space)	Standard frequency and time signal-satellite (Earth-to-space)		
	5.536A		
	26.5-27 GHz (MILITARY)		
	EARTH EXPLORATION-SATELLITE (space-to Earth) 5.536A 5.536B		
	FIXED 5.534A	Fixed links	Unidirectional only
	INTER-SATELLITE 5.536		
	MOBILE 5.338A 5.532AB	IMT	
	SPACE RESEARCH (space-to-Earth) 5.536A 5.536C		
	Standard frequency and time signal-satellite (Earth-to-space)		
5.536A	5.536A		
27-27.5 GHz	27-27.5 GHz (MILITARY)		
FIXED	FIXED		
INTER-SATELLITE 5.536	INTER-SATELLITE 5.536		
MOBILE 5.338A 5.532AB	MOBILE 5.338A 5.532AB	IMT	
27.5-28.5 GHz	27.5-28.5 GHz (CIVIL)		
FIXED 5.537A	FIXED 5.537A	Fixed links	27.5-28.5 GHz paired with 28.5-29.5 GHz in FWA spectrum blocks only
		FWA	27.5-28.5 GHz paired with 28.5-29.5 GHz for FDD systems.
FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.517B 5.539	FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.517B 5.539	Feeder links	For HDTV BSS: 27.5-29.5 GHz
		GSO ESIMs	27.5-30 GHz: Annex 11 "Use of the frequency bands by ESIM communicating with GEO space stations in FSS."
		Non-GSO ESIMs	27.5-29.1 GHz: Res. 123 (WRC-23)
INTER-SATELLITE 5.521A	INTER-SATELLITE 5.521A		
MOBILE	MOBILE		
5.538 5.540	5.538 5.540		
28.5-29.1 GHz	28.5-29.1 GHz (CIVIL)		
FIXED	FIXED	Fixed links	28.5-29.5 GHz paired with 27.5-28.5 GHz in FWA spectrum blocks only
		FWA	28.5-29.5 GHz paired with 27.5-28.5 GHz for FDD systems
FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.517B 5.523A 5.539	FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.517B 5.523A 5.539	FSS	
		Feeder links	For HDTV BSS: 27.5-29.5 GHz

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		GSO ESIMs	27.5-30 GHz: Annex 11 "Use of the frequency bands by ESIM communicating with GEO space stations in FSS" .
		Non-GSO ESIMs	27.5-29.1 GHz: Res. 123 (WRC-23)
INTER-SATELLITE 5.521A	INTER-SATELLITE 5.521A		
MOBILE	MOBILE		
Earth exploration-satellite (Earth-to-space) 5.541	Earth exploration-satellite (Earth-to-space) 5.541		
5.540	5.540		
29.1-29.5 GHz	29.1-29.5 GHz (CIVIL)		
FIXED	FIXED	Fixed links	28.5-29.5 GHz paired with 27.5-28.5 GHz in FWA spectrum blocks only
		FWA	28.5-29.5 GHz paired with 27.5-28.5 GHz for FDD systems
FIXED-SATELLITE (Earth-to-space) 5.516B 5.517A 5.523C 5.523E 5.535A 5.539 5.541A	FIXED-SATELLITE (Earth-to-space) 5.516B 5.517A 5.523C 5.523E 5.535A 5.539 5.541A	FSS	
		Feeder links	For HDTV BSS: 27.5-29.5 GHz
		GSO ESIMs	27.5-30 GHz: Annex 11 "Use of the frequency bands by ESIM communicating with GEO space stations in FSS" .
INTER-SATELLITE 5.521A	INTER-SATELLITE 5.521A		
MOBILE	MOBILE		
Earth exploration-satellite (Earth-to-space) 5.541	Earth exploration-satellite (Earth-to-space) 5.541		
5.540	5.540		
29.5-29.9 GHz	29.5-29.9 GHz (CIVIL)		
FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.517B 5.527A 5.539	FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.517B 5.527A 5.539	High Density FSS	SIT/SUT. ITU-RR Resolution 143
		FSS	
		GSO ESIMs	27.5-30 GHz: Annex 11 "Use of the frequency bands by ESIM communicating with GEO space stations in FSS" .
		Non-GSO ESIMs	29.5-30 GHz: Res. 123 (WRC-23)
INTER-SATELLITE 5.521A	INTER-SATELLITE 5.521A		
Earth exploration-satellite (Earth-to-space) 5.541	Earth exploration-satellite (Earth-to-space) 5.541		
Mobile-satellite (Earth-to-space)	Mobile-satellite (Earth-to-space)		
	Fixed 5.542		
	Mobile 5.542		
5.540 5.542	5.540		
29.9-30 GHz	29.9-30 GHz (CIVIL)		
FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.517B 5.527A 5.539	FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.517B 5.527A 5.539	High Density FSS	SIT/SUT
		FSS	
		GSO ESIMs	27.5-30 GHz: Annex 11 "Use of the frequency bands by ESIM communicating with GEO space stations in FSS" .
		Non-GSO ESIMs	29.5-30 GHz: Res. 123 (WRC-23)

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
INTER-SATELLITE 5.521A	INTER-SATELLITE 5.521A		
MOBILE-SATELLITE (Earth-to-space)	MOBILE-SATELLITE (Earth-to-space)	MSS	Uncoordinated earth stations
Earth exploration-satellite (Earth-to-space) 5.541 5.543	Earth exploration-satellite (Earth-to-space) 5.541 5.543		
	Fixed 5.542		
	Mobile 5.542		
5.525 5.526 5.527 5.538 5.540 5.542	5.525 5.526 5.527 5.538 5.540		
30-31 GHz	30-31 GHz (SHARED)		
FIXED-SATELLITE (Earth-to-space) 5.338A	FIXED-SATELLITE (Earth-to-space) 5.338A	FSS	
MOBILE-SATELLITE (Earth-to-space)	MOBILE-SATELLITE (Earth-to-space)	MSS	
Standard frequency and time signal-satellite (space-to-Earth)	Standard frequency and time signal-satellite (space-to-Earth)		
	Fixed 5.542		
	Mobile 5.542		
5.529A 5.542	5.529A		
31-31.3 GHz	31-31.3 GHz (CIVIL)		
FIXED 5.338A 5.543B	FIXED 5.338A 5.543B	Fixed links	-
		FWA	
MOBILE	MOBILE		
Standard frequency and time signal-satellite (space-to-Earth)	Standard frequency and time signal-satellite (space-to-Earth)		
Space research 5.544 5.545	Space research 5.544		
5.149	5.149		
31.3-31.5 GHz	31.3-31.5 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340	5.340		Passive band. All emissions prohibited in this band
31.5-31.8 GHz	31.5-31.8 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	FIXED 5.546		
RADIO ASTRONOMY	MOBILE except aeronautical mobile 5.546		
SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive)		
Fixed	RADIO ASTRONOMY		
Mobile except aeronautical mobile	SPACE RESEARCH (passive)		
5.149 5.546	5.149		Passive band
31.8-32 GHz	31.8-32 GHz (CIVIL)		
FIXED 5.547A	FIXED 5.547A	High Density FS	31.8-33.4 GHz: P-P and P-MP
RADIONAVIGATION	RADIONAVIGATION		
SPACE RESEARCH (deep space) (space-to-Earth)	SPACE RESEARCH (deep space) (space-to-Earth)		
5.547 5.547B 5.548	5.547 5.548		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
32-32.3 GHz	32-32.3 GHz (CIVIL)		
FIXED 5.547A	FIXED 5.547A	High Density FS	31.8-33.4 GHz: P-P and P-MP
RADIONAVIGATION	RADIONAVIGATION		
SPACE RESEARCH (deep space) (space-to-Earth)	SPACE RESEARCH (deep space) (space-to-Earth)		
5.547 5.547C 5.548	5.547 5.548		
32.3-33 GHz	32.3-33 GHz (CIVIL)		
FIXED 5.547A	FIXED 5.547A	High Density FS	31.8-33.4 GHz: P-P and P-MP
INTER-SATELLITE	INTER-SATELLITE		
RADIONAVIGATION	RADIONAVIGATION		
5.547 5.547D 5.548	5.547 5.548		
33-33.4 GHz	33-33.4 GHz (CIVIL)		
FIXED 5.547A	FIXED 5.547A	High Density FS	31.8-33.4 GHz: P-P and P-MP
RADIONAVIGATION	RADIONAVIGATION		
5.547 5.547E	5.547		
33.4-34.2 GHz	33.4-34.2 GHz (SHARED)		
RADIOLOCATION	FIXED 5.549		
	MOBILE 5.549		
	RADIOLOCATION	Radiolocation systems	
5.549		Surveying and measurement	
34.2-34.7 GHz	34.2-34.7 GHz (SHARED)		
RADIOLOCATION	FIXED 5.549		
SPACE RESEARCH (deep space) (Earth-to-space)	MOBILE 5.549		
	RADIOLOCATION	Radiolocation systems	
		Surveying and measurement	
	SPACE RESEARCH (deep space) (Earth-to-space)		
5.549			
34.7-35.2 GHz	34.7-35.2 GHz (SHARED)		
RADIOLOCATION	FIXED 5.549		
Space research 5.550	MOBILE 5.549		
	RADIOLOCATION	Radiolocation systems	
		Surveying and measurement	
	Space research 5.550		
5.549			
35.2-35.5 GHz	35.2-35.5 GHz (SHARED)		
METEOROLOGICAL AIDS	FIXED 5.549		
RADIOLOCATION	METEOROLOGICAL AIDS	Active sensors (satellite)	Rain radar from satellites
	MOBILE 5.549		
	RADIOLOCATION	Radiolocation systems	
5.549			
35.5-36 GHz	35.5-36 GHz (SHARED)		
METEOROLOGICAL AIDS	FIXED 5.549		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
EARTH EXPLORATION-SATELLITE (active)	METEOROLOGICAL AIDS	Active sensors (satellite)	
RADIOLOCATION	MOBILE 5.549		
SPACE RESEARCH (active)	EARTH EXPLORATION-SATELLITE (active)	Active sensors (satellite)	
	RADIOLOCATION	Radiolocation systems	
	SPACE RESEARCH (active)		
5.549 5.549A	5.549A		
36-37 GHz	36-37 GHz (SHARED)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
FIXED	FIXED	Fixed links	
MOBILE	MOBILE	Mobile links	
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.149 5.550A	5.149 5.550A		
37-37.5 GHz	37-37.5 GHz (SHARED)		
FIXED	FIXED	High Density FS	37.0-39.5 GHz: P-P and P-MP
MOBILE except aeronautical mobile 5.550B	MOBILE except aeronautical mobile 5.550B		
SPACE RESEARCH (space-to-Earth)	SPACE RESEARCH (space-to-Earth)		
5.547	5.547		
37.5-38 GHz	37.5-38 GHz (SHARED)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth) 5.550C 5.550CA	FIXED-SATELLITE (space-to-Earth) 5.550C 5.550CA		
MOBILE except aeronautical mobile 5.550B	MOBILE except aeronautical mobile 5.550B	IMT	
SPACE RESEARCH (space-to-Earth)	SPACE RESEARCH (space-to-Earth)		
Earth exploration-satellite (space-to-Earth)	Earth exploration-satellite (space-to-Earth)		
5.547	5.547		
38-39.5 GHz	38-39.5 GHz (SHARED)		
FIXED 5.550D	FIXED 5.550D		
FIXED-SATELLITE (space-to-Earth) 5.550C	FIXED-SATELLITE (space-to-Earth) 5.550C		
MOBILE 5.550B	MOBILE 5.550B	IMT	
Earth exploration-satellite (space-to-Earth)	Earth exploration-satellite (space-to-Earth)		
5.547	5.547		
39.5-40 GHz	39.5-40 GHz (SHARED)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C	FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C		
MOBILE 5.550B	MOBILE 5.550B	IMT	
MOBILE-SATELLITE (space-to-Earth)	MOBILE-SATELLITE (space-to-Earth)		
Earth exploration-satellite (space-to-Earth)	Earth exploration-satellite (space-to-Earth)		
5.547 5.550E	5.547 5.550E		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
40-40.5 GHz	40-40.5 GHz (SHARED)		
EARTH EXPLORATION-SATELLITE (Earth-to-space)	EARTH EXPLORATION-SATELLITE (Earth-to-space)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C	FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C		
MOBILE 5.550B	MOBILE 5.550B	IMT	
MOBILE-SATELLITE (space-to-Earth)	MOBILE-SATELLITE (space-to-Earth)		
SPACE RESEARCH (Earth-to-space)	SPACE RESEARCH (Earth-to-space)		
Earth exploration-satellite (space-to-Earth)	Earth exploration-satellite (space-to-Earth)		
5.550E	5.550E		
40.5-41 GHz	40.5-41 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth) 5.550C	FIXED-SATELLITE (space-to-Earth) 5.550C		
LAND MOBILE 5.550B	LAND MOBILE 5.550B	IMT	
BROADCASTING	BROADCASTING		
BROADCASTING-SATELLITE	BROADCASTING-SATELLITE		
Aeronautical mobile	Aeronautical mobile		
Maritime mobile	Maritime mobile		
5.547	5.547		
41-42.5 GHz	41-42.5 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C	FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C		
LAND MOBILE 5.550B	LAND MOBILE 5.550B	IMT	
BROADCASTING	BROADCASTING		
BROADCASTING-SATELLITE	BROADCASTING-SATELLITE		
Aeronautical mobile	Aeronautical mobile		
Maritime mobile	Maritime mobile		
5.547 5.551F 5.551H 5.551I	5.547 5.551H 5.551I		
42.5-43.5 GHz	42.5-43.5 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (Earth-to-space) 5.552	FIXED-SATELLITE (Earth-to-space) 5.552		
MOBILE except aeronautical mobile 5.550B	MOBILE except aeronautical mobile 5.550B	IMT	
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149 5.547	5.149 5.547		
43.5-47 GHz	43.5-45.5 GHz (MILITARY)		
MOBILE 5.553 5.553A	MOBILE 5.553 5.553A	IMT	
MOBILE-SATELLITE	MOBILE-SATELLITE		
RADIONAVIGATION	RADIONAVIGATION		
RADIONAVIGATION-SATELLITE	RADIONAVIGATION-SATELLITE		
	5.554		
	45.5-47 GHz (CIVIL)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
	MOBILE 5.553	IMT	
	MOBILE-SATELLITE		
	RADIONAVIGATION		
	RADIONAVIGATION-SATELLITE		
5.554	5.554		
47-47.2 GHz	47-47.2 GHz (CIVIL)		
AMATEUR	AMATEUR	Amateur	
AMATEUR-SATELLITE	AMATEUR-SATELLITE	Amateur Satellite	
47.2-47.5 GHz	47.2-47.5 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (Earth-to-space) 5.550C 5.552	FIXED-SATELLITE (Earth-to-space) 5.550C 5.552		
MOBILE 5.553B	MOBILE 5.553B	IMT	
5.552A	5.552A		
47.5-47.9 GHz	47.5-47.9 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A	FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A		
MOBILE 5.553B	MOBILE 5.553B	IMT	
47.9-48.2 GHz	47.9-48.2 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (Earth-to-space) 5.550C 5.552	FIXED-SATELLITE (Earth-to-space) 5.550C 5.552		
MOBILE 5.553B	MOBILE 5.553B	IMT	
5.552A	5.552A		
48.2-48.54 GHz	48.2-48.54 GHz (CIVIL)		
FIXED	FIXED	Fixed links	48.5-48.54 GHz
FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A 5.555B	FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A 5.555B	Feeder links	For 40 GHz Broadcasting satellites
		High Density FSS	ITU-RR Resolution 143
MOBILE	MOBILE		
48.54-49.44 GHz	48.54-49.44 GHz (CIVIL)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (Earth-to-space) 5.550C 5.552	FIXED-SATELLITE (Earth-to-space) 5.550C 5.552	Feeder links	48.5-49.2 GHz: For 40 GHz Broadcasting satellites
		FSS	
MOBILE	MOBILE		
5.149 5.340 5.555	5.149 5.340 5.555		
49.44-50.2 GHz	49.44-50.2 GHz (CIVIL)		
FIXED	FIXED	Fixed links	

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
FIXED-SATELLITE (Earth-to-space) 5.338A 5.550C 5.552 (space-to-Earth) 5.516B 5.554A 5.555B	FIXED-SATELLITE (Earth-to-space) 5.338A 5.550C 5.552 (space-to-Earth) 5.516B 5.554A 5.555B	High Density FSS	ITU-RR Resolution 143
MOBILE	MOBILE		
50.2-50.4 GHz	50.2-50.4 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340	5.340		Passive band. All emissions prohibited in this band
50.4-51.4 GHz	50.4-51.4 GHz (SHARED)		Future satellite and terrestrial applications
FIXED	FIXED		
FIXED-SATELLITE (Earth-to-space) 5.338A 5.550C	FIXED-SATELLITE (Earth-to-space) 5.338A 5.550C		
MOBILE	MOBILE		
Mobile-satellite (Earth-to-space)	Mobile-satellite (Earth-to-space)		
51.4-52.4 GHz	51.4-52.4 GHz (CIVIL)		
FIXED	FIXED	High Density FS	
FIXED-SATELLITE (Earth-to-space) 5.555C	FIXED-SATELLITE (Earth-to-space) 5.555C		
MOBILE	MOBILE		
5.338A 5.547 5.556	5.338A 5.547 5.556		
52.4-52.6 GHz	52.4-52.6 GHz (CIVIL)		
FIXED 5.338A	FIXED 5.338A		
MOBILE	MOBILE		
5.547 5.556	5.547 5.556		
52.6-54.25 GHz	52.6-54.25 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340 5.556	5.340 5.556		Passive band. All emissions prohibited in this band
54.25-55.78 GHz	54.25-55.78 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
INTER-SATELLITE 5.556A	INTER-SATELLITE 5.556A		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
			Passive band
55.78-56.9 GHz	55.78-56.9 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
FIXED 5.557A	FIXED 5.557A	High Density FS	55.78-59.0 GHz: P-P and P-MP
INTER-SATELLITE 5.556A	INTER-SATELLITE 5.556A		
MOBILE 5.558	MOBILE 5.558		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.547	5.547		
56.9-57 GHz	56.9-57 GHz (CIVIL)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
FIXED	FIXED	High Density FS	55.78-59.0 GHz: P-P and P-MP
INTER-SATELLITE 5.558A	INTER-SATELLITE 5.558A		
MOBILE 5.558	MOBILE 5.558		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.547	5.547		
57-58.2 GHz	57-58.2 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
FIXED	FIXED	High Density FS	55.78-59.0 GHz: P-P and P-MP
INTER-SATELLITE 5.556A	INTER-SATELLITE 5.556A		
MOBILE 5.558	MOBILE 5.558		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.547	5.547	SRD	57 – 64 GHz: Non-specific applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
58.2-59 GHz	58.2-59 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
FIXED	FIXED	High Density FS	55.78-59.0 GHz: P-P and P-MP
MOBILE	MOBILE		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.547 5.556	5.547 5.556	SRD	57 – 64 GHz: Non-specific applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
59-59.3 GHz	59-59.3 GHz (SHARED)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
FIXED	FIXED	Fixed links	
INTER-SATELLITE 5.556A	INTER-SATELLITE 5.556A		
MOBILE 5.558	MOBILE 5.558	Mobile applications	
RADIOLOCATION 5.559	RADIOLOCATION 5.559	Radiolocation systems	
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
		SRD	57 – 64 GHz: Non-specific applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
		Multiple Gigabit WAS/RLANs)	57-66 GHz Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
59.3-64 GHz	59.3-64 GHz (SHARED)		
FIXED	FIXED	Fixed links	
INTER-SATELLITE	INTER-SATELLITE		
MOBILE 5.558	MOBILE 5.558	Mobile applications	
		Broadband mobile systems	62.0-63.0 GHz paired with 65.0-66.0 GHz
RADIOLOCATION 5.559	RADIOLOCATION 5.559	Radiolocation systems	
		Multiple Gigabit WAS/RLANs)	57-66 GHz Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
		SRD	57 – 64 GHz , 61-61.5 GHz: Non-specific applications. Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.138	5.138	ISM	61 – 61.5 GHz
64-65 GHz	64-65 GHz (CIVIL)		
FIXED	FIXED	High Density FS	64.0-66.0 GHz: P-P and P-MP
INTER-SATELLITE	INTER-SATELLITE		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile		
5.547 5.556	5.547 5.556	Multiple Gigabit WAS/RLANs)	57-66 GHz Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
65-66 GHz	65-66 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE	EARTH EXPLORATION-SATELLITE		
FIXED	FIXED	High Density FS	64.0-66.0 GHz: P-P and P-MP
INTER-SATELLITE	INTER-SATELLITE		
MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	Broadband mobile systems	65.0-66.0 GHz paired with 62.0-63.0 GHz
SPACE RESEARCH	SPACE RESEARCH		
5.547	5.547	Multiple Gigabit WAS/RLANs)	57-66 GHz Annex 4 Technical Specifications for Wideband and Broadband Data Transmission Systems
66-71 GHz	66-71 GHz (CIVIL)		
INTER-SATELLITE	INTER-SATELLITE		
MOBILE 5.553 5.558 5.559AA	MOBILE 5.553 5.558 5.559AA	IMT	
MOBILE-SATELLITE	MOBILE-SATELLITE		
RADIONAVIGATION	RADIONAVIGATION		
RADIONAVIGATION-SATELLITE	RADIONAVIGATION-SATELLITE		
5.554	5.554		
71-74 GHz	71-74 GHz (SHARED)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
MOBILE	MOBILE		
MOBILE-SATELLITE (space-to-Earth)	MOBILE-SATELLITE (space-to-Earth)		
74-76 GHz	74-75.5 GHz (CIVIL)		
FIXED	FIXED	Fixed links	
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
MOBILE	MOBILE		
BROADCASTING	BROADCASTING		
BROADCASTING-SATELLITE	BROADCASTING-SATELLITE		
Space research (space-to-Earth)	Space research (space-to-Earth)		
	5.561		
	75.5-76 GHz (SHARED)		
	FIXED	Fixed links	
	FIXED-SATELLITE (space-to-Earth)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
	MOBILE		
	BROADCASTING		
	BROADCASTING-SATELLITE		
	Space research (space-to-Earth)		
5.561	5.561		
76-77.5 GHz	76-77.5 GHz (SHARED)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
RADIOLOCATION	RADIOLOCATION	Radiolocation systems	
Amateur	Amateur		
Amateur-satellite	Amateur-satellite		
Space research (space-to-Earth)	Space research (space-to-Earth)		
		Automotive LRR (RTTT) SRD	76-77 GHz. TTT & Railway application Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
5.149	5.149	Automotive SRR (RTTT) SRD	77-81 GHz. TTT Applications Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
77.5-78 GHz	77.5-78 GHz (CIVIL)		
AMATEUR	AMATEUR	Amateur	
AMATEUR-SATELLITE	AMATEUR-SATELLITE	Amateur Satellite	
RADIOLOCATION 5.559B	RADIOLOCATION 5.559B		
Radio astronomy	Radio astronomy		
Space research (space-to-Earth)	Space research (space-to-Earth)		
5.149	5.149	Automotive SRR (RTTT) SRD	77-81 GHz. TTT Applications Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
78-79 GHz	78-79 GHz (CIVIL)		
RADIOLOCATION	RADIOLOCATION	Radiolocation systems	
Amateur	Amateur		
Amateur-satellite	Amateur-satellite		
Radio astronomy	Radio astronomy		
Space research (space-to-Earth)	Space research (space-to-Earth)		
5.149 5.560	5.149 5.560	Automotive SRR (RTTT) SRD	77-81 GHz. TTT Applications Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
79-81 GHz	79-81 GHz (SHARED)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
RADIOLOCATION	RADIOLOCATION	Radiolocation systems	
Amateur	Amateur		
Amateur-satellite	Amateur-satellite		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
Space research (space-to-Earth)	Space research (space-to-Earth)		
5.149	5.149	Automotive SRR (RTTT) SRD	77-81 GHz. TTT Applications Annex 2 Short Range Devices, Frequency Ranges & Power Limitations
81-84 GHz	81-84 GHz (SHARED)		
FIXED 5.338A	FIXED 5.338A	Fixed links	
FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)		
MOBILE	MOBILE		
MOBILE-SATELLITE (Earth-to-space)	MOBILE-SATELLITE (Earth-to-space)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
Space research (space-to-Earth)	Space research (space-to-Earth)		
5.149 5.561A	5.149 5.561A		
84-86 GHz	84-86 GHz (CIVIL)		
FIXED 5.338A	FIXED 5.338A	Fixed links	
FIXED-SATELLITE (Earth-to-space) 5.561B	FIXED-SATELLITE (Earth-to-space) 5.561B		
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149	5.149		
86-92 GHz	86-92 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340	5.340		Passive band. All emissions prohibited in this band
92-94 GHz	92-94 GHz (SHARED)		
FIXED 5.338A	FIXED 5.338A		
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
RADIOLOCATION	RADIOLOCATION		
5.149	5.149		Radio astronomy
94-94.1 GHz	94-94.1 GHz (SHARED)		
EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)		
RADIOLOCATION	RADIOLOCATION		
SPACE RESEARCH (active)	SPACE RESEARCH (active)		
Radio astronomy	Radio astronomy		
5.562 5.562A	5.562 5.562A		Active sensors (satellite) Space research (active)
94.1-95 GHz	94.1-95 GHz (SHARED)		
FIXED	FIXED		
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
RADIOLOCATION	RADIOLOCATION		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
5.149	5.149		Radio astronomy
95-100 GHz	95-100 GHz (SHARED)		
FIXED	FIXED		
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
RADIOLOCATION	RADIOLOCATION		
RADIONAVIGATION	RADIONAVIGATION		
RADIONAVIGATION-SATELLITE	RADIONAVIGATION-SATELLITE		
5.149 5.554	5.149 5.554		Radio astronomy
100-102 GHz	100-102 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340 5.341	5.340 5.341		
102-105 GHz	102-105 GHz (CIVIL)		
FIXED	FIXED		
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149 5.341	5.149 5.341		
105-109.5 GHz	105-109.5 GHz (CIVIL)		
FIXED	FIXED		
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive) 5.562B	SPACE RESEARCH (passive) 5.562B		
5.149 5.341	5.149 5.341		
109.5-111.8 GHz	109.5-111.8 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340 5.341	5.340 5.341		
111.8-114.25 GHz	111.8-114.25 GHz (CIVIL)		
FIXED	FIXED		
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive) 5.562B	SPACE RESEARCH (passive) 5.562B		
5.149 5.341	5.149 5.341		
114.25-116 GHz	114.25-116 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340 5.341	5.340 5.341		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
116-119.98 GHz	116-119.98 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
INTER-SATELLITE 5.562C	INTER-SATELLITE 5.562C		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.341	5.341		
119.98-122.25 GHz	119.98-122.25 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
INTER-SATELLITE 5.562C	INTER-SATELLITE 5.562C		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.138 5.341	5.138 5.341	ISM	122-123 GHz
122.25-123 GHz	122.25-123 GHz (CIVIL)		
FIXED	FIXED		
INTER-SATELLITE	INTER-SATELLITE		
MOBILE 5.558	MOBILE 5.558		
Amateur	Amateur		
5.138	5.138	ISM	122-123 GHz
123-130 GHz	123-130 GHz (CIVIL)		
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
MOBILE-SATELLITE (space-to-Earth)	MOBILE-SATELLITE (space-to-Earth)		
RADIONAVIGATION	RADIONAVIGATION		
RADIONAVIGATION-SATELLITE	RADIONAVIGATION-SATELLITE		
Radio astronomy 5.562D	Radio astronomy		
5.149 5.554	5.149 5.554		
130-134 GHz	130-134 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (active) 5.562E	EARTH EXPLORATION-SATELLITE (active) 5.562E		
FIXED	FIXED		
INTER-SATELLITE	INTER-SATELLITE		
MOBILE 5.558	MOBILE 5.558		
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149 5.562A	5.149 5.562A		
134-136 GHz	134-136 GHz (CIVIL)		
AMATEUR	AMATEUR		
AMATEUR-SATELLITE	AMATEUR-SATELLITE		
Radio astronomy	Radio astronomy		
136-141 GHz	136-141 GHz (CIVIL)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
RADIOLOCATION	RADIOLOCATION		
Amateur	Amateur		
Amateur-satellite	Amateur-satellite		
5.149	5.149		
141-148.5 GHz	141-148.5 GHz (CIVIL)		
FIXED	FIXED		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
RADIOLOCATION	RADIOLOCATION		
5.149	5.149		
148.5-151.5 GHz	148.5-151.5 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340	5.340		
151.5-155.5 GHz	151.5-155.5 GHz (CIVIL)		
FIXED	FIXED		
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
RADIOLOCATION	RADIOLOCATION		
5.149	5.149		
155.5-158.5 GHz	155.5-158.5 GHz (CIVIL)		
FIXED	FIXED		
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149	5.149		
158.5-164 GHz	158.5-164 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
MOBILE	MOBILE		
MOBILE-SATELLITE (space-to-Earth)	MOBILE-SATELLITE (space-to-Earth)		
164-167 GHz	164-167 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340	5.340		
167-174.5 GHz	167-174.5 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
INTER-SATELLITE	INTER-SATELLITE		
MOBILE 5.558	MOBILE 5.558		
5.149 5.562D	5.149		
174.5-174.8 GHz	174.5-174.8 GHz (CIVIL)		
FIXED	FIXED		
INTER-SATELLITE	INTER-SATELLITE		
MOBILE 5.558	MOBILE 5.558		
174.8-182 GHz	174.8-182 GHz (CIVIL)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
INTER-SATELLITE 5.562H	INTER-SATELLITE 5.562H		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
182-185 GHz	182-185 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340	5.340		
185-190 GHz	185-190 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
INTER-SATELLITE 5.562H	INTER-SATELLITE 5.562H		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
190-191.8 GHz	190-191.8 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340	5.340		
191.8-200 GHz	191.8-200 GHz (CIVIL)		
FIXED	FIXED		
INTER-SATELLITE	INTER-SATELLITE		
MOBILE 5.558	MOBILE 5.558		
MOBILE-SATELLITE	MOBILE-SATELLITE		
RADIONAVIGATION	RADIONAVIGATION		
RADIONAVIGATION-SATELLITE	RADIONAVIGATION-SATELLITE		
5.149 5.341 5.554	5.149 5.341 5.554		
200-209 GHz	200-209 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340 5.341 5.563A	5.340 5.341 5.563A		
209-217 GHz	209-217 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)		
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149 5.341	5.149 5.341		
217-226 GHz	217-226 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)		
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
SPACE RESEARCH (passive) 5.562B	SPACE RESEARCH (passive) 5.562B		
5.149 5.341	5.149 5.341		
226-231.5 GHz	226-231.5 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340	5.340		
231.5-232 GHz	231.5-232 GHz (CIVIL)		
FIXED	FIXED		
MOBILE	MOBILE		
Radiolocation	Radiolocation		
232-235 GHz	232-235 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
MOBILE	MOBILE		
Radiolocation	Radiolocation		
235-238 GHz	235-238 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive) 5.563AA	EARTH EXPLORATION-SATELLITE (passive) 5.563AA		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
MOBILE	MOBILE		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.563A 5.563B	5.563A 5.563B		
238-239.2 GHz	238-239.2 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
MOBILE	MOBILE		
RADIOLOCATION	RADIOLOCATION		
RADIONAVIGATION	RADIONAVIGATION		
RADIONAVIGATION-SATELLITE	RADIONAVIGATION-SATELLITE		
239.2-240 GHz	239.2-240 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
RADIOLOCATION	RADIOLOCATION		
RADIONAVIGATION	RADIONAVIGATION		
RADIONAVIGATION-SATELLITE	RADIONAVIGATION-SATELLITE		
240-241 GHz	240-241 GHz (CIVIL)		
	EARTH EXPLORATION-SATELLITE (passive)		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
EARTH EXPLORATION-SATELLITE (passive)			
RADIOLOCATION	RADIOLOCATION		
241-242.2 GHz	241-242.2 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
RADIOLOCATION	RADIOLOCATION		
Amateur	Amateur		
Amateur-satellite	Amateur-satellite		
5.149	5.149	ISM	244-246 GHz
242.2-244.2 GHz	242.2-244.2 GHz (CIVIL)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
RADIOLOCATION	RADIOLOCATION		
Amateur	Amateur		
Amateur-satellite	Amateur-satellite		
5.138 5.149	5.138 5.149		
244.2-247.2 GHz	244.2-247.2 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
RADIOLOCATION	RADIOLOCATION		
Amateur	Amateur		
Amateur-satellite	Amateur-satellite		
5.138 5.149	5.138 5.149		
247.2-248 GHz	247.2-248 GHz (CIVIL)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
RADIOLOCATION	RADIOLOCATION		
Amateur	Amateur		
Amateur-satellite	Amateur-satellite		
5.149	5.149		
248-250 GHz	248-250 GHz (CIVIL)		
AMATEUR	AMATEUR		
AMATEUR-SATELLITE	AMATEUR-SATELLITE		
Radio astronomy	Radio astronomy		
5.149	5.149		
250-252 GHz	250-252 GHz (CIVIL)		
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)		
RADIO ASTRONOMY	RADIO ASTRONOMY		

Allocations for ITU Region 1	National Allocations of Sultanate of Oman	Priority	Notes
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340 5.563A	5.340 5.563A		
252-265 GHz	252-265 GHz (CIVIL)		
FIXED	FIXED		
MOBILE	MOBILE		
MOBILE-SATELLITE (Earth-to-space)	MOBILE-SATELLITE (Earth-to-space)		
RADIO ASTRONOMY	RADIO ASTRONOMY		
RADIONAVIGATION	RADIONAVIGATION		
RADIONAVIGATION-SATELLITE	RADIONAVIGATION-SATELLITE		
5.149 5.554	5.149 5.554		
265-275 GHz	265-275 GHz (CIVIL)		
FIXED	FIXED		
FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)		
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149 5.563A	5.149 5.563A		
275-3 000 GHz	275-3 000 GHz		
(Not allocated) 5.564A 5.565	(Not allocated) 5.564A 5.565		

2.6 Footnotes

The footnotes referenced in the Region1 column of table of national frequency allocation in the format "5.nnn" provided here from Article 5, Vol.1, ITU Radio Regulations. Therefore, same notation has been kept intact to ease for further investigation in ITU legal documents.

- 5.53** Administrations authorizing the use of frequencies below 8.3 kHz shall ensure that no harmful interference is caused to services to which the bands above 8.3 kHz are allocated. (WRC-12)
- 5.54** Administrations conducting scientific research using frequencies below 8.3 kHz are urged to advise other administrations that may be concerned in order that such research may be afforded all practicable protection from harmful interference. (WRC-12)
- 5.54A** Use of the 8.3-11.3 kHz frequency band by stations in the meteorological aids service is limited to passive use only. In the band 9-11.3 kHz, meteorological aids stations shall not claim protection from stations of the radionavigation service submitted for notification to the Bureau prior to 1 January 2013. For sharing between stations of the meteorological aids service and stations in the radionavigation service submitted for notification after this date, the most recent version of Recommendation ITU-R RS.1881 should be applied. (WRC-12)
- 5.54B** *Additional allocation:* in Algeria, Saudi Arabia, Bahrain, Egypt, the United Arab Emirates, the Russian Federation, Iran (Islamic Republic of), Iraq, Kuwait, Lebanon, Morocco, Qatar, the Syrian Arab Republic, Sudan and Tunisia, the frequency band 8.3-9 kHz is also allocated to the radionavigation, fixed and mobile services on a primary basis. (WRC-15)
- 5.54C** *Additional allocation:* in China, the frequency band 8.3-9 kHz is also allocated to the maritime radionavigation and maritime mobile services on a primary basis. (WRC-12)
- 5.55** *Additional allocation:* in Armenia, the Russian Federation, Georgia, Kyrgyzstan, Tajikistan and Turkmenistan, the frequency band 14-17 kHz is also allocated to the radionavigation service on a primary basis. (WRC-15)
- 5.56** The stations of services to which the frequency bands 14-19.95 kHz and 20.05-70 kHz and in Region 1 also the frequency bands 72-84 kHz and 86-90 kHz are allocated may transmit standard frequency and time signals. Such stations shall be afforded protection from harmful interference. In Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kyrgyzstan, Tajikistan and Turkmenistan, the frequencies 25 kHz and 50 kHz will be used for this purpose under the same conditions. (WRC-23)
- 5.57** The use of the bands 14-19.95 kHz, 20.05-70 kHz and 70-90 kHz (72-84 kHz and 86-90 kHz in Region 1) by the maritime mobile service is limited to coast radiotelegraph stations (A1A and F1B only). Exceptionally, the use of class J2B or J7B emissions is authorized subject to the necessary bandwidth not exceeding that normally used for class A1A or F1B emissions in the band concerned.
- 5.58** *Additional allocation:* in Armenia, Azerbaijan, the Russian Federation, Georgia, Kyrgyzstan, Tajikistan and Turkmenistan, the frequency band 67-70 kHz is also allocated to the radionavigation service on a primary basis. (WRC-23)
- 5.59** *Different category of service:* in Bangladesh and Pakistan, the allocation of the bands 70-72 kHz and 84-86 kHz to the fixed and maritime mobile services is on a primary basis (see No. **5.33**). (WRC-2000)

- 5.60** In the bands 70-90 kHz (70-86 kHz in Region 1) and 110-130 kHz (112-130 kHz in Region 1), pulsed radionavigation systems may be used on condition that they do not cause harmful interference to other services to which these bands are allocated.
- 5.61** In Region 2, the establishment and operation of stations in the maritime radionavigation service in the bands 70-90 kHz and 110-130 kHz shall be subject to agreement obtained under No. **9.21** with administrations whose services, operating in accordance with the Table, may be affected. However, stations of the fixed, maritime mobile and radiolocation services shall not cause harmful interference to stations in the maritime radionavigation service established under such agreements.
- 5.62** Administrations which operate stations in the radionavigation service in the band 90-110 kHz are urged to coordinate technical and operating characteristics in such a way as to avoid harmful interference to the services provided by these stations.
- 5.63** (SUP - WRC-97)
- 5.64** Only classes A1A or F1B, A2C, A3C, F1C or F3C emissions are authorized for stations of the fixed service in the bands allocated to this service between 90 kHz and 160 kHz (148.5 kHz in Region 1) and for stations of the maritime mobile service in the bands allocated to this service between 110 kHz and 160 kHz (148.5 kHz in Region 1). Exceptionally, class J2B or J7B emissions are also authorized in the bands between 110 kHz and 160 kHz (148.5 kHz in Region 1) for stations of the maritime mobile service.
- 5.65** *Different category of service:* in Bangladesh, the allocation of the bands 112-117.6 kHz and 126-129 kHz to the fixed and maritime mobile services is on a primary basis (see No. **5.33**). (WRC-2000)
- 5.66** *Different category of service:* in Germany, the allocation of the band 115-117.6 kHz to the fixed and maritime mobile services is on a primary basis (see No. **5.33**) and to the radionavigation service on a secondary basis (see No. **5.32**).
- 5.67** *Additional allocation:* in Kyrgyzstan and Turkmenistan, the frequency band 130-148.5 kHz is also allocated to the radionavigation service on a secondary basis. Within and between these countries this service shall have an equal right to operate. (WRC-19)
- 5.67A** Stations in the amateur service using frequencies in the band 135.7-137.8 kHz shall not exceed a maximum radiated power of 1 W (e.i.r.p.) and shall not cause harmful interference to stations of the radionavigation service operating in countries listed in No. **5.67**. (WRC-07)
- 5.67B** The use of the frequency band 135.7-137.8 kHz in Algeria, Egypt, Iraq, Lebanon, Syrian Arab Republic, Sudan, South Sudan and Tunisia is limited to the fixed and maritime mobile services. The amateur service shall not be used in the above-mentioned countries in the frequency band 135.7-137.8 kHz, and this should be taken into account by the countries authorizing such use. (WRC-19)
- 5.68** *Alternative allocation:* in Congo (Rep. of the), the Dem. Rep. of the Congo and South Africa, the frequency band 160-200 kHz is allocated to the fixed service on a primary basis. (WRC-15)
- 5.69** *Additional allocation:* in Somalia, the band 200-255 kHz is also allocated to the aeronautical radionavigation service on a primary basis.

- 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)
- 5.71** (SUP - WRC-19)
- 5.72** (SUP - WRC-12)
- 5.73** The band 285-325 kHz (283.5-325 kHz in Region 1) in the maritime radionavigation service may be used to transmit supplementary navigational information using narrow-band techniques, on condition that no harmful interference is caused to radiobeacon stations operating in the radionavigation service. (WRC-97)
- 5.74** *Additional Allocation:* in Region 1, the frequency band 285.3-285.7 kHz is also allocated to the maritime radionavigation service (other than radiobeacons) on a primary basis.
- 5.75** *Different category of service:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Moldova, Kyrgyzstan, Tajikistan, Turkmenistan, Ukraine and the Black Sea areas of Romania, the allocation of the band 315-325 kHz to the maritime radionavigation service is on a primary basis under the condition that in the Baltic Sea area, the assignment of frequencies in this band to new stations in the maritime or aeronautical radionavigation services shall be subject to prior consultation between the administrations concerned. (WRC-07)
- 5.76** The frequency 410 kHz is designated for radio direction-finding in the maritime radionavigation service. The other radionavigation services to which the band 405-415 kHz is allocated shall not cause harmful interference to radio direction-finding in the band 406.5-413.5 kHz.
- 5.77** *Different category of service:* in Australia, China, the French overseas communities of Region 3, Korea (Rep. of), India, Iran (Islamic Republic of), Japan, Pakistan, Papua New Guinea, the Dem. People's Rep. of Korea and Sri Lanka, the allocation of the frequency band 415-495 kHz to the aeronautical radionavigation service is on a primary basis. In Armenia, Azerbaijan, Belarus, the Russian Federation, Kazakhstan, Latvia, Uzbekistan and Kyrgyzstan, the allocation of the frequency band 435-495 kHz to the aeronautical radionavigation service is on a primary basis. Administrations in all the aforementioned countries shall take all practical steps necessary to ensure that aeronautical radionavigation stations in the frequency band 435-495 kHz do not cause interference to reception by coast stations of transmissions from ship stations on frequencies designated for ship stations on a worldwide basis. (WRC-19)
- 5.78** *Different category of service:* in Cuba, the United States of America and Mexico, the allocation of the band 415-435 kHz to the aeronautical radionavigation service is on a primary basis.
- 5.79** In the maritime mobile service, the frequency bands 415-495 kHz and 505-526.5 kHz are limited to radiotelegraphy and may also be used for the NAVDAT system in accordance with the most recent version of Recommendation ITU-R M.2010, subject to agreement between interested and affected administrations. NAVDAT transmitting stations are limited to coast stations. (WRC-19)
- 5.79A** When establishing coast stations in the NAVTEX service on the frequencies 490 kHz, 518 kHz and 4 209.5 kHz, administrations are strongly recommended to coordinate the

operating characteristics in accordance with the procedures of the International Maritime Organization (IMO) (see Resolution **339 (Rev.WRC-07)**). (WRC-07)

- 5.80** In Region 2, the use of the band 435-495 kHz by the aeronautical radionavigation service is limited to non-directional beacons not employing voice transmission.
- 5.80A** The maximum equivalent isotropically radiated power (e.i.r.p.) of stations in the amateur service using frequencies in the band 472-479 kHz shall not exceed 1 W. Administrations may increase this limit of e.i.r.p. to 5 W in portions of their territory which are at a distance of over 800 km from the borders of Algeria, Saudi Arabia, Azerbaijan, Bahrain, Belarus, China, Comoros, Djibouti, Egypt, United Arab Emirates, the Russian Federation, Iran (Islamic Republic of), Iraq, Jordan, Kazakhstan, Kuwait, Lebanon, Libya, Morocco, Mauritania, **Oman**, Uzbekistan, Qatar, Syrian Arab Republic, Kyrgyzstan, Somalia, Sudan, Tunisia, Ukraine and Yemen. In this frequency band, stations in the amateur service shall not cause harmful interference to, or claim protection from, stations of the aeronautical radionavigation service. (WRC-12)
- 5.80B** The use of the frequency band 472-479 kHz in Algeria, Saudi Arabia, Azerbaijan, Bahrain, Belarus, China, Comoros, Djibouti, Egypt, United Arab Emirates, the Russian Federation, Iraq, Jordan, Kazakhstan, Kuwait, Lebanon, Libya, Mauritania, **Oman**, Uzbekistan, Qatar, Syrian Arab Republic, Kyrgyzstan, Somalia, Sudan, Tunisia and Yemen is limited to the maritime mobile and aeronautical radionavigation services. The amateur service shall not be used in the above-mentioned countries in this frequency band, and this should be taken into account by the countries authorizing such use. (WRC-12)
- 5.81** (SUP - WRC-2000)
- 5.82** In the maritime mobile service, the frequency 490 kHz is to be used exclusively for the transmission by coast stations of navigational and meteorological warnings and urgent information to ships, by means of narrow-band direct-printing telegraphy. The conditions for use of the frequency 490 kHz are prescribed in Articles **31** and **52**. In using the frequency band 415-495 kHz for the aeronautical radionavigation service, administrations are requested to ensure that no harmful interference is caused to the frequency 490 kHz. In using the frequency band 472-479 kHz for the amateur service, administrations shall ensure that no harmful interference is caused to the frequency 490 kHz. (WRC-12)
- 5.82A** (SUP - WRC-12)
- 5.82B** (SUP - WRC-12)
- 5.82C** The frequency band 495-505 kHz is used for the international NAVDAT system as described in the most recent version of Recommendation ITU-R M.2010. NAVDAT transmitting stations are limited to coast stations. (WRC-19)
- 5.82D** When establishing coast stations in the NAVDAT system on the frequencies 500 kHz and 4 226 kHz, the conditions for the use of the frequencies 500 kHz and 4 226 kHz are prescribed in Articles **31** and **52**. Administrations are strongly recommended to coordinate the NAVDAT systems operating characteristics in accordance with the procedures of the International Maritime Organization (IMO) (see Resolution **364 (WRC-23)**). (WRC-23)
- 5.83** (SUP - WRC-07)

- 5.84** The conditions for the use of the frequency 518 kHz by the maritime mobile service are prescribed in Articles **31** and **52**. (WRC-07)
- 5.85** Not used.
- 5.86** In Region 2, in the band 525-535 kHz the carrier power of broadcasting stations shall not exceed 1 kW during the day and 250 W at night.
- 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)
- 5.87A** *Additional allocation:* in Uzbekistan, the band 526.5-1 606.5 kHz is also allocated to the radionavigation service on a primary basis. Such use is subject to agreement obtained under No. **9.21** with administrations concerned and limited to ground-based radiobeacons in operation on 27 October 1997 until the end of their lifetime. (WRC-97)
- 5.88** *Additional allocation:* in China, the band 526.5-535 kHz is also allocated to the aeronautical radionavigation service on a secondary basis.
- 5.89** In Region 2, the use of the band 1 605-1 705 kHz by stations of the broadcasting service is subject to the Plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988).
The examination of frequency assignments to stations of the fixed and mobile services in the band 1 625-1 705 kHz shall take account of the allotments appearing in the Plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988).
- 5.90** In the band 1 605-1 705 kHz, in cases where a broadcasting station of Region 2 is concerned, the service area of the maritime mobile stations in Region 1 shall be limited to that provided by ground-wave propagation.
- 5.91** *Additional allocation:* in the Philippines and Sri Lanka, the band 1 606.5-1 705 kHz is also allocated to the broadcasting service on a secondary basis. (WRC-97)
- 5.92** Some countries of Region 1 use radiodetermination systems in the bands 1 606.5-1 625 kHz, 1 635-1 800 kHz, 1 850-2 160 kHz, 2 194-2 300 kHz, 2 502-2 850 kHz and 3 500-3 800 kHz, subject to agreement obtained under No. **9.21**. The radiated mean power of these stations shall not exceed 50 W.
- 5.93** *Additional allocation:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Hungary, Kazakhstan, Latvia, Lithuania, Mongolia, Nigeria, Uzbekistan, Poland, Kyrgyzstan, Slovakia, Tajikistan, Chad, Turkmenistan and Ukraine, the frequency bands 1 625-1 635 kHz, 1 800-1 810 kHz and 2 160-2 170 kHz are also allocated to the fixed and land mobile services on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-15)
- 5.94** Not used.
- 5.95** Not used.

- 5.96** In Germany, Armenia, Austria, Azerbaijan, Belarus, Croatia, Denmark, Estonia, the Russian Federation, Finland, Georgia, Hungary, Ireland, Iceland, Israel, Kazakhstan, Latvia, Liechtenstein, Lithuania, Malta, Moldova, Norway, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Rep., the United Kingdom, Sweden, Switzerland, Tajikistan, Turkmenistan and Ukraine, administrations may allocate up to 200 kHz to their amateur service in the frequency bands 1 715-1 800 kHz and 1 850-2 000 kHz. However, when allocating the frequency bands within this range to their amateur service, administrations shall, after prior consultation with administrations of neighbouring countries, take such steps as may be necessary to prevent harmful interference from their amateur service to the fixed and mobile services of other countries. The mean power of any amateur station shall not exceed 10 W. (WRC-15)
- 5.97** In Region 3, the Loran system operates either on 1 850 kHz or 1 950 kHz, the bands occupied being 1 825-1 875 kHz and 1 925-1 975 kHz respectively. Other services to which the band 1 800-2 000 kHz is allocated may use any frequency therein on condition that no harmful interference is caused to the Loran system operating on 1 850 kHz or 1 950 kHz.
- 5.98** *Alternative allocation:* in Armenia, Azerbaijan, Belarus, Belgium, Cameroon, Congo (Rep. of the), Denmark, Eritrea, Spain, Ethiopia, the Russian Federation, Georgia, Greece, Italy, Kazakhstan, Lebanon, Lithuania, the Syrian Arab Republic, Türkiye, Kyrgyzstan, Somalia, Tajikistan, Tunisia and Turkmenistan, the frequency band 1 810-1 830 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-23)
- 5.99** *Additional allocation:* in Saudi Arabia, Austria, Egypt, Iraq, Libya, Uzbekistan, Romania, Slovakia, Slovenia, Chad, and Togo, the frequency band 1 810-1 830 kHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-23)
- 5.100** In Region 1, the authorization to use the band 1 810-1 830 kHz by the amateur service in countries situated totally or partially north of 40° N shall be given only after consultation with the countries mentioned in Nos. **5.98** and **5.99** to define the necessary steps to be taken to prevent harmful interference between amateur stations and stations of other services operating in accordance with Nos. **5.98** and **5.99**.
- 5.101** (SUP - WRC-12)
- 5.102** *Alternative allocation:* in Bolivia, Chile, Paraguay and Peru, the frequency band 1 850-2 000 kHz is allocated to the fixed, mobile except aeronautical mobile, radiolocation and radionavigation services on a primary basis. (WRC-15)
- 5.103** In Region 1, in making assignments to stations in the fixed and mobile services in the bands 1 850-2 045 kHz, 2 194-2 498 kHz, 2 502-2 625 kHz and 2 650-2 850 kHz, administrations should bear in mind the special requirements of the maritime mobile service.
- 5.104** In Region 1, the use of the band 2 025-2 045 kHz by the meteorological aids service is limited to oceanographic buoy stations.
- 5.106** In Regions 2 and 3, provided no harmful interference is caused to the maritime mobile service, the frequencies between 2 065 kHz and 2 107 kHz may be used by stations of the fixed service communicating only within national borders and whose mean power does not exceed 50 W. In notifying the frequencies, the attention of the Bureau should be drawn to these provisions.

- 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)
- 5.108** The carrier frequency 2 182 kHz is an international distress and calling frequency for radiotelephony. The conditions for the use of the band 2 173.5-2 190.5 kHz are prescribed in Articles **31** and **52**. (WRC-07)
- 5.109** The frequencies 2 187.5 kHz, 4 207.5 kHz, 6 312 kHz, 8 414.5 kHz, 12 577 kHz and 16 804.5 kHz are international distress frequencies for digital selective calling. The conditions for the use of these frequencies are prescribed in Article **31**.
- 5.110** The frequencies 2 174.5 kHz, 4 177.5 kHz, 6 268 kHz, 8 376.5 kHz, 12 520 kHz and 16 695 kHz are used for the automatic connection system (ACS), as described in the most recent version of Recommendation ITU-R M.541. (WRC-23)
- 5.111** The carrier frequencies 2 182 kHz, 3 023 kHz, 5 680 kHz, 8 364 kHz and the frequencies 121.5 MHz, 156.525 MHz, 156.8 MHz and 243 MHz may also be used, in accordance with the procedures in force for terrestrial radiocommunication services, for search and rescue operations concerning manned space vehicles. The conditions for the use of the frequencies are prescribed in Article **31**.
The same applies to the frequencies 10 003 kHz, 14 993 kHz and 19 993 kHz, but in each of these cases emissions must be confined in a band of ± 3 kHz about the frequency. (WRC-07)
- 5.112** *Alternative allocation:* in Sri Lanka, the frequency band 2 194-2 300 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)
- 5.113** For the conditions for the use of the bands 2 300-2 495 kHz (2 498 kHz in Region 1), 3 200-3 400 kHz, 4 750-4 995 kHz and 5 005-5 060 kHz by the broadcasting service, see Nos. **5.16** to **5.20**, **5.21** and **23.3** to **23.10**.
- 5.114** *Alternative allocation:* in Iraq, the frequency band 2 502-2 625 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)
- 5.115** The carrier (reference) frequencies 3 023 kHz and 5 680 kHz may also be used, in accordance with Article **31**, by stations of the maritime mobile service engaged in coordinated search and rescue operations. (WRC-07)
- 5.116** Administrations are urged to authorize the use of the band 3 155-3 195 kHz to provide a common worldwide channel for low power wireless hearing aids. Additional channels for these devices may be assigned by administrations in the bands between 3 155 kHz and 3 400 kHz to suit local needs.
It should be noted that frequencies in the range 3 000 kHz to 4 000 kHz are suitable for hearing aid devices which are designed to operate over short distances within the induction field.
- 5.117** *Alternative allocation:* in Liberia, Sri Lanka and Togo, the frequency band 3 155-3 200 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-23)
- 5.118** *Additional allocation:* in the United States, Mexico and Peru, the frequency band 3 230-3 400 kHz is also allocated to the radiolocation service on a secondary basis. (WRC-19)
- 5.119** *Additional allocation:* in Peru, the frequency band 3 500-3 750 kHz is also allocated to the fixed and mobile services on a primary basis. (WRC-15)

- 5.120** (SUP - WRC-2000)
- 5.121** Not used.
- 5.122** *Alternative allocation:* in Bolivia, Chile, Ecuador, Paraguay and Peru, the frequency band 3 750-4 000 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-15)
- 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)
- 5.124** (SUP - WRC-2000)
- 5.125** *Additional allocation:* in Greenland, the band 3 950-4 000 kHz is also allocated to the broadcasting service on a primary basis. The power of the broadcasting stations operating in this band shall not exceed that necessary for a national service and shall in no case exceed 5 kW.
- 5.126** In Region 3, the stations of those services to which the band 3 995-4 005 kHz is allocated may transmit standard frequency and time signals.
- 5.127** The use of the band 4 000-4 063 kHz by the maritime mobile service is limited to ship stations using radiotelephony (see No. **52.220** and Appendix **17**).
- 5.128** Frequencies in the frequency bands 4 063-4 123 kHz and 4 130-4 438 kHz may be used exceptionally by stations in the fixed service, communicating only within the boundary of the country in which they are located, with a mean power not exceeding 50 W, on condition that harmful interference is not caused to the maritime mobile service. In addition, in Afghanistan, Argentina, Armenia, Belarus, Botswana, Burkina Faso, the Central African Rep., China, the Russian Federation, Georgia, India, Kazakhstan, Mali, Niger, Pakistan, Kyrgyzstan, Tajikistan, Chad, Turkmenistan and Ukraine, in the frequency bands 4 063-4 123 kHz, 4 130-4 133 kHz and 4 408-4 438 kHz, stations in the fixed service, with a mean power not exceeding 1 kW, can be operated on condition that they are situated at least 600 km from the coast and that harmful interference is not caused to the maritime mobile service. (WRC-19)
- 5.129** (SUP - WRC-07)
- 5.130** The conditions for the use of the carrier frequencies 4 125 kHz and 6 215 kHz are prescribed in Articles **31** and **52**. (WRC-07)
- 5.131** The frequency 4 209.5 kHz is used exclusively for the transmission by coast stations of meteorological and navigational warnings and urgent information to ships by means of narrow-band direct-printing techniques. (WRC-97)
- 5.132** The frequencies 4 210 kHz, 6 314 kHz, 8 416.5 kHz, 12 579 kHz, 16 806.5 kHz, 19 680.5 kHz, 22 376 kHz and 26 100.5 kHz are the international frequencies for the transmission of maritime safety information (MSI) (see Appendices **15** and **17**). (WRC-23)
- 5.132A** Stations in the radiolocation service shall not cause harmful interference to, or claim protection from, stations operating in the fixed or mobile services. Applications of the radiolocation service are limited to oceanographic radars operating in accordance with Resolution **612 (Rev.WRC-12)**. (WRC-12)

- 5.132B** *Alternative allocation:* in Armenia, Belarus, Moldova and Kyrgyzstan, the frequency band 4 438-4 488 kHz is allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis. (WRC-19)
- 5.133** *Different category of service:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kazakhstan, Latvia, Lithuania, Niger, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 5 130-5 250 kHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. **5.33**). (WRC-12)
- 5.133A** *Alternative allocation:* in Armenia, Belarus, Moldova and Kyrgyzstan, the frequency bands 5 250-5 275 kHz and 26 200-26 350 kHz are allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)
- 5.133B** Stations in the amateur service using the frequency band 5 351.5-5 366.5 kHz shall not exceed a maximum radiated power of 15 W (e.i.r.p.). However, in Region 2 in Mexico, stations in the amateur service using the frequency band 5 351.5-5 366.5 kHz shall not exceed a maximum radiated power of 20 W (e.i.r.p.). In the following Region 2 countries: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Dominica, El Salvador, Ecuador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Saint Lucia, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela, as well as the overseas countries and territories within the Kingdom of the Netherlands in Region 2, stations in the amateur service using the frequency band 5 351.5-5 366.5 kHz shall not exceed a maximum radiated power of 25 W (e.i.r.p.). (WRC-19)
- 5.134** The use of the frequency bands 5 900-5 950 kHz, 7 300-7 350 kHz, 9 400-9 500 kHz, 11 600-11 650 kHz, 12 050-12 100 kHz, 13 570-13 600 kHz, 13 800-13 870 kHz, 15 600-15 800 kHz, 17 480-17 550 kHz and 18 900-19 020 kHz by the broadcasting service is subject to the application of the procedure of Article **12**. Administrations are encouraged to use these frequency bands to facilitate the introduction of digitally modulated emissions in accordance with the provisions of Resolution **517 (Rev.WRC-19)**. (WRC-19)
- 5.135** (SUP - WRC-97)
- 5.136** *Additional allocation:* frequencies in the band 5 900-5 950 kHz may be used by stations in the following services, communicating only within the boundary of the country in which they are located: fixed service (in all three Regions), land mobile service (in Region 1), mobile except aeronautical mobile (R) service (in Regions 2 and 3), on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)
- 5.137** On condition that harmful interference is not caused to the maritime mobile service, the bands 6 200-6 213.5 kHz and 6 220.5-6 525 kHz may be used exceptionally by stations in the fixed service, communicating only within the boundary of the country in which they are located, with a mean power not exceeding 50 W. At the time of notification of these frequencies, the attention of the Bureau will be drawn to the above conditions.
- 5.137A** The frequencies 6 337.5 kHz, 8 443 kHz, 12 663.5 kHz, 16 909.5 kHz and 22 450.5 kHz are the regional frequencies for the transmission of maritime safety information (MSI) by means of the NAVDAT system (see Appendices **15** and **17**). (WRC-23)

- 5.138** The following bands:
- | | |
|-------------------|--|
| 6 765-6 795 kHz | (centre frequency 6 780 kHz), |
| 433.05-434.79 MHz | (centre frequency 433.92 MHz) in Region 1
except in the countries mentioned in No. 5.280 , |
| 61-61.5 GHz | (centre frequency 61.25 GHz), |
| 122-123 GHz | (centre frequency 122.5 GHz), and |
| 244-246 GHz | (centre frequency 245 GHz) |
- are designated for industrial, scientific and medical (ISM) applications. The use of these frequency bands for ISM applications shall be subject to special authorization by the administration concerned, in agreement with other administrations whose radiocommunication services might be affected. In applying this provision, administrations shall have due regard to the latest relevant ITU-R Recommendations.
- 5.138A** (SUP - WRC-12)
- 5.139** (SUP - WRC-12)
- 5.140** *Additional allocation:* in Angola, Iraq, Somalia and Togo, the frequency band 7 000-7 050 kHz is also allocated to the fixed service on a primary basis. (WRC-15)
- 5.141** *Alternative allocation:* in Egypt, Eritrea, Ethiopia, Guinea, Libya, Madagascar and Niger, the band 7 000-7 050 kHz is allocated to the fixed service on a primary basis. (WRC-12)
- 5.141A** *Additional allocation:* in Uzbekistan and Kyrgyzstan, the bands 7 000-7 100 kHz and 7 100-7 200 kHz are also allocated to the fixed and land mobile services on a secondary basis. (WRC-03)
- 5.141B** *Additional allocation:* in Algeria, Saudi Arabia, Australia, Bahrain, Botswana, Brunei Darussalam, China, Comoros, Korea (Rep. of), Diego Garcia, Djibouti, Egypt, United Arab Emirates, Eritrea, Guinea, Indonesia, Iran (Islamic Republic of), Japan, Jordan, Kuwait, Libya, Mali, Morocco, Mauritania, Niger, New Zealand, **Oman**, Papua New Guinea, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Sudan, South Sudan, Tunisia, Viet Nam and Yemen, the frequency band 7 100-7 200 kHz is also allocated to the fixed and the mobile, except aeronautical mobile (R), services on a primary basis. (WRC-19)
- 5.141C** (SUP - WRC-12)
- 5.142** The use of the band 7 200-7 300 kHz in Region 2 by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3. (WRC-12)
- 5.143** *Additional allocation:* frequencies in the band 7 300-7 350 kHz may be used by stations in the fixed service and in the land mobile service, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)
- 5.143A** In Region 3, frequencies in the band 7 350-7 450 kHz may be used by stations in the fixed service on a primary basis and land mobile service on a secondary basis, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and

to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-12)

- 5.143B** In Region 1, frequencies in the band 7 350-7 450 kHz may be used by stations in the fixed and land mobile services communicating only within the boundary of the country in which they are located on condition that harmful interference is not caused to the broadcasting service. The total radiated power of each station shall not exceed 24 dBW. (WRC-12)
- 5.143C** *Additional allocation:* in Algeria, Saudi Arabia, Bahrain, Comoros, Djibouti, Egypt, United Arab Emirates, Iran (Islamic Republic of), Jordan, Kuwait, Libya, Morocco, Mauritania, Niger, **Oman**, Qatar, the Syrian Arab Republic, Sudan, South Sudan, Tunisia and Yemen, the bands 7 350-7 400 kHz and 7 400-7 450 kHz are also allocated to the fixed service on a primary basis. (WRC-12)
- 5.143D** In Region 2, frequencies in the band 7 350-7 400 kHz may be used by stations in the fixed service and in the land mobile service, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-12)
- 5.143E** (SUP - WRC-12)
- 5.144** In Region 3, the stations of those services to which the band 7 995-8 005 kHz is allocated may transmit standard frequency and time signals.
- 5.145** The conditions for the use of the carrier frequencies 8 291 kHz, 12 290 kHz and 16 420 kHz are prescribed in Articles **31** and **52**. (WRC-07)
- 5.145A** Stations in the radiolocation service shall not cause harmful interference to, or claim protection from, stations operating in the fixed service. Applications of the radiolocation service are limited to oceanographic radars operating in accordance with Resolution **612 (Rev.WRC-12)**. (WRC-12)
- 5.145B** *Alternative allocation:* in Armenia, Belarus, Moldova and Kyrgyzstan, the frequency bands 9 305-9 355 kHz and 16 100-16 200 kHz are allocated to the fixed service on a primary basis. (WRC-19)
- 5.146** *Additional allocation:* frequencies in the bands 9 400-9 500 kHz, 11 600-11 650 kHz, 12 050-12 100 kHz, 15 600-15 800 kHz, 17 480-17 550 kHz and 18 900-19 020 kHz may be used by stations in the fixed service, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies in the fixed service, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)
- 5.147** On condition that harmful interference is not caused to the broadcasting service, frequencies in the bands 9 775-9 900 kHz, 11 650-11 700 kHz and 11 975-12 050 kHz may be used by stations in the fixed service communicating only within the boundary of

the country in which they are located, each station using a total radiated power not exceeding 24 dBW.

5.148 (SUP - WRC-97)

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

13 360-13 410 kHz,	4 950-4 990 MHz,	102-109.5 GHz,
25 550-25 670 kHz,	4 990-5 000 MHz,	111.8-114.25 GHz,
37.5-38.25 MHz,	6 650-6 675.2 MHz,	128.33-128.59 GHz,
73-74.6 MHz in Regions 1 and 3,	10.6-10.68 GHz,	129.23-129.49 GHz,
150.05-153 MHz in Region 1,	14.47-14.5 GHz,	130-134 GHz,
322-328.6 MHz,	22.01-22.21 GHz,	136-148.5 GHz,
406.1-410 MHz,	22.21-22.5 GHz,	151.5-158.5 GHz,
608-614 MHz in Regions 1 and 3,	22.81-22.86 GHz,	168.59-168.93 GHz,
1 330-1 400 MHz,	23.07-23.12 GHz,	171.11-171.45 GHz,
1 610.6-1 613.8 MHz,	31.2-31.3 GHz,	172.31-172.65 GHz,
1 660-1 670 MHz,	31.5-31.8 GHz in Regions 1 and 3,	173.52-173.85 GHz,
1 718.8-1 722.2 MHz,	36.43-36.5 GHz,	195.75-196.15 GHz,
2 655-2 690 MHz,	42.5-43.5 GHz,	209-226 GHz,
3 260-3 267 MHz,	48.94-49.04 GHz,	241-250 GHz,
3 332-3 339 MHz,	76-86 GHz,	252-275 GHz
3 345.8-3 352.5 MHz,	92-94 GHz,	
4 825-4 835 MHz,	94.1-100 GHz,	

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

5.149A *Alternative allocation:* in Armenia, Belarus, Moldova and Kyrgyzstan, the frequency band 13 450-13 550 kHz is allocated to the fixed service on a primary basis and to the mobile, except aeronautical mobile (R), service on a secondary basis. (WRC-19)

5.150 The following bands:

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

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

- 5.151** *Additional allocation:* frequencies in the bands 13 570-13 600 kHz and 13 800-13 870 kHz may be used by stations in the fixed service and in the mobile except aeronautical mobile (R) service, communicating only within the boundary of the country in which they are located, on the condition that harmful interference is not caused to the broadcasting service. When using frequencies in these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)
- 5.152** *Additional allocation:* in Armenia, Azerbaijan, China, Côte d'Ivoire, the Russian Federation, Georgia, Iran (Islamic Republic of), Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the band 14 250-14 350 kHz is also allocated to the fixed service on a primary basis. Stations of the fixed service shall not use a radiated power exceeding 24 dBW. (WRC-03)
- 5.153** In Region 3, the stations of those services to which the band 15 995-16 005 kHz is allocated may transmit standard frequency and time signals.
- 5.154** *Additional allocation:* in Armenia, Azerbaijan, the Russian Federation, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the band 18 068-18 168 kHz is also allocated to the fixed service on a primary basis for use within their boundaries, with a peak envelope power not exceeding 1 kW. (WRC-03)
- 5.155** *Additional allocation:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Moldova, Uzbekistan, Kyrgyzstan, Slovakia, Tajikistan, Turkmenistan and Ukraine, the frequency band 21 850-21 870 kHz is also allocated to the aeronautical mobile (R) service on a primary basis. (WRC-23)
- 5.155A** In Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Moldova, Uzbekistan, Kyrgyzstan, Slovakia, Tajikistan, Turkmenistan and Ukraine, the use of the frequency band 21 850-21 870 kHz by the fixed service is limited to provision of services related to aircraft flight safety. (WRC-23)
- 5.155B** The band 21 870-21 924 kHz is used by the fixed service for provision of services related to aircraft flight safety.
- 5.156** *Additional allocation:* in Nigeria, the band 22 720-23 200 kHz is also allocated to the meteorological aids service (radiosondes) on a primary basis.
- 5.156A** The use of the band 23 200-23 350 kHz by the fixed service is limited to provision of services related to aircraft flight safety.
- 5.157** The use of the band 23 350-24 000 kHz by the maritime mobile service is limited to inter-ship radiotelegraphy.
- 5.158** *Alternative allocation:* in Armenia, Belarus, Moldova and Kyrgyzstan, the frequency band 24 450-24 600 kHz is allocated to the fixed and land mobile services on a primary basis. (WRC-19)
- 5.159** *Alternative allocation:* in Armenia, Belarus, Moldova and Kyrgyzstan, the frequency band 39-39.5 MHz is allocated to the fixed and mobile services on a primary basis. (WRC-19)
- 5.159A** The use of the frequency band 40-50 MHz by the Earth exploration-satellite service (active) shall be in accordance with the geographical area restrictions and the operational and technical conditions defined in Resolution **677 (WRC-23)**. The provisions of this footnote in no way diminish the obligation of the Earth exploration-

satellite service (active) to operate as a secondary service in accordance with Nos. **5.29** and **5.30**. (WRC-23)

- 5.160** *Additional allocation:* in Botswana, Burundi, Dem. Rep. of the Congo and Rwanda, the band 41-44 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-12)
- 5.161** *Additional allocation:* in Iran (Islamic Republic of) and Japan, the band 41-44 MHz is also allocated to the radiolocation service on a secondary basis.
- 5.161A** *Additional allocation:* in Korea (Rep. of), the United States and Mexico, the frequency bands 41.015-41.665 MHz and 43.35-44 MHz are also allocated to the radiolocation service on a primary basis. Stations in the radiolocation service shall not cause harmful interference to, or claim protection from, stations operating in the fixed or mobile services. Applications of the radiolocation service are limited to oceanographic radars operating in accordance with Resolution **612 (Rev.WRC-12)**. (WRC-19)
- 5.161B** *Alternative allocation:* in Albania, Germany, Armenia, Austria, Belarus, Belgium, Bosnia and Herzegovina, Cyprus, Vatican, Croatia, Denmark, Spain, Estonia, Finland, France, Greece, Hungary, Ireland, Iceland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Malta, Moldova, Monaco, Montenegro, Norway, Uzbekistan, Netherlands, Portugal, Türkiye, Kyrgyzstan, Slovakia, Czech Rep., Romania, United Kingdom, San Marino, Slovenia, Sweden, Switzerland and Ukraine, the frequency band 42-42.5 MHz is allocated to the fixed and mobile services on a primary basis. (WRC-23)
- 5.162** *Additional allocation:* in Australia, the band 44-47 MHz is also allocated to the broadcasting service on a primary basis. (WRC-12)
- 5.162A** *Additional allocation:* in Germany, Australia, Austria, Belgium, Bosnia and Herzegovina, China, Vatican, Korea (Rep. of), Denmark, Spain, Estonia, the Russian Federation, Finland, France, Indonesia, Ireland, Iceland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Monaco, Montenegro, Norway, the Netherlands, Poland, Portugal, the Dem. People's Rep. of Korea, the Czech Rep., the United Kingdom, Serbia, Slovenia, Sweden and Switzerland, the frequency band 46-68 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with Resolution **217 (Rev.WRC-23)**. (WRC-23)
- 5.163** *Additional allocation:* in Armenia, Belarus, the Russian Federation, Georgia, Kazakhstan, Latvia, Moldova, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the frequency bands 47-48.5 MHz and 56.5-58 MHz are also allocated to the fixed and land mobile services on a secondary basis. (WRC-19)
- 5.165** *Additional allocation:* in Angola, Cameroon, Congo (Rep. of the), Egypt, Madagascar, Mozambique, Niger, Somalia, Sudan, South Sudan, Tanzania and Chad, the frequency band 47-68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)
- 5.166** (SUP - WRC-15)

- 5.166A** *Different category of service:* in Austria, Cyprus, the Vatican, Croatia, Denmark, Spain, Finland, Hungary, Latvia, the Netherlands, the Czech Republic, the United Kingdom, Slovakia and Slovenia, the frequency band 50.0-50.5 MHz is allocated to the amateur service on a primary basis. Stations in the amateur service in these countries shall not cause harmful interference to, or claim protection from, stations of the broadcasting, fixed and mobile services operating in accordance with the Radio Regulations in the frequency band 50.0-50.5 MHz in the countries not listed in this provision. For a station of these services, the protection criteria in No. **5.169B** shall also apply. In Region 1, with the exception of those countries listed in No. **5.169**, wind profiler radars operating in the radiolocation service under No. **5.162A** are authorized to operate on the basis of equality with stations in the amateur service in the frequency band 50.0-50.5 MHz. (WRC-19)
- 5.166B** In Region 1, stations in the amateur service operating on a secondary basis shall not cause harmful interference to, or claim protection from, stations of the broadcasting service. The field strength generated by an amateur station in Region 1 in the frequency band 50-52 MHz shall not exceed a calculated value of +6 dB(μ V/m) at a height of 10 m above ground for more than 10% of time along the border of a country with operational analogue broadcasting stations in Region 1 and of neighbouring countries with broadcasting stations in Region 3 listed in Nos. **5.167** and **5.168**. (WRC-19)
- 5.166C** In Region 1, stations in the amateur service in the frequency band 50-52 MHz, with the exception of those countries listed in No. **5.169**, shall not cause harmful interference to, or claim protection from, wind profiler radars operating in the radiolocation service under No. **5.162A**. (WRC-19)
- 5.166D** *Different category of service:* in Lebanon, the frequency band 50-52 MHz is allocated to the amateur service on a primary basis. Stations in the amateur service in Lebanon shall not cause harmful interference to, or claim protection from, stations of the broadcasting, fixed and mobile services operating in accordance with the Radio Regulations in the frequency band 50-52 MHz in the countries not listed in this provision. (WRC-19)
- 5.166E** In the Russian Federation, only the frequency band 50.080-50.280 MHz is allocated to the amateur service on a secondary basis. The protection criteria for the other services in the countries not listed in this provision are specified in Nos. **5.166B** and **5.169B**. (WRC-19)
- 5.167** *Alternative allocation:* in Bangladesh, Brunei Darussalam, India, Iran (Islamic Republic of), Pakistan and Singapore, the frequency band 50-54 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis. (WRC-15)
- 5.167A** *Additional allocation:* in Indonesia and Thailand, the frequency band 50-54 MHz is also allocated to the fixed, mobile and broadcasting services on a primary basis. (WRC-15)
- 5.168** *Additional allocation:* in Australia, China and the Dem. People's Rep. of Korea, the band 50-54 MHz is also allocated to the broadcasting service on a primary basis.
- 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)

- 5.169A** *Alternative allocation:* in the following countries in Region 1: Angola, Saudi Arabia, Bahrain, Burkina Faso, Burundi, the United Arab Emirates, Gambia, Jordan, Kenya, Kuwait, Mauritius, Mozambique, **Oman**, Uganda, Qatar, South Sudan and Tanzania, the frequency band 50-54 MHz is allocated to the amateur service on a primary basis. In Guinea-Bissau, the frequency band 50.0-50.5 MHz is allocated to the amateur service on a primary basis. In Djibouti, the frequency band 50-52 MHz is allocated to the amateur service on a primary basis. With the exception of those countries listed in No. **5.169**, stations in the amateur service operating in Region 1 under this footnote, in all or part of the frequency band 50-54 MHz, shall not cause harmful interference to, or claim protection from, stations of other services operating in accordance with the Radio Regulations in Algeria, Egypt, Iran (Islamic Republic of), Iraq, Israel, Libya, Palestine*, the Syrian Arab Republic, the Dem. People's Republic of Korea, Sudan and Tunisia. The field strength generated by an amateur station in the frequency band 50-54 MHz shall not exceed a value of +6 dB(μ V/m) at a height of 10 m above ground for more than 10% of time along the borders of listed countries requiring protection. (WRC-19)
- 5.169B** Except countries listed under No. **5.169**, stations in the amateur service used in Region 1, in all or part of the 50-54 MHz frequency band, shall not cause harmful interference to, or claim protection from, stations of other services used in accordance with the Radio Regulations in Algeria, Armenia, Azerbaijan, Belarus, Egypt, Russian Federation, Iran (Islamic Republic of), Iraq, Kazakhstan, Kyrgyzstan, Libya, Uzbekistan, Palestine*, the Syrian Arab Republic, Sudan, Tunisia and Ukraine. The field strength generated by an amateur station in the frequency band 50-54 MHz shall not exceed a value of +6 dB(μ V/m) at a height of 10 m above ground for more than 10% of time along the borders of the countries listed in this provision. (WRC-19)
- 5.170** *Additional allocation:* in New Zealand, the frequency band 51-54 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-15)
- 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)
- 5.172** *Different category of service:* in the French overseas departments and communities in Region 2 and Guyana, the allocation of the frequency band 54-68 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**). (WRC-15)
- 5.173** *Different category of service:* in the French overseas departments and communities in Region 2 and Guyana, the allocation of the frequency band 68-72 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**). (WRC-15)
- 5.174** (SUP - WRC-07)
- 5.175** *Alternative allocation:* in Armenia, Belarus, the Russian Federation, Kazakhstan, Moldova, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the frequency bands 68-73 MHz and 76-87.5 MHz are allocated to the broadcasting service on a primary basis. In Latvia and Lithuania, the frequency bands 68-73 MHz and 76-87.5 MHz are allocated to the broadcasting and mobile, except aeronautical mobile, services on a primary basis. In Mongolia, the frequency band 76-87.5 MHz is allocated to the broadcasting service on a primary basis; the stations of the broadcasting service shall not cause harmful interference to, or claim protection from, existing or planned fixed

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

and mobile stations in the neighbouring countries. The services to which these frequency bands are allocated in other countries and the broadcasting service in the countries listed above are subject to agreements with the neighbouring countries concerned. (WRC-23)

- 5.176** *Additional allocation:* in Australia, China, Korea (Rep. of), the Philippines, the Dem. People's Rep. of Korea and Samoa, the band 68-74 MHz is also allocated to the broadcasting service on a primary basis. (WRC-07)
- 5.177** *Additional allocation:* in Armenia, Belarus, the Russian Federation, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the frequency band 73-74 MHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-23)
- 5.178** *Additional allocation:* in Colombia, Cuba, El Salvador, Guatemala, Guyana, Honduras and Nicaragua, the band 73-74.6 MHz is also allocated to the fixed and mobile services on a secondary basis. (WRC-12)
- 5.179** *Additional allocation:* in Armenia, Azerbaijan, Belarus, China, the Russian Federation, Georgia, Kazakhstan, Lithuania, Mongolia, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the bands 74.6-74.8 MHz and 75.2-75.4 MHz are also allocated to the aeronautical radionavigation service, on a primary basis, for ground-based transmitters only. (WRC-12)
- 5.180** The frequency 75 MHz is assigned to marker beacons. Administrations shall refrain from assigning frequencies close to the limits of the guardband to stations of other services which, because of their power or geographical position, might cause harmful interference or otherwise place a constraint on marker beacons.
- Every effort should be made to improve further the characteristics of airborne receivers and to limit the power of transmitting stations close to the limits 74.8 MHz and 75.2 MHz.
- 5.181** *Additional allocation:* in Egypt, Israel and the Syrian Arab Republic, the band 74.8-75.2 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. **9.21**. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedure invoked under No. **9.21**. (WRC-03)
- 5.182** *Additional allocation:* in Samoa, the band 75.4-87 MHz is also allocated to the broadcasting service on a primary basis. (WRC-23)
- 5.183** *Additional allocation:* in China, Korea (Rep. of), Japan, the Philippines and the Dem. People's Rep. of Korea, the band 76-87 MHz is also allocated to the broadcasting service on a primary basis.
- 5.184** (SUP - WRC-07)
- 5.185** *Different category of service:* in the United States, the French overseas departments and communities in Region 2 and Guyana, the allocation of the frequency band 76-88 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**). (WRC-23)
- 5.186** (SUP - WRC-97)

- 5.187** *Alternative allocation:* in Albania, the band 81-87.5 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions contained in the Final Acts of the Special Regional Conference (Geneva, 1960).
- 5.188** *Additional allocation:* in Australia, the band 85-87 MHz is also allocated to the broadcasting service on a primary basis. The introduction of the broadcasting service in Australia is subject to special agreements between the administrations concerned.
- 5.189** Not used.
- 5.190** *Additional allocation:* in Monaco, the band 87.5-88 MHz is also allocated to the land mobile service on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-97)
- 5.191** Not used.
- 5.192** *Additional allocation:* in China and Korea (Rep. of), the band 100-108 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-97)
- 5.193** Not used.
- 5.194** *Additional allocation:* in Kyrgyzstan, Somalia and Turkmenistan, the frequency band 104-108 MHz is also allocated to the mobile, except aeronautical mobile (R), service on a secondary basis. (WRC-19)
- 5.195** Not used.
- 5.196** Not used.
- 5.197** *Additional allocation:* in the Syrian Arab Republic, the band 108-111.975 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. **9.21**. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedures invoked under No. **9.21**. (WRC-12)
- 5.197A** *Additional allocation:* the frequency band 108-117.975 MHz is also allocated on a primary basis to the aeronautical mobile (R) service, limited to systems operating in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution **413 (Rev.WRC-23)**. The use of the frequency band 108-112 MHz by the aeronautical mobile (R) service shall be limited to systems composed of ground-based transmitters and associated receivers that provide navigational information in support of air navigation functions in accordance with recognized international aeronautical standards. (WRC-23)
- 5.198** (SUP - WRC-07)
- 5.198A** The use of the frequency band 117.975-137 MHz by the aeronautical mobile-satellite (R) service is subject to coordination under No. **9.11A**. No. **9.16** does not apply. Such use shall be limited to non-geostationary-satellite systems operated in accordance with international aeronautical standards. Resolution **406 (WRC-23)** applies. (WRC-23)
- 5.198B** The use of the frequency band 117.975-137 MHz by the aeronautical mobile (R) service shall have priority over use by the aeronautical mobile-satellite (R) service. (WRC-23)

- 5.199** (SUP - WRC-07)
- 5.200** In the frequency band 117.975-137 MHz, the frequency 121.5 MHz is the aeronautical emergency frequency and, where required, the frequency 123.1 MHz is the aeronautical frequency auxiliary to 121.5 MHz. Mobile stations of the maritime mobile service may communicate on these frequencies under the conditions laid down in Article **31** for distress and safety purposes with stations of the aeronautical mobile service and the aeronautical mobile-satellite service. (WRC-23)
- 5.201** *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Egypt, Estonia, the Russian Federation, Georgia, Hungary, Iran (Islamic Republic of), Iraq (Republic of), Japan, Kazakhstan, Mali, Mongolia, Mozambique, Uzbekistan, Papua New Guinea, Poland, Qatar, Kyrgyzstan, Romania, Senegal, Somalia, Tajikistan and Turkmenistan, the frequency band 132-136 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service. (WRC-23)
- 5.202** *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, the United Arab Emirates, the Russian Federation, Georgia, Iran (Islamic Republic of), Jordan, Mali, **Oman**, Uzbekistan, Poland, the Syrian Arab Republic, Kyrgyzstan, Romania, Senegal, Tajikistan and Turkmenistan, the frequency band 136-137 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service. (WRC-23)
- 5.203** (SUP - WRC-07)
- 5.203A** (SUP - WRC-07)
- 5.203B** (SUP - WRC-07)
- 5.203C** The use of the space operation service (space-to-Earth) with non-geostationary satellite short-duration mission systems in the frequency band 137-138 MHz is subject to Resolution **660 (WRC-19)**. Resolution **32 (WRC-19)*** applies. These systems shall not cause harmful interference to, or claim protection from, the existing services to which the frequency band is allocated on a primary basis. (WRC-19)
- 5.204** *Different category of service:* in Afghanistan, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, China, Cuba, the United Arab Emirates, India, Indonesia, Iran (Islamic Republic of), Iraq, Kuwait, Montenegro, **Oman**, Pakistan, the Philippines, Qatar, Singapore, Thailand and Yemen, the frequency band 137-138 MHz is allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis (see No. **5.33**). (WRC-19)
- 5.205** *Different category of service:* in Israel and Jordan, the allocation of the band 137-138 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. **5.33**).
- 5.206** *Different category of service:* in Armenia, Azerbaijan, Belarus, Bulgaria, Egypt, the Russian Federation, Finland, France, Georgia, Greece, Kazakhstan, Lebanon, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, the Syrian Arab Republic, Slovakia, the Czech Rep., Romania, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 137-

* *Note by the Secretariat:* This Resolution was revised by WRC-23.

138 MHz to the aeronautical mobile (OR) service is on a primary basis (see No. **5.33**). (WRC-2000)

- 5.207** *Additional allocation:* in Australia, the band 137-144 MHz is also allocated to the broadcasting service on a primary basis until that service can be accommodated within regional broadcasting allocations.
- 5.208** The use of the band 137-138 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. (WRC-97)
- 5.208A** In making assignments to space stations in the mobile-satellite service in the frequency bands 137-138 MHz, 387-390 MHz and 400.15-401 MHz and in the maritime mobile-satellite service (space-to-Earth) in the frequency bands 157.1875-157.3375 MHz and 161.7875-161.9375 MHz, administrations shall take all practicable steps to protect the radio astronomy service in the frequency bands 150.05-153 MHz, 322-328.6 MHz, 406.1-410 MHz and 608-614 MHz from harmful interference from unwanted emissions as shown in the most recent version of Recommendation ITU-R RA.769. (WRC-19)
- 5.208B*** In the frequency bands:
137-138 MHz,
157.1875-157.3375 MHz,
161.7875-161.9375 MHz,
387-390 MHz,
400.15-401 MHz,
1 452-1 492 MHz,
1 525-1 610 MHz,
1 613.8-1 626.5 MHz,
2 655-2 690 MHz,
21.4-22 GHz,

Resolution **739 (Rev.WRC-19)** applies. (WRC-19)
- 5.209** The use of the bands 137-138 MHz, 148-150.05 MHz, 399.9-400.05 MHz, 400.15-401 MHz, 454-456 MHz and 459-460 MHz by the mobile-satellite service is limited to non-geostationary-satellite systems. (WRC-97)
- 5.209A** The use of the frequency band 137.175-137.825 MHz by non-geostationary-satellite systems in the space operation service identified as short-duration mission in accordance with Appendix 4 is not subject to No. **9.11A**. (WRC-19)
- 5.210** *Additional allocation:* in Italy and the United Kingdom, the frequency bands 138-143.6 MHz and 143.65-144 MHz are also allocated to the space research service (space-to-Earth) on a secondary basis. (WRC-23)
- 5.211** *Additional allocation:* in Germany, Saudi Arabia, Austria, Bahrain, Belgium, Denmark, the United Arab Emirates, Spain, Finland, Greece, Guinea, Ireland, Israel, Kenya, Kuwait, Lebanon, Liechtenstein, Luxembourg, North Macedonia, Mali, Malta, Montenegro, Norway, the Netherlands, Qatar, Türkiye, Slovakia, the United Kingdom, Serbia, Slovenia, Somalia, Sweden, Switzerland, Tanzania and Tunisia, the frequency band 138-144 MHz is also allocated to the maritime mobile and land mobile services on a primary basis. (WRC-23)

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

- 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)
- 5.213** *Additional allocation:* in China, the band 138-144 MHz is also allocated to the radiolocation service on a primary basis.
- 5.214** *Additional allocation:* in Eritrea, Ethiopia, Kenya, North Macedonia, Montenegro, Serbia, Somalia, Sudan, South Sudan and Tanzania, the frequency band 138-144 MHz is also allocated to the fixed service on a primary basis. (WRC-19)
- 5.215** Not used.
- 5.216** *Additional allocation:* in China, the band 144-146 MHz is also allocated to the aeronautical mobile (OR) service on a secondary basis.
- 5.217** *Alternative allocation:* in Afghanistan, Bangladesh, Cuba, Guyana and India, the band 146-148 MHz is allocated to the fixed and mobile services on a primary basis.
- 5.218** *Additional allocation:* the band 148-149.9 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. **9.21**. The bandwidth of any individual transmission shall not exceed ± 25 kHz.
- 5.218A** The frequency band 148-149.9 MHz in the space operation service (Earth-to-space) may be used by non-geostationary-satellite systems with short-duration missions. Non-geostationary-satellite systems in the space operation service used for a short-duration mission in accordance with Resolution **32 (WRC-19)*** of the Radio Regulations are not subject to agreement under No. **9.21**. At the stage of coordination, the provisions of Nos. **9.17** and **9.18** also apply. In the frequency band 148-149.9 MHz, non-geostationary-satellite systems with short-duration missions shall not cause unacceptable interference to, or claim protection from, existing primary services within this frequency band, or impose additional constraints on the space operation and mobile-satellite services. In addition, earth stations in non-geostationary-satellite systems in the space operation service with short-duration missions in the frequency band 148-149.9 MHz shall ensure that the power flux-density does not exceed -149 dB(W/(m² · 4 kHz)) for more than 1% of time at the border of the territory of the following countries: Armenia, Azerbaijan, Belarus, China, Korea (Rep. of), Cuba, Russian Federation, India, Iran (Islamic Republic of), Japan, Kazakhstan, Malaysia, Uzbekistan, Kyrgyzstan, Thailand and Viet Nam. In case this power flux-density limit is exceeded, agreement under No. **9.21** is required to be obtained from countries mentioned in this footnote. (WRC-19)
- 5.219** The use of the frequency band 148-149.9 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. The mobile-satellite service shall not constrain the development and use of the fixed, mobile and space operation services in the frequency band 148-149.9 MHz. The use of the frequency band 148-149.9 MHz by non-geostationary-satellite systems in the space operation service identified as short-duration mission is not subject to No. **9.11A**. (WRC-19)
- 5.220** The use of the frequency bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. (WRC-15)

* *Note by the Secretariat:* This Resolution was revised by WRC-23.

- 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, Türkiye, Kyrgyzstan, Dem. People's Rep. of Korea, Slovakia, Romania, the United Kingdom, Senegal, Serbia, Sierra Leone, Singapore, Slovenia, Somalia, Sudan, Sri Lanka, South Africa, Sweden, Switzerland, Tanzania, Chad, Togo, Tonga, Trinidad and Tobago, Tunisia, Ukraine, Viet Nam, Yemen, Zambia and Zimbabwe. (WRC-23)
- 5.222** (SUP - WRC-15)
- 5.223** (SUP - WRC-15)
- 5.224** (SUP - WRC-97)
- 5.224A** (SUP - WRC-15)
- 5.224B** (SUP - WRC-15)
- 5.225** *Additional allocation:* in Australia and India, the band 150.05-153 MHz is also allocated to the radio astronomy service on a primary basis.
- 5.225A** *Additional allocation:* in Algeria, Armenia, Azerbaijan, Belarus, China, the Russian Federation, France, Iran (Islamic Republic of), Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Ukraine and Viet Nam, the frequency band 154-156 MHz is also allocated to the radiolocation service on a primary basis. The usage of the frequency band 154-156 MHz by the radiolocation service shall be limited to space-object detection systems operating from terrestrial locations. The operation of stations in the radiolocation service in the frequency band 154-156 MHz shall be subject to agreement obtained under No. **9.21**. For the identification of potentially affected administrations in Region 1, the instantaneous field-strength value of 12 dB(μ V/m) for 10% of the time produced at 10 m above ground level in the 25 kHz reference frequency band at the border of the territory of any other administration shall be used. For the identification of potentially affected administrations in Region 3, the interference-to-noise ratio (I/N) value of -6 dB ($N = -161$ dBW/4 kHz), or -10 dB for applications with greater protection requirements, such as public protection and disaster relief (PPDR ($N = -161$ dBW/4 kHz)), for 1% of the time produced at 60 m above ground level at the border of the territory of any other administration shall be used. In the frequency bands 156.7625-156.8375 MHz, 156.5125-156.5375 MHz, 161.9625-161.9875 MHz, 162.0125-162.0375 MHz, out-of-band e.i.r.p. of space surveillance radars shall not exceed -16 dBW. Frequency assignments to the radiolocation service under this allocation in Ukraine shall not be used without the agreement of Moldova. (WRC-12)

- 5.226** The frequency 156.525 MHz is the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service using digital selective calling (DSC). The conditions for the use of this frequency and the band 156.4875-156.5625 MHz are contained in Articles **31** and **52**, and in Appendix **18**.
- The frequency 156.8 MHz is the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service. The conditions for the use of this frequency and the band 156.7625-156.8375 MHz are contained in Article **31** and Appendix **18**.
- In the bands 156-156.4875 MHz, 156.5625-156.7625 MHz, 156.8375-157.45 MHz, 160.6-160.975 MHz and 161.475-162.05 MHz, each administration shall give priority to the maritime mobile service on only such frequencies as are assigned to stations of the maritime mobile service by the administration (see Articles **31** and **52**, and Appendix **18**).
- Any use of frequencies in these bands by stations of other services to which they are allocated should be avoided in areas where such use might cause harmful interference to the maritime mobile VHF radiocommunication service.
- However, the frequencies 156.8 MHz and 156.525 MHz and the frequency bands in which priority is given to the maritime mobile service may be used for radiocommunications on inland waterways subject to agreement between interested and affected administrations and taking into account current frequency usage and existing agreements. (WRC-07)
- 5.227** *Additional allocation:* the bands 156.4875-156.5125 MHz and 156.5375-156.5625 MHz are also allocated to the fixed and land mobile services on a primary basis. The use of these bands by the fixed and land mobile services shall not cause harmful interference to nor claim protection from the maritime mobile VHF radiocommunication service. (WRC-07)
- 5.227A** (SUP - WRC-12)
- 5.228** The use of the frequency bands 156.7625-156.7875 MHz and 156.8125-156.8375 MHz by the mobile-satellite service (Earth-to-space) is limited to the reception of automatic identification system (AIS) emissions of long-range AIS broadcast messages (Message 27, see the most recent version of Recommendation ITU-R M.1371). With the exception of AIS emissions, emissions in these frequency bands by systems operating in the maritime mobile service for communications shall not exceed 1 W. (WRC-12)
- 5.228A** The frequency bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz may be used by aircraft stations for the purpose of search and rescue operations and other safety-related communications. (WRC-12)
- 5.228AA** The use of the frequency bands 161.9375-161.9625 MHz and 161.9875-162.0125 MHz by the maritime mobile-satellite (Earth-to-space) service is limited to the systems which operate in accordance with Appendix **18**. (WRC-15)
- 5.228AB** The use of the frequency bands 157.1875-157.3375 MHz and 161.7875-161.9375 MHz by the maritime mobile-satellite service (Earth-to-space) is limited to non-geostationary-satellite systems operating in accordance with Appendix **18**. (WRC-19)
- 5.228AC** The use of the frequency bands 157.1875-157.3375 MHz and 161.7875-161.9375 MHz by the maritime mobile-satellite service (space-to-Earth) is limited to non-geostationary-satellite systems operating in accordance with Appendix **18**. Such use is subject to agreement obtained under No. **9.21** with respect to the terrestrial services in Azerbaijan, Belarus, China, Korea (Rep. of), Cuba, the Russian Federation, the Syrian Arab Republic, the Dem. People's Rep. of Korea, South Africa and Viet Nam. (WRC-19)
- 5.228B** The use of the frequency bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz by the fixed and land mobile services shall not cause harmful interference to, or claim protection from, the maritime mobile service. (WRC-12)

- 5.228C** The use of the frequency bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz by the maritime mobile service and the mobile-satellite (Earth-to-space) service is limited to the automatic identification system (AIS), including AIS search and rescue transmitters (AIS-SART) and satellite emergency position indicating radio beacons with AIS (EPIRB-AIS). The use of these frequency bands by the aeronautical mobile (OR) service is limited to AIS emissions from search and rescue aircraft operations. The AIS, AIS-SART and EPIRB-AIS operations in these frequency bands shall not constrain the development and use of the fixed and mobile services operating in the adjacent frequency bands. (WRC-23)
- 5.228D** The frequency bands 161.9625-161.9875 MHz (AIS 1) and 162.0125-162.0375 MHz (AIS 2) may continue to be used by the fixed and mobile services on a primary basis until 1 January 2025, at which time this allocation shall no longer be valid. Administrations are encouraged to make all practicable efforts to discontinue the use of these bands by the fixed and mobile services prior to the transition date. During this transition period, the maritime mobile service in these frequency bands has priority over the fixed, land mobile and aeronautical mobile services. (WRC-12)
- 5.228E** The use of the automatic identification system in the frequency bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz by the aeronautical mobile (OR) service is limited to aircraft stations for the purpose of search and rescue operations and other safety-related communications. (WRC-12)
- 5.228F** The use of the frequency bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz by the mobile-satellite service (Earth-to-space) is limited to the reception of automatic identification system emissions from stations operating in the maritime mobile service. (WRC-12)
- 5.229** (SUP-WRC-23)
- 5.230** *Additional allocation:* in China, the band 163-167 MHz is also allocated to the space operation service (space-to-Earth) on a primary basis, subject to agreement obtained under No. **9.21**.
- 5.231** *Additional allocation:* in Afghanistan and China, the band 167-174 MHz is also allocated to the broadcasting service on a primary basis. The introduction of the broadcasting service into this band shall be subject to agreement with the neighbouring countries in Region 3 whose services are likely to be affected. (WRC-12)
- 5.232** (SUP - WRC-15)
- 5.233** *Additional allocation:* in China, the band 174-184 MHz is also allocated to the space research (space-to-Earth) and the space operation (space-to-Earth) services on a primary basis, subject to agreement obtained under No. **9.21**. These services shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations.
- 5.234** (SUP - WRC-15)
- 5.235** *Additional allocation:* in Germany, Austria, Belgium, Denmark, Spain, Finland, France, Israel, Italy, Liechtenstein, Malta, Monaco, Norway, the Netherlands, the United Kingdom, Sweden and Switzerland, the band 174-223 MHz is also allocated to the land mobile service on a primary basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, broadcasting stations, existing or planned, in countries other than those listed in this footnote.

- 5.236** Not used.
- 5.237** *Additional allocation:* in Congo (Rep. of the), Egypt, Eritrea, Ethiopia, Gambia, Guinea, Libya, Mali, Sierra Leone, Somalia and Chad, the band 174-223 MHz is also allocated to the fixed and mobile services on a secondary basis. (WRC-12)
- 5.238** *Additional allocation:* in Bangladesh, India, Pakistan and the Philippines, the band 200-216 MHz is also allocated to the aeronautical radionavigation service on a primary basis.
- 5.239** Not used.
- 5.240** *Additional allocation:* in China and India, the band 216-223 MHz is also allocated to the aeronautical radionavigation service on a primary basis and to the radiolocation service on a secondary basis.
- 5.241** In Region 2, no new stations in the radiolocation service may be authorized in the band 216-225 MHz. Stations authorized prior to 1 January 1990 may continue to operate on a secondary basis.
- 5.242** *Additional allocation:* in Canada and Mexico, the frequency band 216-220 MHz is also allocated to the land mobile service on a primary basis. (WRC-19)
- 5.243** *Additional allocation:* in Somalia, the band 216-225 MHz is also allocated to the aeronautical radionavigation service on a primary basis, subject to not causing harmful interference to existing or planned broadcasting services in other countries.
- 5.244** (SUP - WRC-97)
- 5.245** *Additional allocation:* in Japan, the band 222-223 MHz is also allocated to the aeronautical radionavigation service on a primary basis and to the radiolocation service on a secondary basis.
- 5.246** *Alternative allocation:* in Spain, France, Israel and Monaco, the band 223-230 MHz is allocated to the broadcasting and land mobile services on a primary basis (see No. **5.33**) on the basis that, in the preparation of frequency plans, the broadcasting service shall have prior choice of frequencies; and allocated to the fixed and mobile, except land mobile, services on a secondary basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations in Morocco and Algeria.
- 5.247** *Additional allocation:* in Saudi Arabia, Bahrain, the United Arab Emirates, Jordan, **Oman**, Qatar and Syrian Arab Republic, the band 223-235 MHz is also allocated to the aeronautical radionavigation service on a primary basis.
- 5.248** Not used.
- 5.249** Not used.
- 5.250** *Additional allocation:* in China, the band 225-235 MHz is also allocated to the radio astronomy service on a secondary basis.
- 5.251** *Additional allocation:* in Nigeria, the band 230-235 MHz is also allocated to the aeronautical radionavigation service on a primary basis, subject to agreement obtained under No. **9.21**.

- 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)
- 5.253** Not used.
- 5.254** The bands 235-322 MHz and 335.4-399.9 MHz may be used by the mobile-satellite service, subject to agreement obtained under No. **9.21**, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table of Frequency Allocations except for the additional allocation made in footnote No. **5.256A**. (WRC-03)
- 5.255** The bands 312-315 MHz (Earth-to-space) and 387-390 MHz (space-to-Earth) in the mobile-satellite service may also be used by non-geostationary-satellite systems. Such use is subject to coordination under No. **9.11A**.
- 5.256** The frequency 243 MHz is the frequency in this band for use by survival craft stations and equipment used for survival purposes. (WRC-07)
- 5.256A** *Additional allocation:* in China, the Russian Federation and Kazakhstan, the frequency band 258-261 MHz is also allocated to the space research service (Earth-to-space) and space operation service (Earth-to-space) on a primary basis. Stations in the space research service (Earth-to-space) and space operation service (Earth-to-space) shall not cause harmful interference to, or claim protection from, or constrain the use and development of, the mobile service systems and mobile-satellite service systems operating in the frequency band. Stations in space research service (Earth-to-space) and space operation service (Earth-to-space) shall not constrain the future development of fixed service systems of other countries. (WRC-15)
- 5.257** The band 267-272 MHz may be used by administrations for space telemetry in their countries on a primary basis, subject to agreement obtained under No. **9.21**.
- 5.258** The use of the band 328.6-335.4 MHz by the aeronautical radionavigation service is limited to Instrument Landing Systems (glide path).
- 5.259** *Additional allocation:* in Egypt and the Syrian Arab Republic, the band 328.6-335.4 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. **9.21**. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedure invoked under No. **9.21**. (WRC-12)
- 5.260** (SUP - WRC-15)
- 5.260B** In the frequency band 400.02-400.05 MHz, the provisions of No. **5.260A** are not applicable for telecommand uplinks within the mobile-satellite service. (WRC-19)
- 5.261** Emissions shall be confined in a band of ± 25 kHz about the standard frequency 400.1 MHz.

- 5.262** *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Botswana, Colombia, Cuba, Egypt, the United Arab Emirates, Ecuador, the Russian Federation, Georgia, Hungary, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kazakhstan, Kuwait, Liberia, Malaysia, Moldova, **Oman**, Uzbekistan, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, Kyrgyzstan, Singapore, Somalia, Tajikistan, Chad, Turkmenistan and Ukraine, the band 400.05-401 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-12)
- 5.263** The band 400.15-401 MHz is also allocated to the space research service in the space-to-space direction for communications with manned space vehicles. In this application, the space research service will not be regarded as a safety service.
- 5.264** The use of the band 400.15-401 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. The power flux-density limit indicated in Annex 1 of Appendix **5** shall apply until such time as a competent world radiocommunication conference revises it.
- 5.264 A**
- In the frequency band 401-403 MHz, the maximum e.i.r.p. of any emission of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 22 dBW in any 4 kHz band for geostationary-satellite systems and non-geostationary-satellite systems with an orbit of apogee equal or greater than 35 786 km.
- The maximum e.i.r.p. of any emission of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 7 dBW in any 4 kHz band for non-geostationary-satellite systems with an orbit of apogee lower than 35 786 km.
- The maximum e.i.r.p. of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 22 dBW for geostationary-satellite systems and non-geostationary-satellite systems with an orbit of apogee equal or greater than 35 786 km in the whole 401-403 MHz frequency band. The maximum e.i.r.p. of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 7 dBW for non-geostationary-satellite systems with an orbit of apogee lower than 35 786 km in the whole 401-403 MHz frequency band.
- Until 22 November 2029, these limits shall not apply to satellite systems for which complete notification information has been received by the Radiocommunication Bureau by 22 November 2019 and that have been brought into use by that date. After 22 November 2029, these limits shall apply to all systems within the meteorological-satellite service and the Earth exploration-satellite service operating in this frequency band. (WRC-19)
- 5.264B** Non-geostationary-satellite systems in the meteorological-satellite service and the Earth exploration-satellite service for which complete notification information has been received by the Radiocommunication Bureau no later than 28 April 2007 are exempt from provisions of No. **5.264A** and may continue to operate in the frequency band 401.898-402.522 MHz on a primary basis without exceeding a maximum e.i.r.p. level of 12 dBW. (WRC-23)
- 5.265** In the frequency band 403-410 MHz, Resolution **205 (Rev.WRC-19)** applies. (WRC-19)
- 5.266** The use of the band 406-406.1 MHz by the mobile-satellite service is limited to low power satellite emergency position-indicating radiobeacons (see also Article **31**). (WRC-07)
- 5.267** Any emission capable of causing harmful interference to the authorized uses of the band 406-406.1 MHz is prohibited.

- 5.268** Use of the frequency band 410-420 MHz by the space research service is limited to space-to-space communication links with an orbiting, manned space vehicle. The power flux-density at the surface of the Earth produced by emissions from transmitting stations of the space research service (space-to-space) in the frequency band 410-420 MHz shall not exceed $-153 \text{ dB(W/m}^2\text{)}$ for $0^\circ \leq \delta \leq 5^\circ$, $-153 + 0.077 (\delta - 5) \text{ dB(W/m}^2\text{)}$ for $5^\circ \leq \delta \leq 70^\circ$ and $-148 \text{ dB(W/m}^2\text{)}$ for $70^\circ \leq \delta \leq 90^\circ$, where δ is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. In this frequency band, stations of the space research service (space-to-space) shall not claim protection from, nor constrain the use and development of, stations of the fixed and mobile services. No. **4.10** does not apply. (WRC-15)
- 5.269** *Different category of service:* in Australia, Brazil, the United States, India, Japan and the United Kingdom, the allocation of the frequency bands 420-430 MHz and 440-450 MHz to the radiolocation service is on a primary basis (see No. **5.33**). (WRC-23)
- 5.270** *Additional allocation:* in Australia, the United States, Jamaica and the Philippines, the bands 420-430 MHz and 440-450 MHz are also allocated to the amateur service on a secondary basis.
- 5.271** *Additional allocation:* in Belarus, China, India, Kyrgyzstan and Turkmenistan, the band 420-460 MHz is also allocated to the aeronautical radionavigation service (radio altimeters) on a secondary basis. (WRC-07)
- 5.272** (SUP - WRC-12)
- 5.273** (SUP - WRC-12)
- 5.274** *Alternative allocation:* in Denmark, Norway, Sweden and Chad, the bands 430-432 MHz and 438-440 MHz are allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-12)
- 5.275** *Additional allocation:* in Croatia, Estonia, Finland, Libya, North Macedonia, Montenegro and Serbia, the frequency bands 430-432 MHz and 438-440 MHz are also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)
- 5.276** *Additional allocation:* in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burkina Faso, Djibouti, Egypt, the United Arab Emirates, Ecuador, Eritrea, Ethiopia, Greece, Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Italy, Jordan, Kenya, Kuwait, Libya, Malaysia, Niger, Nigeria, **Oman**, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, Türkiye, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, Switzerland, Thailand, Togo and Yemen, the frequency band 430-440 MHz is also allocated to the fixed service on a primary basis and the frequency bands 430-435 MHz and 438-440 MHz are also allocated, except in Ecuador, to the mobile, except aeronautical mobile, service on a primary basis. (WRC-23)
- 5.277** *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, Cameroon, Congo (Rep. of the), Djibouti, the Russian Federation, Georgia, Hungary, Israel, Kazakhstan, Mali, Uzbekistan, Poland, the Dem. Rep. of the Congo, Kyrgyzstan, Slovakia, Romania, Rwanda, Tajikistan, Chad, Turkmenistan and Ukraine, the frequency band 430-440 MHz is also allocated to the fixed service on a primary basis. (WRC-19)
- 5.278** *Different category of service:* in Argentina, Brazil, Colombia, Costa Rica, Cuba, Guyana, Honduras, Panama, Paraguay, Uruguay and Venezuela, the allocation of the frequency band 430-440 MHz to the amateur service is on a primary basis (see No. **5.33**). (WRC-19)

- 5.279** *Additional allocation:* in Mexico, the frequency bands 430-435 MHz and 438-440 MHz are also allocated on a primary basis to the mobile, except aeronautical mobile, service, and on a secondary basis to the fixed service, subject to agreement obtained under No. **9.21**. (WRC-19)
- 5.279A** The use of the frequency band 432-438 MHz by sensors in the Earth exploration-satellite service (active) shall be in accordance with Recommendation ITU-R RS.1260-2. Additionally, the Earth exploration-satellite service (active) in the frequency band 432-438 MHz shall not cause harmful interference to the aeronautical radionavigation service in China. The provisions of this footnote in no way diminish the obligation of the Earth exploration-satellite service (active) to operate as a secondary service in accordance with Nos. **5.29** and **5.30**. (WRC-19)
- 5.280** In Germany, Austria, Bosnia and Herzegovina, Croatia, Liechtenstein, North Macedonia, Montenegro, Portugal, Serbia, Slovenia and Switzerland, the frequency band 433.05-434.79 MHz (centre frequency 433.92 MHz) is designated for industrial, scientific and medical (ISM) applications. Radiocommunication services of these countries operating within this frequency band must accept harmful interference which may be caused by these applications. ISM equipment operating in this frequency band is subject to the provisions of No. **15.13**. (WRC-19)
- 5.281** *Additional allocation:* in the French overseas departments and communities in Region 2 and India, the band 433.75-434.25 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis. In France and in Brazil, the band is allocated to the same service on a secondary basis.
- 5.282** In the bands 435-438 MHz, 1 260-1 270 MHz, 2 400-2 450 MHz, 3 400-3 410 MHz (in Regions 2 and 3 only) and 5 650-5 670 MHz, the amateur-satellite service may operate subject to not causing harmful interference to other services operating in accordance with the Table (see No. **5.43**). Administrations authorizing such use shall ensure that any harmful interference caused by emissions from a station in the amateur-satellite service is immediately eliminated in accordance with the provisions of No. **25.11**. The use of the bands 1 260-1 270 MHz and 5 650-5 670 MHz by the amateur-satellite service is limited to the Earth-to-space direction.
- 5.283** *Additional allocation:* in Austria, the band 438-440 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.284** *Additional allocation:* in Canada, the band 440-450 MHz is also allocated to the amateur service on a secondary basis.
- 5.285** *Different category of service:* in Canada, the allocation of the band 440-450 MHz to the radiolocation service is on a primary basis (see No. **5.33**).
- 5.286** The band 449.75-450.25 MHz may be used for the space operation service (Earth-to-space) and the space research service (Earth-to-space), subject to agreement obtained under No. **9.21**.
- 5.286A** The use of the bands 454-456 MHz and 459-460 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. (WRC-97)
- 5.286AA** The frequency band 450-470 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) - see Resolution **224**

(Rev.WRC-19)*. This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-19)

- 5.286B** The use of the band 454-455 MHz in the countries listed in No. **5.286D**, 455-456 MHz and 459-460 MHz in Region 2, and 454-456 MHz and 459-460 MHz in the countries listed in No. **5.286E**, by stations in the mobile-satellite service, 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. (WRC-97)
- 5.286C** The use of the band 454-455 MHz in the countries listed in No. **5.286D**, 455-456 MHz and 459-460 MHz in Region 2, and 454-456 MHz and 459-460 MHz in the countries listed in No. **5.286E**, by stations in the mobile-satellite service, shall not constrain the development and use of the fixed and mobile services operating in accordance with the Table of Frequency Allocations. (WRC-97)
- 5.286D** *Additional allocation:* in Canada, the United States and Panama, the band 454-455 MHz is also allocated to the mobile-satellite service (Earth-to-space) on a primary basis. (WRC-07)
- 5.286E** *Additional allocation:* in Cabo Verde, Nepal and Nigeria, the bands 454-456 MHz and 459-460 MHz are also allocated to the mobile-satellite (Earth-to-space) service on a primary basis. (WRC-23)
- 5.287** Use of the frequency bands 457.5125-457.5875 MHz and 467.5125-467.5875 MHz by the maritime mobile service is limited to on-board communication stations. The characteristics of the equipment and the channelling arrangement shall be in accordance with Recommendation ITU-R M.1174-4. The use of these frequency bands in territorial waters is subject to the national regulations of the administration concerned. (WRC-19)
- 5.288** In the territorial waters of the United States and the Philippines, the preferred frequencies for use by on-board communication stations shall be 457.525 MHz, 457.550 MHz, 457.575 MHz and 457.600 MHz paired, respectively, with 467.750 MHz, 467.775 MHz, 467.800 MHz and 467.825 MHz. The characteristics of the equipment used shall conform to those specified in Recommendation ITU-R M.1174-4. (WRC-19)
- 5.289** Earth exploration-satellite service applications, other than the meteorological-satellite service, may also be used in the bands 460-470 MHz and 1 690-1 710 MHz for space-to-Earth transmissions subject to not causing harmful interference to stations operating in accordance with the Table.
- 5.290** *Different category of service:* in Afghanistan, Azerbaijan, Belarus, China, the Russian Federation, Japan, Kyrgyzstan, Tajikistan and Turkmenistan, the allocation of the band 460-470 MHz to the meteorological-satellite service (space-to-Earth) is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**. (WRC-12)
- 5.291** *Additional allocation:* in China, the band 470-485 MHz is also allocated to the space research (space-to-Earth) and the space operation (space-to-Earth) services on a primary basis subject to agreement obtained under No. **9.21** and subject to not causing harmful interference to existing and planned broadcasting stations.

* *Note by the Secretariat:* This Resolution was revised by WRC-23.

- 5.291A** *Additional allocation:* in Germany, Austria, Denmark, Estonia, Liechtenstein, Serbia and Switzerland, the frequency band 470-494 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with Resolution **217 (Rev.WRC-23)**. (WRC-23)
- 5.292** *Different category of service:* in Argentina, Uruguay and Venezuela, the allocation of the frequency band 470-512 MHz to the mobile service is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**. (WRC-15)
- 5.293** *Different category of service:* in Canada, Chile, Cuba, the United States, Guyana and Panama, the allocation of the frequency bands 470-512 MHz and 614-806 MHz to the fixed service is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**. In the Bahamas, Barbados, Canada, Chile, Cuba, the United States, Guyana, Jamaica, Mexico and Panama, the allocation of the frequency bands 470-512 MHz and 614-698 MHz to the mobile service is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**. In Argentina and Ecuador, the allocation of the frequency band 470-512 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**. (WRC-23)
- 5.294** *Additional allocation:* in Saudi Arabia, Cameroon, Côte d'Ivoire, Egypt, Ethiopia, Israel, Libya, Palestine*, the Syrian Arab Republic, Chad and Yemen, the frequency band 470-582 MHz is also allocated to the fixed service on a secondary basis. (WRC-23)
- 5.295** In the Bahamas, Barbados, Canada, the United States and Mexico, the frequency band 470-608 MHz, or portions thereof, is identified for International Mobile Telecommunications (IMT) – see Resolution **224 (Rev.WRC-19)****. This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. Mobile service stations of the IMT system within the frequency band are subject to agreement obtained under No. **9.21** and shall not cause harmful interference to, or claim protection from, the broadcasting service of neighbouring countries. Nos. **5.43** and **5.43A** apply. (WRC-19)
- 5.295A** *Additional allocation:* in Albania, Germany, Andorra, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Cyprus, Vatican, Croatia, Denmark, Estonia, Finland, France, Georgia, Greece, Hungary, Ireland, Iceland, Latvia, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Malta, Moldova, Monaco, Montenegro, Norway, Uzbekistan, Kingdom of the Netherlands, Poland, Portugal, Türkiye, Slovakia, the Czech Republic, Romania, the United Kingdom, San Marino, Serbia, Slovenia, Sweden, Switzerland and Ukraine, the frequency band 470-694 MHz is allocated to the mobile, except aeronautical mobile, service on a secondary basis, subject to agreement obtained under No. **9.21**. For the protection of the broadcasting service, stations in the mobile service shall not create a field strength for more than 1% of the time at the highest of the clutter height or 10 m above ground level at the border of the territory of any other administration that exceeds the field strength value as calculated using § 4.1.3.2 of Annex 2 to the GE06 Agreement with regard to allowance for multiple interference, Table A.1.10 and the methodology given in the GE06 Agreement. These limits may be exceeded on the territory of any country whose administration has so agreed. This allocation shall in no way adversely affect the broadcast development or undermine new entries of the broadcasting service to the GE06 Plan. (WRC-23)

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

** *Note by the Secretariat:* This Resolution was revised by WRC-23.

- 5.296** *Additional allocation:* in Albania, Algeria, 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, Gambia, 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, Palestine*, the Netherlands, Poland, Portugal, Qatar, the Syrian Arab Republic, Türkiye, Slovakia, the Czech Republic, Romania, the United Kingdom, Rwanda, San Marino, Senegal, Serbia, Sudan, South Africa, Sweden, Switzerland, Tanzania, Chad, Togo, Tunisia, 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-23)
- 5.296A** In Micronesia, the Solomon Islands, Tuvalu and Vanuatu, the frequency band 470-698 MHz, or portions thereof, and in Bangladesh, Lao P.D.R., Maldives, New Zealand and Viet Nam, the frequency band 610-698 MHz, or portions thereof, are identified for use by these administrations wishing to implement International Mobile Telecommunications (IMT) – see Resolution **224 (Rev.WRC-23)**. This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. The mobile allocation in this frequency band shall not be used for IMT systems unless subject to agreement obtained under No. **9.21** and shall not cause harmful interference to, or claim protection from, the broadcasting service of neighbouring countries. Nos. **5.43** and **5.43A** apply. (WRC-23)
- 5.297** *Additional allocation:* in Canada, Costa Rica, Cuba, El Salvador, the United States, Guatemala, Guyana and Jamaica, the frequency band 512-608 MHz is also allocated to the fixed and mobile services on a primary basis, subject to agreement obtained under No. **9.21**. In the Bahamas, Barbados and Mexico, the frequency band 512-608 MHz is also allocated to the mobile service on a primary basis, subject to agreement obtained under No. **9.21**. In Mexico, the frequency band 512-608 MHz is also allocated on a secondary basis to the fixed service (see No. **5.32**). (WRC-19)
- 5.298** *Additional allocation:* in India, the band 549.75-550.25 MHz is also allocated to the space operation service (space-to-Earth) on a secondary basis.
- 5.299** Not used.
- 5.300** *Additional allocation:* in Saudi Arabia, Cameroon, Egypt, the United Arab Emirates, Iraq, Israel, Jordan, Libya, **Oman**, Palestine*, Qatar, the Syrian Arab Republic and Sudan, the frequency band 582-790 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis. (WRC-23)
- 5.301** Not used.
- 5.302** (SUP - WRC-12)

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

- 5.303** Not used.
- 5.304** *Additional allocation:* in the African Broadcasting Area (see Nos. **5.10** to **5.13**), the band 606-614 MHz is also allocated to the radio astronomy service on a primary basis.
- 5.305** *Additional allocation:* in China, the band 606-614 MHz is also allocated to the radio astronomy service on a primary basis.
- 5.306** *Additional allocation:* in Region 1, except in the African Broadcasting Area (see Nos. **5.10** to **5.13**), and in Region 3, except in China and India, the band 608-614 MHz is also allocated to the radio astronomy service on a secondary basis. (WRC-23)
- 5.307** *Additional allocation:* in India, the band 608-614 MHz is also allocated to the radio astronomy service on a primary basis.
- 5.307A** *Additional allocation:* in Saudi Arabia, Bahrain, Egypt, the United Arab Emirates, Iraq, Jordan, Kuwait, **Oman**, Palestine*, Qatar and the Syrian Arab Republic, the frequency band 614-694 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis and identified for International Mobile Telecommunications (IMT) – see Resolution **224 (Rev.WRC-23)** subject to the agreement obtained under No. **9.21**. Stations in the mobile service shall not create a field strength for more than 1% of the time at the highest of the clutter height or 10 m above ground level at the border of the territory of any other administration that exceeds the field strength value as calculated using § 4.1.3.2 of Annex 2 to the GE06 Agreement with regard to allowance for multiple interference, Table A.1.10 and the methodology given in the GE06 Agreement. Stations in the mobile service of the countries listed in this footnote shall not cause harmful interference to, or claim protection from the existing and future broadcasting stations of the neighbouring countries operating in accordance with the GE06 Plan. This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations and shall in no way adversely affect the development of the existing and future broadcasting service in accordance with the GE06 Agreement. For countries party to the GE06 Agreement, the use of stations in the mobile service is also subject to the successful application of the procedures of that Agreement. This allocation does not establish priority in the Radio Regulations and shall allow the implementation and development of the broadcasting service in accordance with the GE06 Agreement. The countries listed in this footnote and located in the African Broadcasting Area should ensure protection of the radio astronomy service within the frequency band 606-614 MHz, as allocated in No. **5.304**, consistent with the most recent version of Recommendation ITU-R RA.769. The countries listed in this footnote, which are neighbouring to the countries listed in No. **5.312**, should ensure the protection of the aeronautical radionavigation service in the frequency band 645-862 MHz. (WRC-23)
- 5.307B** *Additional allocation:* in Gambia, Mauritania, Namibia, Nigeria, Senegal, Somalia, Tanzania and Chad, the frequency band 614-694 MHz is allocated to the mobile service on a secondary basis. For the protection of the broadcasting service, stations in the mobile service shall not create a field strength for more than 1% of the time at the highest of the clutter height or 10 m above ground level at the border of the territory of any other administration that exceeds the field strength value as calculated using § 4.1.3.2 of Annex 2 to the GE06 Agreement with regard to allowance for multiple interference, Table A.1.10 and the methodology given in the GE06 Agreement. This allocation shall in no way adversely affect the broadcast development or undermine new

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entries of the broadcasting service to the GE06 Plan. Additional measures shall be used by administrations implementing stations in the mobile services to protect stations in the broadcasting service of neighbouring administrations such as a distance limitation from the border of a neighbouring country. (WRC-23)

- 5.308** *Different category of service:* in Belize, Colombia, El Salvador and Guatemala, the frequency band 614-698 MHz is allocated to the mobile service on a primary basis. Stations of the mobile service within the frequency band are subject to agreement obtained under No. **9.21**. (WRC-23)
- 5.308A** In the Bahamas, Barbados, Belize, Canada, Colombia, El Salvador, the United States, Guatemala, Jamaica and Mexico, the frequency band 614-698 MHz, or portions thereof, is identified for International Mobile Telecommunications (IMT) – see Resolution **224 (Rev.WRC-23)**. This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. Mobile service stations of the IMT system within the frequency band are subject to agreement obtained under No. **9.21** and shall not cause harmful interference to, or claim protection from, the broadcasting service of neighbouring countries. Nos. **5.43** and **5.43A** apply. (WRC-23)
- 5.309** *Different category of service:* in El Salvador, the allocation of the frequency band 614-806 MHz to the fixed service is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**. (WRC-15)
- 5.310** (SUP - WRC-97)
- 5.311** (SUP - WRC-07)
- 5.311A** (SUP - WRC-19)
- 5.312** *Additional allocation:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the frequency band 645-862 MHz, and in Bulgaria the frequency bands 726-753 MHz, 778-811 MHz and 822-852 MHz, are also allocated to the aeronautical radionavigation service on a primary basis. (WRC-23)
- 5.312A** In Region 1, the use of the frequency band 694-790 MHz by the mobile, except aeronautical mobile, service is subject to the provisions of Resolution **760 (Rev.WRC-23)**. See also Resolution **224 (Rev.WRC-23)**. (WRC-23)
- 5.312B** The frequency band 698-960 MHz, or portions thereof, in Region 2, and the frequency band 694-960 MHz, or portions thereof, in Region 1, are identified for use by high-altitude platform stations as International Mobile Telecommunications (IMT) base stations (HIBS). This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. Resolution **213 (WRC-23)** shall apply. HIBS shall not claim protection from existing primary services. No. **5.43A** does not apply, see *resolves* 2 of Resolution **213 (WRC-23)**. Such use of HIBS in the frequency bands 694-728 MHz, 830-835 MHz and 805.3-806.9 MHz is limited to reception by HIBS. (WRC-23)
- 5.313** (SUP - WRC-97)

- 5.313A** The frequency band, or portions of the frequency band 698-790 MHz, in Australia, Bangladesh, Brunei Darussalam, Cambodia, China, Korea (Rep. of), Fiji, India, Indonesia, Japan, Kiribati, Lao P.D.R., Malaysia, Myanmar (Union of), New Zealand, Pakistan, Papua New Guinea, the Philippines, the Dem. People’s Rep. of Korea, Solomon Islands, Samoa, Singapore, Thailand, Tonga, Tuvalu, Vanuatu and Viet Nam, are identified for use by these administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-19)
- 5.313B** (SUP - WRC-15)
- 5.314** (SUP - WRC-15)
- 5.314A** The frequency band 698-960 MHz, or portions thereof, in Australia, Maldives, Micronesia, Papua New Guinea, Tonga and Vanuatu, and the frequency bands 703-733 MHz, 758-788 MHz, 890-915 MHz and 935-960 MHz, or portions thereof, in China, India, Indonesia, Japan, Korea (Rep. of), Malaysia, the Philippines and Thailand are identified for use by high-altitude platform stations as International Mobile Telecommunications (IMT) base stations (HIBS). This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. Resolution **213 (WRC-23)** shall apply. HIBS shall not claim protection from existing primary services. No. **5.43A** does not apply, see *resolves* 2 of Resolution **213 (WRC-23)**. Such use of HIBS in the frequency bands 698-728 MHz and 830-835 MHz is limited to reception by HIBS. (WRC-23)
- 5.315** (SUP - WRC-15)
- 5.316** (SUP - WRC-15)
- 5.316A** (SUP - WRC-15)
- 5.316B** In Region 1, the allocation to the mobile, except aeronautical mobile, service in the frequency band 790-862 MHz is subject to agreement obtained under No. **9.21** with respect to the aeronautical radionavigation service in countries mentioned in No. **5.312**. For countries party to the GE06 Agreement, the use of stations of the mobile service is also subject to the successful application of the procedures of that Agreement. Resolutions **224 (Rev.WRC-23)** and **749 (Rev.WRC-23)** shall apply, as appropriate. (WRC-23)
- 5.317** *Additional allocation:* in Region 2 (except Brazil, the United States and Mexico), the frequency band 806-890 MHz is also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. **9.21**. The use of this service is intended for operation within national boundaries. (WRC-15)
- 5.317A** The parts of the frequency band 698-960 MHz in Region 2 and the frequency bands 694-790 MHz in Region 1 and 790-960 MHz in Regions 1 and 3 which are allocated to the mobile service on a primary basis are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) – see Resolutions **224 (Rev.WRC-23)**, **760 (Rev.WRC-23)** and **749 (Rev.WRC-23)**, where applicable. This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-23)

- 5.318** *Additional allocation:* in Canada, the United States and Mexico, the bands 849-851 MHz and 894-896 MHz are also allocated to the aeronautical mobile service on a primary basis, for public correspondence with aircraft. The use of the band 849-851 MHz is limited to transmissions from aeronautical stations and the use of the band 894-896 MHz is limited to transmissions from aircraft stations.
- 5.319** *Additional allocation:* in Belarus, the Russian Federation and Ukraine, the bands 806-840 MHz (Earth-to-space) and 856-890 MHz (space-to-Earth) are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service. The use of these bands by this service shall not cause harmful interference to, or claim protection from, services in other countries operating in accordance with the Table of Frequency Allocations and is subject to special agreements between the administrations concerned.
- 5.320** *Additional allocation:* in Region 3, the bands 806-890 MHz and 942-960 MHz are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service on a primary basis, subject to agreement obtained under No. **9.21**. The use of this service is limited to operation within national boundaries. In seeking such agreement, appropriate protection shall be afforded to services operating in accordance with the Table, to ensure that no harmful interference is caused to such services.
- 5.321** (SUP - WRC-07)
- 5.322** In Region 1, in the frequency band 862-960 MHz, stations of the broadcasting service shall be operated only in the African Broadcasting Area (see Nos. **5.10** to **5.13**) excluding Algeria, Burundi, Djibouti, Egypt, Spain, Lesotho, Libya, Morocco, Malawi, Namibia, Nigeria, South Africa, Tanzania, Zimbabwe and Zambia, subject to agreement obtained under No. **9.21**. (WRC-23)
- 5.323** *Additional allocation:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the frequency band 862-960 MHz, in Bulgaria the frequency bands 862-880 MHz and 915-925 MHz, and in Romania the frequency bands 862-880 MHz and 915-925 MHz, are also allocated to the aeronautical radionavigation service on a primary basis. Such use is subject to agreement obtained under No. **9.21** with administrations concerned and limited to ground-based radiobeacons in operation on 27 October 1997 until the end of their lifetime. (WRC-19)
- 5.324** Not used.
- 5.325** *Different category of service:* in the United States, the allocation of the band 890-942 MHz to the radiolocation service is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**.
- 5.325A** *Different category of service:* in Argentina, Brazil, Costa Rica, Cuba, Dominican Republic, El Salvador, Ecuador, the French overseas departments and communities in Region 2, Guatemala, Paraguay, Uruguay and Venezuela, the frequency band 902-928 MHz is allocated to the land mobile service on a primary basis. In Mexico, the frequency band 902-928 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis. In Colombia, the frequency band 902-915 MHz is allocated to the land mobile service on a primary basis. (WRC-23)
- 5.326** *Different category of service:* in Chile, the band 903-905 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis, subject to agreement obtained under No. **9.21**.

- 5.327** *Different category of service:* in Australia, the allocation of the band 915-928 MHz to the radiolocation service is on a primary basis (see No. **5.33**).
- 5.327A** The use of the frequency band 960-1 164 MHz by the aeronautical mobile (R) service is limited to systems that operate in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution **417 (Rev.WRC-15)**. (WRC-15)
- 5.328** The use of the band 960-1 215 MHz by the aeronautical radionavigation service is reserved on a worldwide basis for the operation and development of airborne electronic aids to air navigation and any directly associated ground-based facilities. (WRC-2000)
- 5.328A** Stations in the radionavigation-satellite service in the band 1 164-1 215 MHz shall operate in accordance with the provisions of Resolution **609 (Rev.WRC-07)** and shall not claim protection from stations in the aeronautical radionavigation service in the band 960-1 215 MHz. No. **5.43A** does not apply. The provisions of No. **21.18** shall apply. (WRC-07)
- 5.328AA** The frequency band 1 087.7-1 092.3 MHz is also allocated to the aeronautical mobile-satellite (R) service (Earth-to-space) on a primary basis, limited to the space station reception of Automatic Dependent Surveillance-Broadcast (ADS-B) emissions from aircraft transmitters that operate in accordance with recognized international aeronautical standards. Stations operating in the aeronautical mobile-satellite (R) service shall not claim protection from stations operating in the aeronautical radionavigation service. Resolution **425 (Rev.WRC-19)** shall apply. (WRC-19)
- 5.328B** The use of the bands 1 164-1 300 MHz, 1 559-1 610 MHz and 5 010-5 030 MHz by systems and networks in the radionavigation-satellite service for which complete coordination or notification information, as appropriate, is received by the Radiocommunication Bureau after 1 January 2005 is subject to the application of the provisions of Nos. **9.12**, **9.12A** and **9.13**. Resolution **610 (WRC-03)*** shall also apply; however, in the case of radionavigation-satellite service (space-to-space) networks and systems, Resolution **610 (WRC-03)*** shall only apply to transmitting space stations. In accordance with No. **5.329A**, for systems and networks in the radionavigation-satellite service (space-to-space) in the bands 1 215-1 300 MHz and 1 559-1 610 MHz, the provisions of Nos. **9.7**, **9.12**, **9.12A** and **9.13** shall only apply with respect to other systems and networks in the radionavigation-satellite service (space-to-space). (WRC-07)
- 5.329** Use of the radionavigation-satellite service in the frequency band 1 215-1 300 MHz shall be subject to the condition that no harmful interference is caused to, and no protection is claimed from, the radionavigation service authorized under No. **5.331**. Furthermore, the use of the radionavigation-satellite service in the frequency band 1 215-1 300 MHz shall be subject to the condition that no harmful interference is caused to the radiolocation service. No. **5.43** shall not apply in respect of the radiolocation service. Resolution **608 (Rev.WRC-19)** shall apply. (WRC-19)
- 5.329A** Use of systems in the radionavigation-satellite service (space-to-space) operating in the bands 1 215-1 300 MHz and 1 559-1 610 MHz is not intended to provide safety service applications, and shall not impose any additional constraints on radionavigation-satellite service (space-to-Earth) systems or on other services operating in accordance with the Table of Frequency Allocations. (WRC-07)

* *Note by the Secretariat:* This Resolution was revised by WRC-19.

- 5.330** *Additional allocation:* in Angola, Saudi Arabia, Bahrain, Bangladesh, Cameroon, China, Djibouti, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Nepal, **Oman**, Pakistan, Palestine*, the Philippines, Qatar, the Syrian Arab Republic, Somalia, Sudan, South Sudan, Chad, Togo and Yemen, the frequency band 1 215-1 300 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-23)
- 5.331** *Additional allocation:* in Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Belarus, Belgium, Benin, Bosnia and Herzegovina, Brazil, Burkina Faso, Burundi, Cameroon, China, Korea (Rep. of), Croatia, Denmark, Djibouti, Egypt, the United Arab Emirates, Estonia, the Russian Federation, Finland, France, Ghana, Greece, Guinea, Equatorial Guinea, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Israel, Jordan, Kenya, Kuwait, Lesotho, Latvia, Lebanon, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Madagascar, Mali, Mauritania, Montenegro, Nigeria, Norway, **Oman**, Pakistan, Palestine*, the Kingdom of the Netherlands, Poland, Portugal, Qatar, the Syrian Arab Republic, Türkiye, Dem. People's Rep. of Korea, Slovakia, the United Kingdom, Serbia, Slovenia, Somalia, Sudan, South Sudan, Sri Lanka, South Africa, Sweden, Switzerland, Thailand, Togo, Venezuela and Viet Nam, the frequency band 1 215-1 300 MHz is also allocated to the radionavigation service on a primary basis. In Canada and the United States, the frequency band 1 240-1 300 MHz is also allocated to the radionavigation service, and use of the radionavigation service shall be limited to the aeronautical radionavigation service. (WRC-23)
- 5.332** In the band 1 215-1 260 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service, the radionavigation-satellite service and other services allocated on a primary basis. (WRC-2000)
- 5.332A** Administrations authorizing operation of the amateur and amateur-satellite services in the frequency band 1 240-1 300 MHz, or portions thereof, shall ensure that the amateur and amateur-satellite services do not cause harmful interference to radionavigation-satellite service (space-to-Earth) receivers in accordance with No. **5.29** (see the most recent version of Recommendation ITU-R M.2164). The authorizing administration, upon receipt of a report of harmful interference caused by a station of the amateur or amateur-satellite services, shall take all necessary steps to rapidly eliminate such interference. (WRC-23)
- 5.333** (SUP - WRC-97)
- 5.334** *Additional allocation:* in Canada and the United States, the band 1 350-1 370 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-03)
- 5.335** In Canada and the United States in the band 1 240-1 300 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause interference to, claim protection from, or otherwise impose constraints on operation or development of the aeronautical radionavigation service. (WRC-97)
- 5.335A** In the band 1 260-1 300 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the

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

radiolocation service and other services allocated by footnotes on a primary basis. (WRC-2000)

- 5.336** Not used.
- 5.337** The use of the bands 1 300-1 350 MHz, 2 700-2 900 MHz and 9 000-9 200 MHz by the aeronautical radionavigation service is restricted to ground-based radars and to associated airborne transponders which transmit only on frequencies in these bands and only when actuated by radars operating in the same band.
- 5.337A** The use of the band 1 300-1 350 MHz by earth stations in the radionavigation-satellite service and by stations in the radiolocation service shall not cause harmful interference to, nor constrain the operation and development of, the aeronautical-radionavigation service. (WRC-2000)
- 5.338** In Kyrgyzstan, Slovakia and Turkmenistan, existing installations of the radionavigation service may continue to operate in the band 1 350-1 400 MHz. (WRC-12)
- 5.338A** In the frequency bands 1 350-1 400 MHz, 1 427-1 452 MHz, 22.55-23.55 GHz, 24.25-27.5 GHz, 30-31.3 GHz, 49.7-50.2 GHz, 50.4-50.9 GHz, 51.4-52.4 GHz, 52.4-52.6 GHz, 81-86 GHz and 92-94 GHz, Resolution **750 (Rev.WRC-19)** applies. (WRC-19)
- 5.339** The bands 1 370-1 400 MHz, 2 640-2 655 MHz, 4 950-4 990 MHz and 15.20-15.35 GHz are also allocated to the space research (passive) and Earth exploration-satellite (passive) services on a secondary basis.
- 5.339A** (SUP - WRC-07)
- 5.340** All emissions are prohibited in the following bands:
- | | |
|--|------------------|
| 1 400-1 427 MHz, | 100-102 GHz, |
| 2 690-2 700 MHz, except those provided for by No. 5.422, | 109.5-111.8 GHz, |
| 10.68-10.7 GHz, except those provided for by No. 5.483, | 114.25-116 GHz, |
| 15.35-15.4 GHz, except those provided for by No. 5.511, | 148.5-151.5 GHz, |
| 23.6-24 GHz, | 164-167 GHz, |
| 31.3-31.5 GHz, | 182-185 GHz, |
| 31.5-31.8 GHz, in Region 2, | 190-191.8 GHz, |
| 48.94-49.04 GHz, from airborne stations | 200-209 GHz, |
| 50.2-50.4 GHz ² , | 226-231.5 GHz, |
| 52.6-54.25 GHz, | 250-252 GHz. |
| 86-92 GHz, | |
- (WRC 03)
- 5.341** In the bands 1 400-1 727 MHz, 101-120 GHz and 197-220 GHz, passive research is being conducted by some countries in a programme for the search for intentional emissions of extraterrestrial origin.

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

- 5.341A** In Region 1, the frequency bands 1 427-1 452 MHz and 1 492-1 518 MHz are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-15)***. This identification does not preclude the use of these frequency bands by any other application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of IMT stations is subject to agreement obtained under No. **9.21** with respect to the aeronautical mobile service used for aeronautical telemetry in accordance with No. **5.342**. (WRC-15)
- 5.341B** In Region 2, the frequency band 1 427-1 518 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-15)***. This identification does not preclude the use of this frequency band by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-15)
- 5.341C** The frequency bands 1 427-1 452 MHz and 1 492-1 518 MHz are identified for use by administrations in Region 3 wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-15)***. The use of these frequency bands by the above administrations for the implementation of IMT in the frequency bands 1 429-1 452 MHz and 1 492-1 518 MHz is subject to agreement obtained under No. **9.21** from countries using stations of the aeronautical mobile service. This identification does not preclude the use of these frequency bands by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-15)
- 5.342** *Additional allocation:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Uzbekistan, Kyrgyzstan and Ukraine, the frequency band 1 429-1 535 MHz is also allocated to the aeronautical mobile service on a primary basis, exclusively for the purposes of aeronautical telemetry within the national territory. As of 1 April 2007, the use of the frequency band 1 452-1 492 MHz is subject to agreement between the administrations concerned. (WRC-15)
- 5.343** In Region 2, the use of the band 1 435-1 535 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service.
- 5.344** *Alternative allocation:* in the United States, the band 1 452-1 525 MHz is allocated to the fixed and mobile services on a primary basis (see also No. **5.343**).
- 5.345** Use of the frequency band 1 452-1 492 MHz by the broadcasting-satellite service, and by the broadcasting service, is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (Rev.WRC-19)**. (WRC-19)

* *Note by the Secretariat:* This Resolution was revised by WRC-19 and WRC-23.

- 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, Somalia, 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-23)**. 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-23)
- 5.346A** The frequency band 1 452-1 492 MHz is identified for use by administrations in Region 3 wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-19)***** and Resolution **761 (Rev.WRC-19)**. The use of this frequency band by the above administrations for the implementation of IMT is subject to agreement obtained under No. **9.21** from countries using stations of the aeronautical mobile service. This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-19)
- 5.347** (SUP - WRC-07)
- 5.347A*** (SUP - WRC-07)
- 5.348** The use of the band 1 518-1 525 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. In the band 1 518-1 525 MHz stations in the mobile-satellite service shall not claim protection from the stations in the fixed service. No. **5.43A** does not apply. (WRC-03)
- 5.348A** In the band 1 518-1 525 MHz, the coordination threshold in terms of the power flux-density levels at the surface of the Earth in application of No. **9.11A** for space stations in the mobile-satellite (space-to-Earth) service, with respect to the land mobile service use for specialized mobile radios or used in conjunction with public switched telecommunication networks (PSTN) operating within the territory of Japan, shall be – 150 dB(W/m²) in any 4 kHz band for all angles of arrival, instead of those given in Table 5-2 of Appendix 5. In the band 1 518-1 525 MHz stations in the mobile-satellite service shall not claim protection from stations in the mobile service in the territory of Japan. No. **5.43A** does not apply. (WRC-03)
- 5.348B** In the band 1 518-1 525 MHz, stations in the mobile-satellite service shall not claim protection from aeronautical mobile telemetry stations in the mobile service in the

** The use by Palestine of the allocation to the mobile service in the frequency band 1 452-1 492 MHz identified for IMT is noted, pursuant to Resolution 99 (Rev. Dubai, 2018) of the Plenipotentiary Conference and taking into account the Israeli-Palestinian Interim Agreement of 28 September 1995.

*** *Note by the Secretariat:* This Resolution was revised by WRC-23.

* *Note by the Secretariat:* This provision has been modified by WRC-07, and subsequently renumbered No. **5.208B** in order to preserve the sequential order.

territory of the United States (see Nos. **5.343** and **5.344**) and in the countries listed in No. **5.342**. No. **5.43A** does not apply. (WRC-03)

5.348C (SUP - WRC-07)

5.349 *Different category of service:* in Saudi Arabia, Azerbaijan, Bahrain, Cameroon, Djibouti, Egypt, Iran (Islamic Republic of), Iraq, Israel, Kuwait, Lebanon, North Macedonia, Morocco, Qatar, Syrian Arab Republic, Kyrgyzstan, Turkmenistan and Yemen, the allocation of the frequency band 1 525-1 530 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. **5.33**). (WRC-23)

5.350 *Additional allocation:* in Kyrgyzstan and Turkmenistan, the frequency band 1 525-1 530 MHz is also allocated to the aeronautical mobile service on a primary basis. (WRC-19)

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

5.351A For the use of the frequency bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 645.5 MHz, 1 646.5-1 660.5 MHz, 1 668-1 675 MHz, 1 980-2 010 MHz, 2 170-2 200 MHz, 2 483.5-2 520 MHz and 2 670-2 690 MHz by the mobile-satellite service, see Resolutions **212 (Rev.WRC-23)** and **225 (Rev.WRC-23)**. (WRC-23)

5.352 (SUP - WRC-97)

5.352A In the frequency band 1 525-1 530 MHz, stations in the mobile-satellite service, except stations in the maritime mobile-satellite service, shall not cause harmful interference to, or claim protection from, stations of the fixed service in Algeria, Saudi Arabia, Egypt, Guinea, India, Israel, Italy, Jordan, Kuwait, Mali, Morocco, Mauritania, Nigeria, **Oman**, Pakistan, the Philippines, Qatar, Syrian Arab Republic, Viet Nam and Yemen notified prior to 1 April 1998. (WRC-19)

5.353 (SUP - WRC-97)

5.353A In applying the procedures of Section II of Article **9** to the mobile-satellite service in the frequency bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz, priority shall be given to accommodating the spectrum requirements for distress, urgency and safety communications of the Global Maritime Distress and Safety System (GMDSS). Maritime mobile-satellite distress, urgency and safety communications shall have priority access and immediate availability over all other mobile satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, distress, urgency and safety communications of the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution **222 (Rev. WRC-23)** shall apply.) (WRC-23)

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

- 5.355** *Additional allocation:* in Bahrain, Bangladesh, Congo (Rep. of the), Djibouti, Egypt, Eritrea, Iraq, Israel, Kuwait, Qatar, Syrian Arab Republic, Somalia, Sudan, South Sudan, Chad, Togo and Yemen, the bands 1 540-1 559 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a secondary basis. (WRC-12)
- 5.356** The use of the band 1 544-1 545 MHz by the mobile-satellite service (space-to-Earth) is limited to distress and safety communications (see Article **31**).
- 5.357** Transmissions in the band 1 545-1 555 MHz from terrestrial aeronautical stations directly to aircraft stations, or between aircraft stations, in the aeronautical mobile (R) service are also authorized when such transmissions are used to extend or supplement the satellite-to-aircraft links.
- 5.357A** In applying the procedures of Section II of Article **9** to the mobile-satellite service in the frequency bands 1 545-1 555 MHz and 1 646.5-1 656.5 MHz, priority shall be given to accommodating the spectrum requirements of the aeronautical mobile-satellite (R) service providing transmission of messages with priority 1 to 6 in Article **44**. Aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article **44** shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article **44**. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. The provisions of Resolution **222 (Rev.WRC-23)** shall apply. (WRC-23)
- 5.358** (SUP - WRC-97)
- 5.359** *Additional allocation:* in Germany, Saudi Arabia, Armenia, Azerbaijan, Belarus, Cameroon, the Russian Federation, Georgia, Guinea, Guinea-Bissau, Jordan, Kazakhstan, Kuwait, Lithuania, Mauritania, Uganda, Uzbekistan, Pakistan, Poland, the Syrian Arab Republic, Kyrgyzstan, the Dem. People's Rep. of Korea, Romania, Tajikistan, Tunisia and Turkmenistan, the frequency bands 1 550-1 559 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a primary basis. Administrations are urged to make all practicable efforts to avoid the implementation of new fixed-service stations in these frequency bands. (WRC-23)
- 5.360** (SUP - WRC-97)
- 5.361** (SUP - WRC-97)
- 5.362** (SUP - WRC-97)
- 5.362A** In the United States, in the bands 1 555-1 559 MHz and 1 656.5-1 660.5 MHz, the aeronautical mobile-satellite (R) service shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article **44**. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (WRC-97)
- 5.362B** (SUP - WRC-15)
- 5.362C** (SUP - WRC-15)
- 5.363** (SUP - WRC-07)

- 5.364** The use of the band 1 610-1 626.5 MHz by the mobile-satellite service (Earth-to-space) and by the radiodetermination-satellite service (Earth-to-space) is subject to coordination under No. **9.11A**. A mobile earth station operating in either of the services in this band shall not produce a peak e.i.r.p. density in excess of -15 dB(W/4 kHz) in the part of the band used by systems operating in accordance with the provisions of No. **5.366** (to which No. **4.10** applies), unless otherwise agreed by the affected administrations. In the part of the band where such systems are not operating, the mean e.i.r.p. density of a mobile earth station shall not exceed -3 dB(W/4 kHz). Stations of the mobile-satellite service shall not claim protection from stations in the aeronautical radionavigation service, stations operating in accordance with the provisions of No. **5.366** and stations in the fixed service operating in accordance with the provisions of No. **5.359**. Administrations responsible for the coordination of mobile-satellite networks shall make all practicable efforts to ensure protection of stations operating in accordance with the provisions of No. **5.366**.
- 5.365** The use of the band 1 613.8-1 626.5 MHz by the mobile-satellite service (space-to-Earth) is subject to coordination under No. **9.11A**.
- 5.366** The band 1 610-1 626.5 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities. Such satellite use is subject to agreement obtained under No. **9.21**.
- 5.367** *Additional allocation:* The frequency band 1 610-1 626.5 MHz is also allocated to the aeronautical mobile-satellite (R) service on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-12)
- 5.368** The provisions of No. **4.10** do not apply with respect to the radiodetermination-satellite and mobile-satellite services in the frequency band 1 610-1 626.5 MHz. However, No. **4.10** applies in the frequency band 1 610-1 626.5 MHz with respect to the aeronautical radionavigation-satellite service when operating in accordance with No. **5.366**, the aeronautical mobile-satellite (R) service when operating in accordance with No. **5.367**, and in the frequency bands 1 614.4225-1 618.725 MHz or 1 616.3-1 620.38 MHz (Earth-to-space) (see *resolves 5* of Resolution **365 (WRC-23)**) and 1 621.35-1 626.5 MHz with respect to the maritime mobile-satellite service when used for the global maritime distress and safety system (GMDSS). In applying the procedure of Section II of Article **9**, the provisions of No. **4.10** do not apply for the frequency bands 1 614.4225-1 618.725 MHz or 1 616.3-1 620.38 MHz (Earth-to-space) (see *resolves 5* of Resolution **365 (WRC-23)**) and 2 483.59-2 499.91 MHz (space-to-Earth) for the maritime mobile-satellite service when used for the GMDSS with satellite networks or systems for which complete coordination information has been received by the Radiocommunication Bureau before 20 November 2023. Resolution **365 (WRC-23)** applies. (WRC-23)
- 5.369** *Different category of service:* in Angola, Australia, China, Eritrea, Ethiopia, India, Iran (Islamic Republic of), Israel, Lebanon, Liberia, Madagascar, Mali, Pakistan, Papua New Guinea, Syrian Arab Republic, the Dem. Rep. of the Congo, Sudan, South Sudan, Togo and Zambia, the allocation of the band 1 610-1 626.5 MHz to the radiodetermination-satellite service (Earth-to-space) is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21** from countries not listed in this provision. (WRC-12)
- 5.370** *Different category of service:* in Venezuela, the allocation to the radiodetermination-satellite service in the band 1 610-1 626.5 MHz (Earth-to-space) is on a secondary basis.

- 5.371** *Additional allocation:* in Region 1, the band 1 610-1 626.5 MHz (Earth-to-space) is also allocated to the radiodetermination-satellite service on a secondary basis, subject to agreement obtained under No. **9.21**. (WRC-12)
- 5.372** Harmful interference shall not be caused to stations of the radio astronomy service using the frequency band 1 610.6-1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services (No. **29.13** applies). The equivalent power flux-density (epfd) produced in the frequency band 1 610.6-1 613.8 MHz by all space stations of a non-geostationary-satellite system in the mobile-satellite service (space-to-Earth) operating in frequency band 1 613.8-1 626.5 MHz shall be in compliance with the protection criteria provided in Recommendations ITU-R RA.769-2 and ITU-R RA.1513-2, using the methodology given in Recommendation ITU-R M.1583-1, and the radio astronomy antenna pattern described in Recommendation ITU-R RA.1631-0. (WRC-19)
- 5.372A** The maritime mobile-satellite service in the frequency bands 1 614.4225-1 618.725 MHz or 1 616.3-1 620.38 MHz (Earth-to-space) (see *resolves* 5 of Resolution **365 (WRC-23)**) and 2 483.59-2 499.91 MHz (space-to-Earth) when they are used for the global maritime distress and safety system (GMDSS) is limited to the geostationary-satellite networks identified in Resolution **365 (WRC-23)** and their associated earth stations located within a service area from 75°E to 135°E longitude and from 10°N to 55°N latitude. Resolution **365 (WRC-23)** applies. (WRC-23)
- 5.373** Maritime mobile earth stations receiving in the frequency band 1 621.35-1 626.5 MHz shall not impose additional constraints on earth stations operating in the maritime mobile-satellite service or maritime earth stations of the radiodetermination-satellite service operating in accordance with the Radio Regulations in the frequency band 1 610-1 621.35 MHz or on earth stations operating in the maritime mobile-satellite service operating in accordance with the Radio Regulations in the frequency band 1 626.5-1 660.5 MHz, unless otherwise agreed between the notifying administrations. (WRC-19)
- 5.373A** Maritime mobile earth stations receiving in the frequency band 1 621.35-1 626.5 MHz shall not impose constraints on the assignments of earth stations of the mobile-satellite service (Earth-to-space) and the radiodetermination-satellite service (Earth-to-space) in the frequency band 1 621.35-1 626.5 MHz in networks for which complete coordination information has been received by the Radiocommunication Bureau before 28 October 2019. (WRC-19)
- 5.374** Mobile earth stations in the mobile-satellite service operating in the bands 1 631.5-1 634.5 MHz and 1 656.5-1 660 MHz shall not cause harmful interference to stations in the fixed service operating in the countries listed in No. **5.359**. (WRC-97)
- 5.375** The use of the frequency band 1 645.5-1 646.5 MHz by the mobile-satellite service (Earth-to-space) and for inter-satellite links is limited to distress, urgency and safety communications (see Article **31**). (WRC-23)
- 5.376** Transmissions in the band 1 646.5-1 656.5 MHz from aircraft stations in the aeronautical mobile (R) service directly to terrestrial aeronautical stations, or between aircraft stations, are also authorized when such transmissions are used to extend or supplement the aircraft-to-satellite links.
- 5.376A** Mobile earth stations operating in the band 1 660-1 660.5 MHz shall not cause harmful interference to stations in the radio astronomy service. (WRC-97)
- 5.377** (SUP - WRC-03)

- 5.378** Not used.
- 5.379** *Additional allocation:* in Bangladesh, India, Indonesia, Nigeria and Pakistan, the band 1 660.5-1 668.4 MHz is also allocated to the meteorological aids service on a secondary basis.
- 5.379A** Administrations are urged to give all practicable protection in the band 1 660.5-1 668.4 MHz for future research in radio astronomy, particularly by eliminating air-to-ground transmissions in the meteorological aids service in the band 1 664.4-1 668.4 MHz as soon as practicable.
- 5.379B** The use of the frequency band 1 668-1 675 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. (WRC-23)
- 5.379C** In order to protect the radio astronomy service in the band 1 668-1 670 MHz, the aggregate power flux-density values produced by mobile earth stations in a network of the mobile-satellite service operating in this band shall not exceed -181 dB(W/m²) in 10 MHz and -194 dB(W/m²) in any 20 kHz at any radio astronomy station recorded in the Master International Frequency Register, for more than 2% of integration periods of 2 000 s. (WRC-03)
- 5.379D** For sharing of the frequency band 1 668.4-1 675 MHz between the mobile-satellite service and the fixed and mobile services, Resolution **744 (Rev.WRC-23)** shall apply. (WRC-23)
- 5.379E** In the band 1 668.4-1 675 MHz, stations in the mobile-satellite service shall not cause harmful interference to stations in the meteorological aids service in China, Iran (Islamic Republic of), Japan and Uzbekistan. In the band 1 668.4-1 675 MHz, administrations are urged not to implement new systems in the meteorological aids service and are encouraged to migrate existing meteorological aids service operations to other bands as soon as practicable. (WRC-03)
- 5.380** (SUP - WRC-07)
- 5.380A** In the band 1 670-1 675 MHz, stations in the mobile-satellite service shall not cause harmful interference to, nor constrain the development of, existing earth stations in the meteorological-satellite service notified before 1 January 2004. Any new assignment to these earth stations in this band shall also be protected from harmful interference from stations in the mobile-satellite service. (WRC-07)
- 5.381** *Additional allocation:* in Afghanistan, Cuba, India, Iran (Islamic Republic of) and Pakistan, the band 1 690-1 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis, and in the Dem. People's Rep. of Korea the frequency band 1 690-1 700 MHz is also allocated to the fixed service on a primary basis (see No. **5.33**) and to the mobile, except aeronautical mobile, service on a secondary basis. (WRC-23)
- 5.382** *Different category of service:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Congo (Rep. of the), Egypt, the United Arab Emirates, Eritrea, Ethiopia, the Russian Federation, Guinea, Iraq, Israel, Jordan, Kazakhstan, Kuwait, Lebanon, North Macedonia, Mauritania, Moldova, Mongolia, **Oman**, Uzbekistan, Poland, Qatar, the Syrian Arab Republic, Kyrgyzstan, Somalia, Tajikistan, Turkmenistan, Ukraine and Yemen, the allocation of the frequency band 1 690-1 700 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. **5.33**). (WRC-23)

- 5.383** Not used.
- 5.384** *Additional allocation:* in India, Indonesia and Japan, the band 1 700-1 710 MHz is also allocated to the space research service (space-to-Earth) on a primary basis. (WRC-97)
- 5.384A** The frequency bands 1 710-1 885 MHz, 2 300-2 400 MHz and 2 500-2 690 MHz, or portions thereof, are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-15)***. This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-15)
- 5.385** *Additional allocation:* the band 1 718.8-1 722.2 MHz is also allocated to the radio astronomy service on a secondary basis for spectral line observations. (WRC-2000)
- 5.386** *Additional allocation:* the frequency band 1 750-1 850 MHz is also allocated to the space operation (Earth-to-space) and space research (Earth-to-space) services in Region 2 (except in Mexico), in Australia, Guam, India, Indonesia and Japan on a primary basis, subject to agreement obtained under No. **9.21**, having particular regard to troposcatter systems. (WRC-15)
- 5.387** *Additional allocation:* in Belarus, Georgia, Kyrgyzstan, Romania, Tajikistan and Turkmenistan, the frequency band 1 770-1 790 MHz is also allocated to the meteorological-satellite service on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-23)
- 5.388** The frequency bands 1 885-2 025 MHz and 2 110-2 200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement International Mobile Telecommunications (IMT). Such use does not preclude the use of these frequency bands by other services to which they are allocated. The frequency bands should be made available for IMT in accordance with Resolution **212 (Rev.WRC-23)** (see also Resolution **223 (Rev.WRC-23)**). (WRC-23)
- 5.388A** The frequency bands 1 710-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz in Regions 1 and 3 and the frequency bands 1 710-1 980 MHz and 2 110-2 160 MHz in Region 2 are identified for the use by high altitude platform stations as International Mobile Telecommunications (IMT) base stations (HIBS). This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. Resolution **221 (Rev.WRC-23)** shall apply. HIBS shall not claim protection from existing primary services. No. **5.43A** does not apply. Such use of HIBS in the frequency bands 1 710-1 785 MHz in Regions 1 and 2, and 1 710-1 815 MHz in Region 3 is limited to reception by HIBS, and in the frequency band 2 110-2 170 MHz is limited to transmission from HIBS. (WRC-23)
- 5.388B** (SUP - WRC-23)

* *Note by the Secretariat:* This Resolution was revised by WRC-19 and WRC-23.

- 5.389** Not used.
- 5.389A** The use of the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz by the mobile-satellite service is subject to coordination under No. **9.11A** and to the provisions of Resolution **716 (Rev.WRC-23)**. (WRC-23)
- 5.389B** The use of the frequency band 1 980-1 990 MHz by the mobile-satellite service shall not cause harmful interference to or constrain the development of the fixed and mobile services in Argentina, Brazil, Canada, Chile, Ecuador, the United States, Honduras, Jamaica, Mexico, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay and Venezuela. (WRC-19)
- 5.389C** The use of the frequency bands 2 010-2 025 MHz and 2 160-2 170 MHz in Region 2 by the mobile-satellite service is subject to coordination under No. **9.11A** and to the provisions of Resolution **716 (Rev.WRC-23)**. (WRC-23)
- 5.389D** (SUP - WRC-03)
- 5.389E** The use of the bands 2 010-2 025 MHz and 2 160-2 170 MHz by the mobile-satellite service in Region 2 shall not cause harmful interference to or constrain the development of the fixed and mobile services in Regions 1 and 3.
- 5.389F** In Algeria, Cabo Verde, Egypt, Iran (Islamic Republic of), Mali, Syrian Arab Republic and Tunisia, the use of the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz by the mobile-satellite service shall neither cause harmful interference to the fixed and mobile services brought into use prior to 1 January 2005, nor hamper the development of those services, nor shall the former service request protection from the latter services. (WRC-23)
- 5.390** (SUP - WRC-07)
- 5.391** In making assignments to the mobile service in the frequency bands 2 025-2 110 MHz and 2 200-2 290 MHz, administrations shall not introduce high-density mobile systems, as described in Recommendation ITU-R SA.1154-0, and shall take that Recommendation into account for the introduction of any other type of mobile system. (WRC-15)
- 5.392** Administrations are urged to take all practicable measures to ensure that space-to-space transmissions between two or more non-geostationary satellites, in the space research, space operations and Earth exploration-satellite services in the bands 2 025-2 110 MHz and 2 200-2 290 MHz, shall not impose any constraints on Earth-to-space, space-to-Earth and other space-to-space transmissions of those services and in those bands between geostationary and non-geostationary satellites.
- 5.392A** (SUP - WRC-07)
- 5.393** *Additional allocation:* in Canada, the United States and India, the frequency band 2 310-2 360 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial sound broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (Rev.WRC-19)**, with the exception of *resolves* 3 in regard to the limitation on broadcasting-satellite systems in the upper 25 MHz. Complementary terrestrial sound broadcasting stations shall be subject to bilateral coordination with neighbouring countries prior to their bringing into use. (WRC-19)

- 5.394** In the United States, the use of the frequency band 2 360-2 395 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile services. In Canada, the use of the frequency band 2 360-2 400 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile services. (WRC-23)
- 5.395** In France and Türkiye, the use of the band 2 310-2 360 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service. (WRC-23)
- 5.396** (SUP - WRC-19)
- 5.397** (SUP - WRC-12)
- 5.398** In respect of the radiodetermination-satellite service in the band 2 483.5-2 500 MHz, the provisions of No. **4.10** do not apply.
- 5.398A** *Different category of service:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan and Ukraine, the band 2 483.5-2 500 MHz is allocated on a primary basis to the radiolocation service. The radiolocation stations in these countries shall not cause harmful interference to, or claim protection from, stations of the fixed, mobile and mobile-satellite services operating in accordance with the Radio Regulations in the frequency band 2 483.5-2 500 MHz. (WRC-12)
- 5.399** Except for cases referred to in No. **5.401**, stations of the radiodetermination-satellite service operating in the frequency band 2 483.5-2 500 MHz for which notification information is received by the Bureau after 17 February 2012, and the service area of which includes Armenia, Azerbaijan, Belarus, the Russian Federation, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan and Ukraine, shall not cause harmful interference to, and shall not claim protection from stations of the radiolocation service operating in these countries in accordance with No. **5.398A**. (WRC-12)
- 5.400** (SUP - WRC-12)
- 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)
- 5.402** The use of the band 2 483.5-2 500 MHz by the mobile-satellite and the radiodetermination-satellite services is subject to the coordination under No. **9.11A**. Administrations are urged to take all practicable steps to prevent harmful interference to the radio astronomy service from emissions in the 2 483.5-2 500 MHz band, especially those caused by second-harmonic radiation that would fall into the 4 990-5 000 MHz band allocated to the radio astronomy service worldwide.
- 5.403** Subject to agreement obtained under No. **9.21**, the band 2 520-2 535 MHz may also be used for the mobile-satellite (space-to-Earth), except aeronautical mobile-satellite, service for operation limited to within national boundaries. The provisions of No. **9.11A** apply. (WRC-07)

- 5.404** *Additional allocation:* in India and Iran (Islamic Republic of), the band 2 500-2 516.5 MHz may also be used for the radiodetermination-satellite service (space-to-Earth) for operation limited to within national boundaries, subject to agreement obtained under No. **9.21**.
- 5.405** (SUP- WRC-12)
- 5.406** Not used.
- 5.407** In the band 2 500-2 520 MHz, the power flux-density at the surface of the Earth from space stations operating in the mobile-satellite (space-to-Earth) service shall not exceed $-152 \text{ dB(W/(m}^2 \cdot 4 \text{ kHz))}$ in Argentina, unless otherwise agreed by the administrations concerned.
- 5.408** (SUP - WRC-2000)
- 5.409** (SUP - WRC-07)
- 5.409A** The frequency band 2 500-2 690 MHz in Regions 1 and 2, and the frequency band 2 500-2 655 MHz in Region 3 are identified for use by high-altitude platform stations as International Mobile Telecommunications (IMT) base stations (HIBS). This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. Resolution **218 (WRC-23)** shall apply. HIBS shall not claim protection from existing primary services. No. **5.43A** does not apply. Such use of HIBS in the frequency bands 2 500-2 510 MHz in Regions 1 and 2, and 2 500-2 535 MHz in Region 3 is limited to reception by HIBS. (WRC-23)
- 5.410** The band 2 500-2 690 MHz may be used for tropospheric scatter systems in Region 1, subject to agreement obtained under No. **9.21**. No. **9.21** does not apply to tropospheric scatter links situated entirely outside Region 1. Administrations shall make all practicable efforts to avoid developing new tropospheric scatter systems in this band. When planning new tropospheric scatter radio-relay links in this band, all possible measures shall be taken to avoid directing the antennas of these links towards the geostationary-satellite orbit. (WRC-12)
- 5.411** (SUP - WRC-07)
- 5.412** *Alternative allocation:* in Kyrgyzstan and Turkmenistan, the band 2 500-2 690 MHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-12)
- 5.413** In the design of systems in the broadcasting-satellite service in the bands between 2 520 MHz and 2 670 MHz, administrations are urged to take all necessary steps to protect the radio astronomy service in the band 2 690-2 700 MHz. (WRC-23)
- 5.414** The allocation of the frequency band 2 500-2 520 MHz to the mobile-satellite service (space-to-Earth) is subject to coordination under No. **9.11A**. (WRC-07)

5.414A In Japan and India, the use of the bands 2 500-2 520 MHz and 2 520-2 535 MHz, under No. **5.403**, by a satellite network in the mobile-satellite service (space-to-Earth) is limited to operation within national boundaries and subject to the application of No. **9.11A**. The following pfd values shall be used as a threshold for coordination under No. **9.11A**, for all conditions and for all methods of modulation, in an area of 1 000 km around the territory of the administration notifying the mobile-satellite service network:

-136 dB(W/(m ² · MHz))	for 0° < θ ≤ 5°
-136 + 0.55 (θ-5) dB(W/(m ² · MHz))	for 5° < θ ≤ 25°
-125 dB(W/(m ² · MHz))	for 25° < θ ≤ 90°

where θ is the angle of arrival of the incident wave above the horizontal plane, in degrees. Outside this area Table **21-4** of Article **21** shall apply. Furthermore, the coordination thresholds in Table 5-2 of Annex 1 to Appendix **5** of the Radio Regulations (Edition of 2004), in conjunction with the applicable provisions of Articles **9** and **11** associated with No. **9.11A**, shall apply to systems for which complete notification information has been received by the Radiocommunication Bureau by 14 November 2007 and that have been brought into use by that date. (WRC-07)

5.415 The use of the bands 2 500-2 690 MHz in Region 2 and 2 500-2 535 MHz and 2 655-2 690 MHz in Region 3 by the fixed-satellite service is limited to national and regional systems, subject to agreement obtained under No. **9.21**, giving particular attention to the broadcasting-satellite service in Region 1. (WRC-07)

5.415A *Additional allocation:* in India and Japan, subject to agreement obtained under No. **9.21**, the band 2 520-2 535 MHz may also be used for the aeronautical mobile-satellite service (space-to-Earth) for operation limited to within their national boundaries. (WRC-23)

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

5.417 (SUP - WRC-2000)

5.417A (SUP - WRC-15)

5.417B (SUP - WRC-15)

5.417C (SUP - WRC-15)

5.417D (SUP - WRC-15)

5.418 *Additional allocation:* in India, the frequency band 2 535-2 655 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (Rev.WRC-19)**. The provisions of No. **5.416** and Table **21-4** of Article **21** do not apply to this additional allocation. Use of non-geostationary-satellite systems in the broadcasting-satellite service (sound) is subject to Resolution **539 (Rev.WRC-19)**. Geostationary broadcasting-satellite service (sound) systems for which complete Appendix **4** coordination information has been received after 1 June 2005 are limited to systems intended for national coverage. The power flux-density at the Earth's surface produced by emissions from a geostationary broadcasting-satellite service (sound) space station operating in the frequency band 2 630-2 655 MHz, and for which complete Appendix **4** coordination information has been received after 1 June 2005, shall not exceed the following limits, for all conditions and for all methods of modulation:

-130 dB(W/(m ² · MHz))	for 0° ≤ θ ≤ 5°
-130 + 0.4 (θ - 5) dB(W/(m ² · MHz))	for 5° < θ ≤ 25°
-122 dB(W/(m ² · MHz))	for 25° < θ ≤ 90°

where θ is the angle of arrival of the incident wave above the horizontal plane, in degrees. These limits may be exceeded on the territory of any country whose administration has so agreed. As an exception to the limits above, the pfd value of -122 dB(W/(m² · MHz)) shall be used as a threshold for coordination under No. **9.11** in an area of 1 500 km around the territory of the administration notifying the broadcasting-satellite service (sound) system.

In addition, an administration listed in this provision shall not have simultaneously two overlapping frequency assignments, one under this provision and the other under No. **5.416** for systems for which complete Appendix **4** coordination information has been received after 1 June 2005. (WRC-19)

5.418A In certain Region 3 countries listed in No. **5.418**, use of the band 2 630-2 655 MHz by non-geostationary-satellite systems in the broadcasting-satellite service (sound) for which complete Appendix **4** coordination information, or notification information, has been received after 2 June 2000, is subject to the application of the provisions of No. **9.12A**, in respect of geostationary-satellite networks for which complete Appendix **4** coordination information, or notification information, is considered to have been received after 2 June 2000, and No. **22.2** does not apply. No. **22.2** shall continue to apply with respect to geostationary-satellite networks for which complete Appendix **4** coordination information, or notification information, is considered to have been received before 3 June 2000. (WRC-03)

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

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

5.419 The use of the frequency band 2 670-2 690 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. (WRC-23)

- 5.420** The band 2 655-2 670 MHz may also be used for the mobile-satellite (Earth-to-space), except aeronautical mobile-satellite, service for operation limited to within national boundaries, subject to agreement obtained under No. **9.21**. The coordination under No. **9.11A** applies. (WRC-07)
- 5.420A** (SUP - WRC-07)
- 5.421** (SUP - WRC-03)
- 5.422** *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Brunei Darussalam, Congo (Rep. of the), Côte d'Ivoire, Cuba, Djibouti, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Gabon, Georgia, Guinea, Guinea-Bissau, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Mauritania, Mongolia, Montenegro, Nigeria, **Oman**, Pakistan, the Philippines, Qatar, Syrian Arab Republic, Kyrgyzstan, the Dem. Rep. of the Congo, Romania, Somalia, Tajikistan, Tunisia, Turkmenistan, Ukraine and Yemen, the band 2 690-2 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985. (WRC-12)
- 5.423** In the band 2 700-2 900 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the aeronautical radionavigation service.
- 5.424** *Additional allocation:* in Canada, the band 2 850-2 900 MHz is also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars.
- 5.424A** In the band 2 900-3 100 MHz, stations in the radiolocation service shall not cause harmful interference to, nor claim protection from, radar systems in the radionavigation service. (WRC-03)
- 5.425** In the band 2 900-3 100 MHz, the use of the shipborne interrogator-transponder (SIT) system shall be confined to the sub-band 2 930 -2 950 MHz.
- 5.426** The use of the band 2 900-3 100 MHz by the aeronautical radionavigation service is limited to ground-based radars.
- 5.427** In the bands 2 900-3 100 MHz and 9 300-9 500 MHz, the response from radar transponders shall not be capable of being confused with the response from radar beacons (racons) and shall not cause interference to ship or aeronautical radars in the radionavigation service, having regard, however, to No. **4.9**.
- 5.428** *Additional allocation:* in Kyrgyzstan and Turkmenistan, the frequency band 3 100-3 300 MHz is also allocated to the radionavigation service on a primary basis. (WRC-19)
- 5.429** *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Benin, Brunei Darussalam, Cambodia, Cameroon, China, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Djibouti, Egypt, the United Arab Emirates, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kenya, Kuwait, Lao P.D.R., Lebanon, Libya, Malaysia, Mongolia, Myanmar, New Zealand, **Oman**, Uganda, Pakistan, Palestine*, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, Thailand, Viet Nam and Yemen, the frequency band 3 300-3 400 MHz is also allocated to the fixed and mobile services on a primary basis. Mongolia, New Zealand and the

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

countries bordering the Mediterranean shall not claim protection for their fixed and mobile services from the radiolocation service. (WRC-23)

- 5.429A** *Additional allocation:* in Angola, Botswana, Burkina Faso, Burundi, Cabo Verde, Central African Republic, Comoros, Djibouti, Eritrea, Eswatini, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Equatorial Guinea, Lesotho, Liberia, Madagascar, Malawi, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Palestine*, the Dem. Rep. of the Congo, Rwanda, Sao Tomé and Príncipe, Senegal, Seychelles, Sierra Leone, Somalia, 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-23)
- 5.429B** In the following countries of Region 1: Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Comoros, Congo (Rep. of the), Côte d'Ivoire, Djibouti, Egypt, Eritrea, Eswatini, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Equatorial Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mauritius, Mauritania, Mongolia, Mozambique, Namibia, Niger, Nigeria, Uganda, the Dem. Rep. of the Congo, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, 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-23)**. 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-23)
- 5.429C** *Different category of service:* in Argentina, Brazil, Cuba, the Dominican Republic, Guatemala, Mexico, Paraguay and Uruguay, the frequency band 3 300-3 400 MHz is allocated to the fixed service on a primary basis. Stations in the fixed 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-23)
- 5.429D** In Region 2, the use of the mobile, except aeronautical mobile, service in the frequency band 3 300-3 400 MHz is identified for the implementation of International Mobile Telecommunications (IMT). Such use shall be in accordance with Resolution **223 (Rev.WRC-23)**. 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-23)
- 5.429E** *Additional allocation:* in Papua New Guinea, the frequency band 3 300-3 400 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis. Stations in the mobile service operating in the frequency band 3 300-3 400 MHz shall not cause harmful interference to, or claim protection from, stations operating in the radiolocation service. (WRC-15)

- 5.429F** In the following countries in Region 3: Cambodia, India, Indonesia, Lao P.D.R., Pakistan, the Philippines, Singapore and Viet Nam, the use of the frequency band 3 300-3 400 MHz is identified for the implementation of International Mobile Telecommunications (IMT). Such use shall be in accordance with Resolution **223 (Rev.WRC-23)**. 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. Before an administration brings into use a base or mobile station of an IMT system in this frequency band, it shall seek agreement under No. **9.21** with neighbouring countries to protect 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-23)
- 5.429G** Stations in the mobile, except aeronautical mobile, service operating in the frequency band 3 300-3 400 MHz in Region 2 shall not cause harmful interference to, or claim protection from, systems operating in the radiolocation service. (WRC-23)
- 5.430** *Additional allocation:* in Kyrgyzstan and Turkmenistan, the frequency band 3 300-3 400 MHz is also allocated to the radionavigation service on a primary basis. (WRC-19)
- 5.430A** The allocation of the frequency band 3 400-3 600 MHz to the mobile, except aeronautical mobile, service is subject to agreement obtained under No. **9.21**. This frequency band is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The provisions of Nos. **9.17** and **9.18** shall also apply in the coordination phase. Before an administration brings into use a (base or mobile) station of the mobile service in this frequency band, it shall ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed $-154.5 \text{ dB(W/(m}^2 \cdot 4 \text{ kHz))}$ for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station) and with the assistance of the Bureau if so requested. In case of disagreement, calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service in the frequency band 3 400-3 600 MHz shall not claim more protection from space stations than that provided in Table **21-4** of the Radio Regulations (Edition of 2004). (WRC-15)
- 5.431** *Additional allocation:* in Germany, the frequency band 3 400-3 475 MHz is also allocated to the amateur service on a secondary basis. (WRC-19)
- 5.431A** In Region 2, the allocation of the frequency band 3 400-3 500 MHz to the mobile, except aeronautical mobile, service on a primary basis is subject to agreement obtained under No. **9.21**. (WRC-15)
- 5.431B** In Region 2, the frequency band 3 400-3 600 MHz 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. At the stage of coordination the provisions of Nos. **9.17** and **9.18** also apply. Before an administration brings into use a base or mobile station of an IMT system, it shall seek agreement under No. **9.21** with other administrations and ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed $-154.5 \text{ dB(W/(m}^2 \cdot 4 \text{ kHz))}$

for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station), with the assistance of the Bureau if so requested. In case of disagreement, the calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service, including IMT systems, in the frequency band 3 400-3 600 MHz shall not claim more protection from space stations than that provided in Table 21-4 of the Radio Regulations (Edition of 2004). (WRC-15)

5.432 *Different category of service:* in Korea (Rep. of), Japan, Pakistan and the Dem. People's Rep. of Korea, the allocation of the frequency band 3 400-3 500 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. 5.33). (WRC-19)

5.432A In Korea (Rep. of), Japan, Pakistan and the Dem. People's Rep. of Korea, the frequency band 3 400-3 500 MHz is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. At the stage of coordination the provisions of Nos. 9.17 and 9.18 also apply. Before an administration brings into use a (base or mobile) station of the mobile service in this frequency band it shall ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed $-154.5 \text{ dB(W/(m}^2 \cdot 4 \text{ kHz))}$ for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station), with the assistance of the Bureau if so requested. In case of disagreement, the calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service in the frequency band 3 400-3 500 MHz shall not claim more protection from space stations than that provided in Table 21-4 of the Radio Regulations (Edition of 2004). (WRC-19)

5.432B *Different category of service:* in Australia, Bangladesh, Brunei Darussalam, China, French overseas communities of Region 3, India, Indonesia, Iran (Islamic Republic of), Malaysia, New Zealand, the Philippines, Singapore and Thailand, the frequency band 3 400-3 500 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis, subject to agreement obtained under No. 9.21 with other administrations and is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. At the stage of coordination the provisions of Nos. 9.17 and 9.18 also apply. Before an administration brings into use a (base or mobile) station of the mobile service in this frequency band it shall ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed $-154.5 \text{ dB(W/(m}^2 \cdot 4 \text{ kHz))}$ for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial

station and the administration responsible for the earth station), with the assistance of the Bureau if so requested. In case of disagreement, the calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service in the frequency band 3 400-3 500 MHz shall not claim more protection from space stations than that provided in Table **21-4** of the Radio Regulations (Edition of 2004). (WRC-19)

5.433 In Regions 2 and 3, in the band 3 400-3 600 MHz the radiolocation service is allocated on a primary basis. However, all administrations operating radiolocation systems in this band are urged to cease operations by 1985. Thereafter, administrations shall take all practicable steps to protect the fixed-satellite service and coordination requirements shall not be imposed on the fixed-satellite service.

5.433A In Australia, Bangladesh, Brunei Darussalam, China, French overseas communities of Region 3, Korea (Rep. of), India, Indonesia, Iran (Islamic Republic of), Japan, New Zealand, Pakistan, the Philippines, the Dem. People's Rep. of Korea and Singapore, the frequency band 3 500-3 600 MHz is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. At the stage of coordination the provisions of Nos. **9.17** and **9.18** also apply. Before an administration brings into use a (base or mobile) station of the mobile service in this frequency band it shall ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed $-154.5 \text{ dB(W/(m}^2 \cdot 4 \text{ kHz))}$ for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station), with the assistance of the Bureau if so requested. In case of disagreement, the calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service in the frequency band 3 500-3 600 MHz shall not claim more protection from space stations than that provided in Table **21-4** of the Radio Regulations (Edition of 2004). (WRC-23)

5.433B In Angola, Botswana, Guinea, Lesotho, Malawi and South Sudan, the frequency band 3 600-3 700 MHz is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of the frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The conditions of No. **5.434A** shall apply. (WRC-23)

- 5.434** In Region 2, the frequency band 3 600-3 700 MHz 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. Administrations wishing to implement IMT shall obtain the agreement of neighbouring countries to ensure the protection of the fixed-satellite service (space-to-Earth). (WRC-23)
- 5.434A** The use of the frequency band 3 600-3 800 MHz by the mobile, except aeronautical mobile, service on a primary basis in Region 1 is subject to agreement obtained under No. **9.21** if the power flux-density (pfd) limit below is exceeded. The provisions of Nos. **9.17** and **9.18** shall also apply in the coordination phase. Before an administration in Region 1 brings into use a station in the mobile service in the frequency band 3 600-3 800 MHz, for the protection of stations in the fixed and fixed-satellite services, it shall ensure that the pfd produced at 3 m above ground does not exceed $-154.5 \text{ dB(W/(m}^2 \cdot 4 \text{ kHz))}$ for more than 20% of the time at the border of the territory of any other administration. Stations in the mobile service operating in the frequency band 3 600-3 800 MHz shall not claim more protection from space stations than that provided in Table **21-4** of the Radio Regulations. (WRC-23)
- 5.434B** In Algeria, Saudi Arabia, Azerbaijan, Bahrain, Belarus, Benin, Burkina Faso, Burundi, Cameroon, Central African Rep., Comoros, Congo (Rep. of the), Côte d'Ivoire, Djibouti, Egypt, United Arab Emirates, Eswatini, Gabon, Gambia, Ghana, Guinea, Iraq, Jordan, Kazakhstan, Kenya, Kuwait, Lebanon, Liberia, Libya, Madagascar, Mali, Morocco, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, **Oman**, Uganda, Uzbekistan, Palestine*, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Somalia, Sudan, South Africa, Tanzania, Chad, Togo, Tunisia, Yemen, Zambia and Zimbabwe, the frequency band 3 600-3 800 MHz is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of the frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The conditions of No. **5.434A** shall apply. (WRC-23)
- 5.435** In Japan, in the band 3 620-3 700 MHz, the radiolocation service is excluded.
- 5.435A** *Different category of service:* In Angola, Botswana, Guinea, Lesotho, Malawi and South Sudan, the frequency band 3 700-3 800 MHz is allocated to the mobile service on a secondary basis. (WRC-23)
- 5.435B** In the Bahamas, Belize, Brazil, Canada, Colombia, Costa Rica, United States, Guatemala, the French overseas departments and communities in Region 2, Greenland, the overseas countries and territories within the Kingdom of the Netherlands in Region 2, Paraguay, Peru, Trinidad and Tobago and Uruguay, the frequency band 3 700-3 800 MHz is identified for use by any of these 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. Administrations wishing to implement IMT shall obtain the agreement of neighbouring countries to ensure the protection of the fixed-satellite service (space-to-Earth). (WRC-23)

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

- 5.436** Use of the frequency band 4 200-4 400 MHz by stations in the aeronautical mobile (R) service is reserved exclusively for wireless avionics intra-communication systems that operate in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution **424 (Rev.WRC-23)**. (WRC-23)
- 5.437** Passive sensing in the Earth exploration-satellite and space research services may be authorized in the frequency band 4 200-4 400 MHz on a secondary basis. (WRC-15)
- 5.438** Use of the frequency band 4 200-4 400 MHz by the aeronautical radionavigation service is reserved exclusively for radio altimeters installed on board aircraft and for the associated transponders on the ground. (WRC-15)
- 5.439** *Additional allocation:* in Iran (Islamic Republic of), the band 4 200-4 400 MHz is also allocated to the fixed service on a secondary basis. (WRC-12)
- 5.440** The standard frequency and time signal-satellite service may be authorized to use the frequency 4 202 MHz for space-to-Earth transmissions and the frequency 6 427 MHz for Earth-to-space transmissions. Such transmissions shall be confined within the limits of ± 2 MHz of these frequencies, subject to agreement obtained under No. **9.21**.
- 5.440A** In Region 2 (except Brazil, Cuba, French overseas departments and communities, Guatemala, Paraguay, Uruguay and Venezuela), and in Australia, the band 4 400-4 940 MHz may be used for aeronautical mobile telemetry for flight testing by aircraft stations (see No. **1.83**). Such use shall be in accordance with Resolution **416 (WRC-07)** and shall not cause harmful interference to, nor claim protection from, the fixed-satellite and fixed services. Any such use does not preclude the use of this band by other mobile service applications or by other services to which this band is allocated on a co-primary basis and does not establish priority in the Radio Regulations. (WRC-07)
- 5.441** The use of the bands 4 500-4 800 MHz (space-to-Earth), 6 725-7 025 MHz (Earth-to-space) by the fixed-satellite service shall be in accordance with the provisions of Appendix **30B**. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by geostationary-satellite systems in the fixed-satellite service shall be in accordance with the provisions of Appendix **30B**. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)

- 5.441A** In Brazil, Paraguay and Uruguay, the frequency band 4 800-4 900 MHz, or portions thereof, is identified for the implementation of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of this frequency band for the implementation of IMT is subject to agreement obtained with neighbouring countries, and IMT stations shall not claim protection from stations of other applications of the mobile service. Such use shall be in accordance with Resolution **223 (Rev.WRC-19)***. (WRC-19)
- 5.441B** In Angola, Argentina, Armenia, Azerbaijan, Benin, Botswana, Brazil, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Chile, China, Colombia, Congo (Rep. of the), Côte d'Ivoire, Djibouti, Eswatini, Russian Federation, Gabon, Ghana, Guinea, Iran (Islamic Republic of), Iraq, Kazakhstan, Lao P.D.R., Lesotho, Liberia, Madagascar, Malawi, Mali, Mongolia, Namibia, Niger, Uganda, Uzbekistan, the Dem. Rep. of the Congo, Kyrgyzstan, the Dem. People's Rep. of Korea, South Sudan, South Africa, Chad, Togo, Viet Nam, Zambia and Zimbabwe, the frequency band 4 800-4 990 MHz, or portions thereof, is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of IMT stations is subject to agreement obtained under No. **9.21** with concerned administrations, and IMT stations shall not claim protection from stations of other applications of the mobile service. In addition, before an administration brings into use an IMT station in the mobile service, it shall ensure that the power flux-density (pfd) produced by this station does not exceed $-155 \text{ dB(W/(m}^2 \cdot 1 \text{ MHz))}$ produced up to 19 km above sea level at 20 km from the coast, defined as the low-water mark, as officially recognized by the coastal State. Resolution **223 (Rev.WRC-23)** applies. (WRC-23)
- 5.442** In the frequency bands 4 825-4 835 MHz and 4 950-4 990 MHz, the allocation to the mobile service is restricted to the mobile, except aeronautical mobile, service. In Region 2 (except Brazil, Cuba, Guatemala, Mexico, Paraguay, Uruguay and Venezuela), and in Australia, the frequency band 4 825-4 835 MHz is also allocated to the aeronautical mobile service, limited to aeronautical mobile telemetry for flight testing by aircraft stations. Such use shall be in accordance with Resolution **416 (WRC-07)** and shall not cause harmful interference to the fixed service. (WRC-15)
- 5.443** *Different category of service:* in Argentina, Australia and Canada, the allocation of the bands 4 825-4 835 MHz and 4 950-4 990 MHz to the radio astronomy service is on a primary basis (see No. **5.33**).
- 5.443A** (SUP - WRC-03)
- 5.443AA** In the frequency bands 5 000-5 030 MHz and 5 091-5 150 MHz, the aeronautical mobile-satellite (R) service is subject to agreement obtained under No. **9.21**. The use of these bands by the aeronautical mobile-satellite (R) service is limited to internationally standardized aeronautical systems. (WRC-12)

* *Note by the Secretariat:* This Resolution was revised by WRC-23.

- 5.443B** In order not to cause harmful interference to the microwave landing system operating above 5 030 MHz, the aggregate power flux-density produced at the Earth's surface in the frequency band 5 030-5 150 MHz by all the space stations within any radionavigation-satellite service system (space-to-Earth) operating in the frequency band 5 010-5 030 MHz shall not exceed -124.5 dB(W/m²) in a 150 kHz band. In order not to cause harmful interference to the radio astronomy service in the frequency band 4 990-5 000 MHz, radionavigation-satellite service systems operating in the frequency band 5 010-5 030 MHz shall comply with the limits in the frequency band 4 990-5 000 MHz defined in Resolution **741 (Rev.WRC-15)**. (WRC-15)
- 5.443C** The use of the frequency band 5 030-5 091 MHz by the aeronautical mobile (R) service is limited to internationally standardized aeronautical systems. Unwanted emissions from the aeronautical mobile (R) service in the frequency band 5 030-5 091 MHz shall be limited to protect RNSS system downlinks in the adjacent 5 010-5 030 MHz band. Until such time that an appropriate value is established in a relevant ITU-R Recommendation, the e.i.r.p. density limit of -75 dBW/MHz in the frequency band 5 010-5 030 MHz for any AM(R)S station unwanted emission should be used. (WRC-12)
- 5.443D** In the frequency band 5 030-5 091 MHz, the aeronautical mobile-satellite (R) service is subject to coordination under No. **9.11A**. The use of this frequency band by the aeronautical mobile-satellite (R) service is limited to internationally standardized aeronautical systems. (WRC-12)
- 5.444** The frequency band 5 030-5 150 MHz is to be used for the operation of the international standard system (microwave landing system) for precision approach and landing. In the frequency band 5 030-5 091 MHz, the requirements of this system shall have priority over other uses of this frequency band. For the use of the frequency band 5 091-5 150 MHz, No. **5.444A** and Resolution **114 (Rev.WRC-15)** apply. (WRC-15)
- 5.444A** The use of the allocation to the fixed-satellite service (Earth-to-space) in the frequency band 5 091-5 150 MHz is limited to feeder links of non-geostationary satellite systems in the mobile-satellite service and is subject to coordination under No. 9.11A. The use of the frequency band 5 091-5 150 MHz by feeder links of non-geostationary satellite systems in the mobile-satellite service shall be subject to application of Resolution 114 (Rev.WRC-15). Moreover, to ensure that the aeronautical radionavigation service is protected from harmful interference, coordination is required for feeder-link earth stations of the non-geostationary satellite systems in the mobile-satellite service which are separated by less than 450 km from the territory of an administration operating ground stations in the aeronautical radionavigation service. (WRC-15)
- 5.444B** The use of the frequency band 5 091-5 150 MHz by the aeronautical mobile service is limited to:
- systems operating in the aeronautical mobile (R) service and in accordance with international aeronautical standards, limited to surface applications at airports. Such use shall be in accordance with Resolution 748 (Rev.WRC-19);
 - aeronautical telemetry transmissions from aircraft stations (see No. 1.83) in accordance with Resolution 418 (Rev.WRC-19). (WRC-19)
- 5.445** Not used

- 5.446** *Additional allocation:* in the countries listed in No. **5.369**, the frequency band 5 150-5 216 MHz is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis, subject to agreement obtained under No. **9.21**. In Region 2 (except in Mexico), the frequency band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis. In Regions 1 and 3, except those countries listed in No. **5.369** and Bangladesh, the frequency band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a secondary basis. The use by the radiodetermination-satellite service is limited to feeder links in conjunction with the radiodetermination-satellite service operating in the frequency bands 1 610-1 626.5 MHz and/or 2 483.5-2 500 MHz. The total power flux-density at the Earth's surface shall in no case exceed -159 dB(W/m²) in any 4 kHz band for all angles of arrival. (WRC-15)
- 5.446A** The use of the frequency bands 5 150-5 350 MHz and 5 470-5 725 MHz by the stations in the mobile, except aeronautical mobile, service shall be in accordance with Resolution **229 (Rev.WRC-23)**. (WRC-23)
- 5.446B** In the band 5 150-5 250 MHz, stations in the mobile service shall not claim protection from earth stations in the fixed-satellite service. No. **5.43A** does not apply to the mobile service with respect to fixed-satellite service earth stations. (WRC-03)
- 5.446C** *Additional allocation:* in Region 1 (except in Algeria, Saudi Arabia, Bahrain, Egypt, United Arab Emirates, Iraq, Jordan, Kuwait, Lebanon, Morocco, **Oman**, Qatar, Syrian Arab Republic, Sudan, South Sudan and Tunisia), the frequency band 5 150-5 250 MHz is also allocated to the aeronautical mobile service on a primary basis, limited to aeronautical telemetry transmissions from aircraft stations (see No. **1.83**), in accordance with Resolution **418 (Rev.WRC-19)**. These stations shall not claim protection from other stations operating in accordance with Article 5. No. **5.43A** does not apply. (WRC-19)
- 5.446D** *Additional allocation:* in Brazil, the band 5 150-5 250 MHz is also allocated to the aeronautical mobile service on a primary basis, limited to aeronautical telemetry transmissions from aircraft stations (see No. **1.83**), in accordance with Resolution **418 (Rev.WRC-19)**. (WRC-19)
- 5.447** *Additional allocation:* in Côte d'Ivoire, Egypt, Lebanon, the Syrian Arab Republic and Tunisia, the frequency band 5 150-5 250 MHz is also allocated to the mobile service, on a primary basis, subject to agreement obtained under No. **9.21**. In this case, the provisions of Resolution **229 (Rev.WRC-23)** do not apply. (WRC-23)
- 5.447A** The allocation to the fixed-satellite service (Earth-to-space) in the band 5 150-5 250 MHz is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to coordination under No. **9.11A**.
- 5.447B** *Additional allocation:* the band 5 150-5 216 MHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. This allocation is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to provisions of No. **9.11A**. The power flux-density at the Earth's surface produced by space stations of the fixed-satellite service operating in the space-to-Earth direction in the band 5 150-5 216 MHz shall in no case exceed -164 dB(W/m²) in any 4 kHz band for all angles of arrival.

- 5.447C** Administrations responsible for fixed-satellite service networks in the band 5 150-5 250 MHz operated under Nos. **5.447A** and **5.447B** shall coordinate on an equal basis in accordance with No. **9.11A** with administrations responsible for non-geostationary-satellite networks operated under No. **5.446** and brought into use prior to 17 November 1995. Satellite networks operated under No. **5.446** brought into use after 17 November 1995 shall not claim protection from, and shall not cause harmful interference to, stations of the fixed-satellite service operated under Nos. **5.447A** and **5.447B**.
- 5.447D** The allocation of the band 5 250-5 255 MHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis. (WRC-97)
- 5.447E** *Additional allocation:* The frequency band 5 250-5 350 MHz is also allocated to the fixed service on a primary basis in the following countries in Region 3: Australia, Korea (Rep. of), India, Indonesia, Iran (Islamic Republic of), Japan, Malaysia, Papua New Guinea, the Philippines, Dem. People's Rep. of Korea, Sri Lanka, Thailand and Viet Nam. The use of this frequency band by the fixed service is intended for the implementation of fixed wireless access systems and shall comply with Recommendation ITU-R F.1613-0. In addition, the fixed service shall not claim protection from the radiodetermination, Earth exploration-satellite (active) and space research (active) services, but the provisions of No. **5.43A** do not apply to the fixed service with respect to the Earth exploration-satellite (active) and space research (active) services. After implementation of fixed wireless access systems in the fixed service with protection for the existing radiodetermination systems, no more stringent constraints should be imposed on the fixed wireless access systems by future radiodetermination implementations. (WRC-15)
- 5.447F** In the frequency band 5 250-5 350 MHz, stations in the mobile service shall not claim protection from the radiolocation service, the Earth exploration-satellite service (active) and the space research service (active). The radiolocation service, the Earth exploration-satellite service (active) and the space research service (active) shall not impose more stringent conditions upon the mobile service than those stipulated in Resolution **229 (Rev.WRC-23)**. (WRC-23)
- 5.448** *Additional allocation:* in Kyrgyzstan, Romania and Turkmenistan, the frequency band 5 250-5 350 MHz is also allocated to the radionavigation service on a primary basis. (WRC-19)
- 5.448A** The Earth exploration-satellite (active) and space research (active) services in the frequency band 5 250-5 350 MHz shall not claim protection from the radiolocation service. No. **5.43A** does not apply. (WRC-03)
- 5.448B** The Earth exploration-satellite service (active) operating in the band 5 350-5 570 MHz and space research service (active) operating in the band 5 460-5 570 MHz shall not cause harmful interference to the aeronautical radionavigation service in the band 5 350-5 460 MHz, the radionavigation service in the band 5 460-5 470 MHz and the maritime radionavigation service in the band 5 470-5 570 MHz. (WRC-03)
- 5.448C** The space research service (active) operating in the band 5 350-5 460 MHz shall not cause harmful interference to nor claim protection from other services to which this band is allocated. (WRC-03)
- 5.448D** In the frequency band 5 350-5 470 MHz, stations in the radiolocation service shall not cause harmful interference to, nor claim protection from, radar systems in the aeronautical radionavigation service operating in accordance with No. **5.449**. (WRC-03)

- 5.449** The use of the band 5 350-5 470 MHz by the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons.
- 5.450** *Additional allocation:* in Austria, Azerbaijan, Iran (Islamic Republic of), Kyrgyzstan, Romania, Turkmenistan and Ukraine, the band 5 470-5 650 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-12)
- 5.450A** In the frequency band 5 470-5 725 MHz, stations in the mobile service shall not claim protection from radiodetermination services. The radiodetermination services shall not impose more stringent conditions upon the mobile service than those stipulated in Resolution **229 (Rev.WRC-23)**. (WRC-23)
- 5.450B** In the frequency band 5 470-5 650 MHz, stations in the radiolocation service, except ground-based radars used for meteorological purposes in the band 5 600-5 650 MHz, shall not cause harmful interference to, nor claim protection from, radar systems in the maritime radionavigation service. (WRC-03)
- 5.451** *Additional allocation:* in the United Kingdom, the band 5 470-5 850 MHz is also allocated to the land mobile service on a secondary basis. The power limits specified in Nos. **21.2**, **21.3**, **21.4** and **21.5** shall apply in the band 5 725-5 850 MHz.
- 5.452** Between 5 600 MHz and 5 650 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the maritime radionavigation service.
- 5.453** *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Djibouti, Egypt, the United Arab Emirates, Eswatini, Gabon, Guinea, Equatorial Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kenya, Kuwait, Lebanon, Libya, Madagascar, Malaysia, Niger, Nigeria, **Oman**, Uganda, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Somalia, 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-23)** 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-23)
- 5.454** *Different category of service:* in Azerbaijan, the Russian Federation, Georgia, Kyrgyzstan, Tajikistan and Turkmenistan, the allocation of the band 5 670-5 725 MHz to the space research service is on a primary basis (see No. **5.33**). (WRC-12)
- 5.455** *Additional allocation:* in Armenia, Azerbaijan, Belarus, Cuba, the Russian Federation, Georgia, Hungary, Kazakhstan, Moldova, Uzbekistan, Kyrgyzstan, Romania, Tajikistan, Turkmenistan and Ukraine, the frequency band 5 670-5 850 MHz is also allocated to the fixed service on a primary basis. (WRC-19)
- 5.456** (SUP - WRC-15)

- 5.457** In Australia, Burkina Faso, Cote d'Ivoire, Mali and Nigeria, the allocation to the fixed service in the bands 6 440-6 520 MHz (HAPS-to-ground direction) and 6 560-6 640 MHz (ground-to-HAPS direction) may also be used by gateway links for high-altitude platform stations (HAPS) within the territory of these countries. Such use is limited to operation in HAPS gateway links and shall not cause harmful interference to, and shall not claim protection from, existing services, and shall be in compliance with Resolution **150 (WRC-12)**. Existing services shall not be constrained in future development by HAPS gateway links. The use of HAPS gateway links in these bands requires explicit agreement with other administrations whose territories are located within 1 000 kilometres from the border of an administration intending to use the HAPS gateway links. (WRC-12)
- 5.457A** In the frequency bands 5 925-6 425 MHz and 14-14.5 GHz, earth stations located on board vessels may communicate with space stations of the fixed-satellite service. Such use shall be in accordance with Resolution **902 (Rev.WRC-23)**. In the frequency band 5 925-6 425 MHz, earth stations located on board vessels and communicating with space stations of the fixed-satellite service may employ transmit antennas with minimum diameter of 1.2 m and operate without prior agreement of any administration if located at least 330 km away from the low-water mark as officially recognized by the coastal State. All other provisions of Resolution **902 (Rev.WRC-23)** shall apply. (WRC-23)
- 5.457B** In the frequency bands 5 925-6 425 MHz and 14-14.5 GHz, earth stations located on board vessels may operate with the characteristics and under the conditions contained in Resolution **902 (Rev.WRC-23)** in Algeria, Saudi Arabia, Bahrain, Comoros, Djibouti, Egypt, United Arab Emirates, Jordan, Kuwait, Libya, Morocco, Mauritania, **Oman**, Qatar, the Syrian Arab Republic, Sudan, Tunisia and Yemen, in the maritime mobile-satellite service on a secondary basis. Such use shall be in accordance with Resolution **902 (Rev.WRC-23)**. (WRC-23)
- 5.457C** In Region 2 (except Brazil, Cuba, French overseas departments and communities, Guatemala, Mexico, Paraguay, Uruguay and Venezuela), the frequency band 5 925-6 700 MHz may be used for aeronautical mobile telemetry for flight testing by aircraft stations (see No. **1.83**). Such use shall be in accordance with Resolution **416 (WRC-07)** and shall not cause harmful interference to, or claim protection from, the fixed-satellite and fixed services. Any such use does not preclude the use of this frequency band by other mobile service applications or by other services to which this frequency band is allocated on a co-primary basis and does not establish priority in the Radio Regulations. (WRC-15)
- 5.457D** In Cambodia, Lao P.D.R. and the Maldives, the frequency band 6 425-7 025 MHz is identified for the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Resolution **220 (WRC-23)** applies. (WRC-23)
- 5.457E** The frequency bands 6 425-7 125 MHz in Region 1 and 7 025-7 125 MHz in Region 3 are identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. Resolution **220 (WRC-23)** applies.
- The frequency bands are also used for the implementation of wireless access systems (WAS), including radio local area networks (RLANs). (WRC-23)

- 5.457F** In Brazil and Mexico, the frequency band 6 425-7 125 MHz is identified for the terrestrial component of International Mobile Telecommunications (IMT). The use of this frequency band for the implementation of IMT is subject to seeking agreement under No. **9.21** with neighbouring countries. 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 **220 (WRC-23)** applies.
- The frequency band is also used for the implementation of wireless access systems (WAS), including radio local area networks (RLANs). (WRC-23)
- 5.458** In the band 6 425-7 075 MHz, passive microwave sensor measurements are carried out over the oceans. In the band 7 075-7 250 MHz, passive microwave sensor measurements are carried out. Administrations should bear in mind the needs of the Earth exploration-satellite (passive) and space research (passive) services in their future planning of the bands 6 425-7 075 MHz and 7 075-7 250 MHz.
- 5.458A** In making assignments in the band 6 700-7 075 MHz to space stations of the fixed-satellite service, administrations are urged to take all practicable steps to protect spectral line observations of the radio astronomy service in the band 6 650-6 675.2 MHz from harmful interference from unwanted emissions.
- 5.458B** The space-to-Earth allocation to the fixed-satellite service in the band 6 700-7 075 MHz is limited to feeder links for non-geostationary satellite systems of the mobile-satellite service and is subject to coordination under No. **9.11A**. The use of the band 6 700-7 075 MHz (space-to-Earth) by feeder links for non-geostationary satellite systems in the mobile-satellite service is not subject to No. **22.2**.
- 5.458C** (SUP - WRC-15)
- 5.459** *Additional allocation:* in the Russian Federation, the frequency bands 7 100-7 155 MHz and 7 190-7 235 MHz are also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. **9.21**. In the frequency band 7 190-7 235 MHz, with respect to the Earth exploration-satellite service (Earth-to-space), No. **9.21** does not apply. (WRC-15)
- 5.460** No emissions from space research service (Earth-to-space) systems intended for deep space shall be effected in the frequency band 7 190-7 235 MHz. Geostationary satellites in the space research service operating in the frequency band 7 190-7 235 MHz shall not claim protection from existing and future stations of the fixed and mobile services and No. **5.43A** does not apply. (WRC-15)
- 5.460A** The use of the frequency band 7 190-7 250 MHz (Earth-to-space) by the Earth exploration-satellite service shall be limited to tracking, telemetry and command for the operation of spacecraft. Space stations operating in the Earth exploration-satellite service (Earth-to-space) in the frequency band 7 190-7 250 MHz shall not claim protection from existing and future stations in the fixed and mobile services, and No. **5.43A** does not apply. No. **9.17** applies. Additionally, to ensure protection of the existing and future deployment of fixed and mobile services, the location of earth stations supporting spacecraft in the Earth exploration-satellite service in non-geostationary orbits or geostationary orbit shall maintain a separation distance of at least 10 km and 50 km, respectively, from the respective border(s) of neighbouring countries, unless a shorter distance is otherwise agreed between the corresponding administrations. (WRC-15)

- 5.460B** Space stations on the geostationary orbit operating in the Earth exploration-satellite service (Earth-to-space) in the frequency band 7 190-7 235 MHz shall not claim protection from existing and future stations of the space research service, and No. **5.43A** does not apply. (WRC-15)
- 5.461** *Additional allocation:* the frequency bands 7 250-7 375 MHz (space-to-Earth) and 7 900-8 025 MHz (Earth-to-space) are also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. **9.21**, with the exception that No. **9.21** shall not apply to the geostationary-satellite networks in the mobile-satellite service for which complete coordination information is received by the Bureau as of 1 January 2025 with respect to non-geostationary-satellite systems for which complete coordination or notification information, according to the case, is received by the Bureau as of 1 January 2025. Non-geostationary-satellite systems for which complete coordination or notification information, according to the case, is received by the Bureau as of 1 January 2025 shall not cause unacceptable interference to and shall not claim protection from geostationary-satellite networks in the mobile-satellite service **operating in accordance with these Regulations**. No. **5.43A** does not apply. (WRC-23)
- 5.461A** The use of the band 7 450-7 550 MHz by the meteorological-satellite service (space-to-Earth) is limited to geostationary-satellite systems. (WRC-23)
- 5.461AA** The use of the frequency band 7 375-7 750 MHz by the maritime mobile-satellite service is limited to geostationary-satellite networks. (WRC-15)
- 5.461AB** In the frequency band 7 375-7 750 MHz, earth stations in the maritime mobile-satellite service shall not claim protection from, nor constrain the use and development of, stations in the fixed and mobile, except aeronautical mobile, services. No. **5.43A** does not apply. (WRC-15)
- 5.461AC** In the frequency band 7 375-7 750 MHz, non-geostationary-satellite systems operating in the fixed-satellite service for which complete coordination or notification information, according to the case, is received by the Bureau as of 1 January 2025 shall not cause unacceptable interference to and shall not claim protection from geostationary-satellite networks in the maritime mobile-satellite service operating in accordance with these Regulations. No. **5.43A** does not apply. (WRC-23)
- 5.461B** The use of the band 7 750-7 900 MHz by the meteorological-satellite service (space-to-Earth) is limited to non-geostationary satellite systems. (WRC-12)
- 5.462** (SUP- WRC-97)
- 5.462A** In Regions 1 and 3 (except for Japan), in the band 8 025-8 400 MHz, the Earth exploration-satellite service using geostationary satellites shall not produce a power flux-density in excess of the following values for angles of arrival (θ), without the consent of the affected administration:
- | | |
|---|------------------------------------|
| -135 dB(W/m ²) in a 1 MHz band | for $0 \leq \theta < 5^\circ$ |
| -135 + 0.5 ($\theta - 5$) dB(W/m ²) in a 1 MHz band | for $5 \leq \theta < 25^\circ$ |
| -125 dB(W/m ²) in a 1 MHz band | for $25 \leq \theta \leq 90^\circ$ |
- 5.463** Aircraft stations are not permitted to transmit in the band 8 025-8 400 MHz. (WRC-97)
- 5.464** (SUP- WRC-97)
- 5.465** In the space research service, the use of the band 8 400-8 450 MHz is limited to deep space.

- 5.466** *Different category of service:* in Singapore and Sri Lanka, the allocation of the band 8 400-8 500 MHz to the space research service is on a secondary basis (see No. **5.32**). (WRC-12)
- 5.467** (SUP - WRC-03)
- 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)
- 5.469** *Additional allocation:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Hungary, Lithuania, Uzbekistan, Poland, Kyrgyzstan, the Czech Rep., Romania, Tajikistan, Turkmenistan and Ukraine, the frequency band 8 500-8 750 MHz is also allocated to the land mobile and radionavigation services on a primary basis. (WRC-23)
- 5.469A** In the band 8 550-8 650 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radiolocation service. (WRC-97)
- 5.470** The use of the band 8 750-8 850 MHz by the aeronautical radionavigation service is limited to airborne Doppler navigation aids on a centre frequency of 8 800 MHz.
- 5.471** *Additional allocation:* in Algeria, Germany, Bahrain, Belgium, China, Egypt, the United Arab Emirates, France, Greece, Indonesia, Iran (Islamic Republic of), Libya, the Netherlands, Qatar and Sudan, the frequency bands 8 825-8 850 MHz and 9 000-9 200 MHz are also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars only. (WRC-15)
- 5.472** In the bands 8 850-9 000 MHz and 9 200-9 225 MHz, the maritime radionavigation service is limited to shore-based radars.
- 5.473** *Additional allocation:* in Armenia, Austria, Azerbaijan, Belarus, Cuba, the Russian Federation, Georgia, Hungary, Uzbekistan, Poland, Kyrgyzstan, Romania, Tajikistan, Turkmenistan and Ukraine, the frequency bands 8 850-9 000 MHz and 9 200-9 300 MHz are also allocated to the radionavigation service on a primary basis. (WRC-19)
- 5.473A** In the band 9 000-9 200 MHz, stations operating in the radiolocation service shall not cause harmful interference to, nor claim protection from, systems identified in No. **5.337** operating in the aeronautical radionavigation service, or radar systems in the maritime radionavigation service operating in this band on a primary basis in the countries listed in No. **5.471**. (WRC-07)
- 5.474** In the band 9 200-9 500 MHz, search and rescue transponders (SART) may be used, having due regard to the appropriate ITU-R Recommendation (see also Article **31**).

- 5.474A** The use of the frequency bands 9 200-9 300 MHz and 9 900-10 400 MHz by the Earth exploration-satellite service (active) is limited to systems requiring necessary bandwidth greater than 600 MHz that cannot be fully accommodated within the frequency band 9 300-9 900 MHz. Such use is subject to agreement to be obtained under No. **9.21** from Algeria, Saudi Arabia, Bahrain, Egypt, Indonesia, Iran (Islamic Republic of), Lebanon and Tunisia. An administration that has not replied under No. **9.52** is considered as not having agreed to the coordination request. In this case, the notifying administration of the satellite system operating in the Earth exploration-satellite service (active) may request the assistance of the Bureau under Sub-Section IID of Article **9**. (WRC-15)
- 5.474B** Stations operating in the Earth exploration-satellite (active) service shall comply with Recommendation ITU-R RS.2066-0. (WRC-15)
- 5.474C** Stations operating in the Earth exploration-satellite (active) service shall comply with Recommendation ITU-R RS.2065-0. (WRC-15)
- 5.474D** Stations in the Earth exploration-satellite service (active) shall not cause harmful interference to, or claim protection from, stations of the maritime radionavigation and radiolocation services in the frequency band 9 200-9 300 MHz, the radionavigation and radiolocation services in the frequency band 9 900-10 000 MHz and the radiolocation service in the frequency band 10.0-10.4 GHz. (WRC-15)
- 5.475** The use of the band 9 300-9 500 MHz by the aeronautical radionavigation service is limited to airborne weather radars and ground-based radars. In addition, ground-based radar beacons in the aeronautical radionavigation service are permitted in the band 9 300-9 320 MHz on condition that harmful interference is not caused to the maritime radionavigation service. (WRC-07)
- 5.475A** The use of the band 9 300-9 500 MHz by the Earth exploration-satellite service (active) and the space research service (active) is limited to systems requiring necessary bandwidth greater than 300 MHz that cannot be fully accommodated within the 9 500-9 800 MHz band. (WRC-07)
- 5.475B** In the band 9 300-9 500 MHz, stations operating in the radiolocation service shall not cause harmful interference to, nor claim protection from, radars operating in the radionavigation service in conformity with the Radio Regulations. Ground-based radars used for meteorological purposes have priority over other radiolocation uses. (WRC-07)
- 5.476** (SUP - WRC-07)
- 5.476A** In the band 9 300-9 800 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, nor claim protection from, stations of the radionavigation and radiolocation services. (WRC-07)
- 5.477** *Different category of service:* in Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, Djibouti, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Japan, Jordan, Kuwait, Lebanon, Liberia, Malaysia, Nigeria, **Oman**, Uganda, Pakistan, Qatar, Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, South Sudan, Trinidad and Tobago, and Yemen, the allocation of the frequency band 9 800-10 000 MHz to the fixed service is on a primary basis (see No. **5.33**). (WRC-15)
- 5.478** *Additional allocation:* in Azerbaijan, Kyrgyzstan, Romania, Turkmenistan and Ukraine, the frequency band 9 800-10 000 MHz is also allocated to the radionavigation service on a primary basis. (WRC-19)

- 5.478A** The use of the band 9 800-9 900 MHz by the Earth exploration-satellite service (active) and the space research service (active) is limited to systems requiring necessary bandwidth greater than 500 MHz that cannot be fully accommodated within the 9 300-9 800 MHz band. (WRC-07)
- 5.478B** In the band 9 800-9 900 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, nor claim protection from stations of the fixed service to which this band is allocated on a secondary basis. (WRC-07)
- 5.479** The band 9 975-10 025 MHz is also allocated to the meteorological-satellite service on a secondary basis for use by weather radars.
- 5.480** *Additional allocation:* in Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, the Dominican Republic, El Salvador, Ecuador, Guatemala, Honduras, Jamaica, Mexico, Paraguay, the overseas countries and territories within the Kingdom of the Netherlands in Region 2, Peru, Suriname and Uruguay, the frequency band 10-10.45 GHz is also allocated to the fixed and mobile services on a primary basis. In Venezuela, the frequency band 10-10.45 GHz is also allocated to the fixed service on a primary basis. (WRC-23)
- 5.480A** In the following countries in Region 2: Brazil, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, Guatemala, Jamaica, Mexico, Paraguay, Peru and Uruguay, the frequency band 10-10.5 GHz is identified for the implementation of the terrestrial component of International Mobile Telecommunications (IMT). The implementation of this identification in Mexico is subject to seeking agreement with the United States under No. **9.21**. The use of the frequency band 10-10.5 GHz by IMT stations in the mobile service shall not claim protection from systems in 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. Resolution **219 (WRC-23)** applies. (WRC-23)
- 5.481** *Additional allocation:* in Algeria, Germany, Angola, Brazil, China, Colombia, Costa Rica, Côte d'Ivoire, Cuba, Djibouti, the Dominican Republic, Egypt, El Salvador, Ecuador, Spain, Guatemala, Hungary, Jamaica, Japan, Kenya, Morocco, Mexico, Nigeria, **Oman**, Uzbekistan, Pakistan, Palestine*, Paraguay, Peru, the Dem. People's Rep. of Korea, Romania, Somalia, Suriname, Tunisia and Uruguay, the frequency band 10.45-10.5 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-23)
- 5.482** In the band 10.6-10.68 GHz, the power delivered to the antenna of stations of the fixed and mobile, except aeronautical mobile, services shall not exceed –3 dBW. This limit may be exceeded, subject to agreement obtained under No. **9.21**. However, in Algeria, Saudi Arabia, Armenia, Azerbaijan, Bahrain, Bangladesh, Belarus, Egypt, United Arab Emirates, Georgia, India, Indonesia, Iran (Islamic Republic of), Iraq, Jordan, Kazakhstan, Kuwait, Lebanon, Libya, Morocco, Mauritania, Moldova, Nigeria, **Oman**, Uzbekistan, Pakistan, Philippines, Qatar, Syrian Arab Republic, Kyrgyzstan, Singapore, Tajikistan, Tunisia, Turkmenistan and Viet Nam, this restriction on the fixed and mobile, except aeronautical mobile, services is not applicable. (WRC-07)
- 5.482A** For sharing of the band 10.6-10.68 GHz between the Earth exploration-satellite (passive) service and the fixed and mobile, except aeronautical mobile, services, Resolution **751 (WRC-07)** applies. (WRC-07)

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

- 5.483** *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, China, Colombia, Korea (Rep. of), Egypt, the United Arab Emirates, Georgia, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kazakhstan, Kuwait, Lebanon, Mongolia, Qatar, Kyrgyzstan, the Dem. People's Rep. of Korea, Tajikistan, Turkmenistan and Yemen, the frequency band 10.68-10.7 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985. (WRC-19)
- 5.484** In Region 1, the use of the band 10.7-11.7 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.
- 5.484A** The use of the frequency bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.75 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Region 1, 13.75-14.5 GHz (Earth-to-space), 17.3-17.7 GHz (space-to-Earth) in Region 2, 17.8-18.6 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 27.5-28.6 GHz (Earth-to-space), 29.5-30 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. In Region 2, No. **22.2** shall continue to apply in the frequency band 17.3-17.7 GHz. (WRC-23)
- 5.484B** Resolution **155 (WRC-15)** shall apply. (WRC-15)
- 5.485** In Region 2, in the band 11.7-12.2 GHz, transponders on space stations in the fixed-satellite service may be used additionally for transmissions in the broadcasting-satellite service, provided that such transmissions do not have a maximum e.i.r.p. greater than 53 dBW per television channel and do not cause greater interference or require more protection from interference than the coordinated fixed-satellite service frequency assignments. With respect to the space services, this band shall be used principally for the fixed-satellite service.
- 5.486** *Different category of service:* in the United States, the allocation of the frequency band 11.7-12.1 GHz to the fixed service is on a secondary basis (see No. **5.32**). (WRC-15)
- 5.487** In the band 11.7-12.5 GHz in Regions 1 and 3, the fixed, fixed-satellite, mobile, except aeronautical mobile, and broadcasting services, in accordance with their respective allocations, shall not cause harmful interference to, or claim protection from, broadcasting-satellite stations operating in accordance with the Regions 1 and 3 Plan in Appendix **30**. (WRC-03)

- 5.487A** *Additional allocation:* in Region 1, the band 11.7-12.5 GHz, in Region 2, the band 12.2-12.7 GHz and, in Region 3, the band 11.7-12.2 GHz, are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis, limited to non-geostationary systems and subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the broadcasting-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-03)
- 5.488** The use of the band 11.7-12.2 GHz by geostationary-satellite networks in the fixed-satellite service in Region 2 is subject to application of the provisions of No. **9.14** for coordination with stations of terrestrial services in Regions 1, 2 and 3. For the use of the band 12.2-12.7 GHz by the broadcasting-satellite service in Region 2, see Appendix **30**. (WRC-03)
- 5.489** *Additional allocation:* in Peru, the band 12.1-12.2 GHz is also allocated to the fixed service on a primary basis.
- 5.490** In Region 2, in the band 12.2-12.7 GHz, existing and future terrestrial radiocommunication services shall not cause harmful interference to the space services operating in conformity with the broadcasting-satellite Plan for Region 2 contained in Appendix **30**.
- 5.491** (SUP - WRC-03)
- 5.492** Assignments to stations of the broadcasting-satellite service which are in conformity with the appropriate regional Plan or included in the Regions 1 and 3 List in Appendix **30** may also be used for transmissions in the fixed-satellite service (space-to-Earth), provided that such transmissions do not cause more interference, or require more protection from interference, than the broadcasting-satellite service transmissions operating in conformity with the Plan or the List, as appropriate. (WRC-2000)
- 5.493** The broadcasting-satellite service in the band 12.5-12.75 GHz in Region 3 is limited to a power flux-density not exceeding $-111 \text{ dB(W)/(m}^2 \cdot 27 \text{ MHz)}$ for all conditions and for all methods of modulation at the edge of the service area. (WRC-97)
- 5.494** *Additional allocation:* in Algeria, Saudi Arabia, Bahrain, Cameroon, the Central African Rep., Congo (Rep. of the), Côte d'Ivoire, Djibouti, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Gabon, Ghana, Guinea, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Madagascar, Mali, Morocco, Mongolia, Nigeria, **Oman**, Palestine*, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, Somalia, Sudan, South Sudan, Chad, Togo and Yemen, the frequency band 12.5-12.75 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-23)

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

- 5.495** *Additional allocation:* in Greece, Monaco, Montenegro, Uganda and Tunisia, the frequency band 12.5-12.75 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis. (WRC-19)
- 5.496** *Additional allocation:* in Austria, Azerbaijan, Kyrgyzstan and Turkmenistan, the band 12.5-12.75 GHz is also allocated to the fixed service and the mobile, except aeronautical mobile, service on a primary basis. However, stations in these services shall not cause harmful interference to fixed-satellite service earth stations of countries in Region 1 other than those listed in this footnote. Coordination of these earth stations is not required with stations of the fixed and mobile services of the countries listed in this footnote. The power flux-density limit at the Earth's surface given in Table **21-4** of Article **21**, for the fixed-satellite service shall apply on the territory of the countries listed in this footnote. (WRC-2000)
- 5.496A** The frequency band 12.75-13.25 GHz (Earth-to-space) may be used by earth stations in motion, limited to earth stations on aircraft and vessels, communicating with geostationary space stations in the fixed-satellite service. Resolution **121 (WRC-23)** shall apply. (WRC-23)
- 5.497** The use of the band 13.25-13.4 GHz by the aeronautical radionavigation service is limited to Doppler navigation aids.
- 5.498** (SUP - WRC-97)
- 5.498A** The Earth exploration-satellite (active) and space research (active) services operating in the band 13.25-13.4 GHz shall not cause harmful interference to, or constrain the use and development of, the aeronautical radionavigation service. (WRC-97)
- 5.499** *Additional allocation:* in Bangladesh and India, the band 13.25-14 GHz is also allocated to the fixed service on a primary basis. In Pakistan, the band 13.25-13.75 GHz is allocated to the fixed service on a primary basis. (WRC-12)
- 5.499A** The use of the frequency band 13.4-13.65 GHz by the fixed-satellite service (space-to-Earth) is limited to geostationary-satellite systems and is subject to agreement obtained under No. **9.21** with respect to satellite systems operating in the space research service (space-to-space) to relay data from space stations in the geostationary-satellite orbit to associated space stations in non-geostationary satellite orbits for which advance publication information has been received by the Bureau by 27 November 2015. (WRC-15)
- 5.499B** Administrations shall not preclude the deployment and operation of transmitting earth stations in the standard frequency and time signal-satellite service (Earth-to-space) allocated on a secondary basis in the frequency band 13.4-13.65 GHz due to the primary allocation to FSS (space-to-Earth). (WRC-15)
- 5.499C** The allocation of the frequency band 13.4-13.65 GHz to the space research service on a primary basis is limited to:
- satellite systems operating in the space research service (space-to-space) to relay data from space stations in the geostationary-satellite orbit to associated space stations in non-geostationary satellite orbits for which advance publication information has been received by the Bureau by 27 November 2015,
 - active spaceborne sensors,
 - satellite systems operating in the space research service (space-to-Earth) to relay data from space stations in the geostationary-satellite orbit to associated earth stations.

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

- 5.499D** In the frequency band 13.4-13.65 GHz, satellite systems in the space research service (space-to-Earth) and/or the space research service (space-to-space) shall not cause harmful interference to, nor claim protection from, stations in the fixed, mobile, radiolocation and Earth exploration-satellite (active) services. (WRC-15)
- 5.499E** In the frequency band 13.4-13.65 GHz, geostationary-satellite networks in the fixed-satellite service (space-to-Earth) shall not claim protection from space stations in the Earth exploration-satellite service (active) operating in accordance with these Regulations, and No. **5.43A** does not apply. The provisions of No. **22.2** do not apply to the Earth exploration-satellite service (active) with respect to the fixed-satellite service (space-to-Earth) in this frequency band. (WRC-15)
- 5.500** *Additional allocation:* in Algeria, Saudi Arabia, Bahrain, Brunei Darussalam, Cameroon, Djibouti, Egypt, the United Arab Emirates, Gabon, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Madagascar, Malaysia, Mali, Morocco, Mauritania, Niger, Nigeria, **Oman**, Qatar, the Syrian Arab Republic, Singapore, Somalia, Sudan, South Sudan, Chad and Tunisia, the frequency band 13.4-14 GHz is also allocated to the fixed and mobile services on a primary basis. In Pakistan, the frequency band 13.4-13.75 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-23)
- 5.501** *Additional allocation:* in Hungary, Japan, Kyrgyzstan, Romania and Turkmenistan, the frequency band 13.4-14 GHz is also allocated to the radionavigation service on a primary basis. (WRC-23)
- 5.501A** The allocation of the frequency band 13.65-13.75 GHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the frequency band by the space research service are on a secondary basis. (WRC-15)
- 5.501B** In the band 13.4-13.75 GHz, the Earth exploration-satellite (active) and space research (active) services shall not cause harmful interference to, or constrain the use and development of, the radiolocation service. (WRC-97)
- 5.502** In the band 13.75-14 GHz, an earth station of a geostationary fixed-satellite service network shall have a minimum antenna diameter of 1.2 m and an earth station of a non-geostationary fixed-satellite service system shall have a minimum antenna diameter of 4.5 m. In addition, the e.i.r.p., averaged over one second, radiated by a station in the radiolocation or radionavigation services shall not exceed 59 dBW for elevation angles above 2° and 65 dBW at lower angles. Before an administration brings into use an earth station in a geostationary-satellite network in the fixed-satellite service in this band with an antenna diameter smaller than 4.5 m, it shall ensure that the power flux-density produced by this earth station does not exceed:
- $-115 \text{ dB(W/(m}^2 \cdot 10 \text{ MHz))}$ for more than 1% of the time produced at 36 m above sea level at the low water mark, as officially recognized by the coastal State;
 - $-115 \text{ dB(W/(m}^2 \cdot 10 \text{ MHz))}$ for more than 1% of the time produced 3 m above ground at the border of the territory of an administration deploying or planning to deploy land mobile radars in this band, unless prior agreement has been obtained.
- For earth stations within the fixed-satellite service having an antenna diameter greater than or equal to 4.5 m, the e.i.r.p. of any emission should be at least 68 dBW and should not exceed 85 dBW. (WRC-03)

- 5.503** In the band 13.75-14 GHz, geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 shall operate on an equal basis with stations in the fixed-satellite service; after that date, new geostationary space stations in the space research service will operate on a secondary basis. Until those geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 cease to operate in this band:
- in the band 13.77-13.78 GHz, the e.i.r.p. density of emissions from any earth station in the fixed satellite service operating with a space station in geostationary-satellite orbit shall not exceed:
 - i) $4.7D + 28 \text{ dB(W/40 kHz)}$, where D is the fixed-satellite service earth station antenna diameter (m) for antenna diameters equal to or greater than 1.2 m and less than 4.5 m;
 - ii) $49.2 + 20 \log(D/4.5) \text{ dB(W/40 kHz)}$, where D is the fixed-satellite service earth station antenna diameter (m) for antenna diameters equal to or greater than 4.5 m and less than 31.9 m;
 - iii) 66.2 dB (W/40 kHz) for any fixed-satellite service earth station for antenna diameters (m) equal to or greater than 31.9 m;
 - iv) 56.2 dB (W/4 kHz) for narrow-band (less than 40 kHz of necessary bandwidth) fixed-satellite service earth station emissions from any fixed-satellite service earth station having an antenna diameter of 4.5 m or greater;
 - the e.i.r.p. density of emissions from any earth station in the fixed-satellite service operating with a space station in non-geostationary-satellite orbit shall not exceed 51 dBW in the 6 MHz band from 13.772 to 13.778 GHz.

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

5.503A

(SUP - WRC-03)

5.504

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

5.504A

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

5.504B

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

5.504C

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

- 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)
- 5.506** The band 14-14.5 GHz may be used, within the fixed-satellite service (Earth-to-space), for feeder links for the broadcasting-satellite service, subject to coordination with other networks in the fixed-satellite service. Such use of feeder links is reserved for countries outside Europe.
- 5.506A** In the frequency band 14-14.5 GHz, ship earth stations with an equivalent isotropically radiated power (e.i.r.p.) greater than 21 dBW shall operate under the same conditions as earth stations located on board vessels, as provided in Resolution **902 (Rev.WRC-23)**. This footnote shall not apply to ship earth stations for which the complete Appendix **4** information has been received by the Bureau prior to 5 July 2003. (WRC-23)
- 5.506B** Earth stations located on board vessels communicating with space stations in the fixed-satellite service may operate in the frequency band 14-14.5 GHz without the need for prior agreement from Cyprus and Malta, within the minimum distance given in Resolution **902 (Rev.WRC-23)** from these countries. (WRC-23)
- 5.507** Not used.
- 5.508** *Additional allocation:* in Germany, Italy, Libya, North Macedonia and the United Kingdom, the frequency band 14.25-14.3 GHz is also allocated to the fixed service on a primary basis. (WRC-23)
- 5.508A** In the frequency band 14.25-14.3 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Bahrain, Botswana, China, Côte d'Ivoire, Egypt, Guinea, India, Iran (Islamic Republic of), Italy, Kuwait, Nigeria, **Oman**, the Syrian Arab Republic, the United Kingdom and Tunisia by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1, Part B of Recommendation ITU-R M.1643-0, unless otherwise specifically agreed by the affected administration(s). The provisions of this footnote in no way derogate the obligations of the aeronautical mobile-satellite service to operate as a secondary service in accordance with No. **5.29**. (WRC-23)
- 5.509** (SUP - WRC-07)
- 5.509A** In the frequency band 14.3-14.5 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Bahrain, Botswana, Cameroon, China, Côte d'Ivoire, Egypt, Gabon, Guinea, India, Iran (Islamic Republic of), Italy, Kuwait, Morocco, Nigeria, **Oman**, the Syrian Arab Republic, the United Kingdom, Sri Lanka, Tunisia and Viet Nam by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1, Part B of Recommendation ITU-R M.1643-0, unless otherwise specifically agreed by the affected administration(s). The provisions of this footnote in no way derogate the obligations of the aeronautical mobile-satellite service to operate as a secondary service in accordance with No. **5.29**. (WRC-23)
- 5.509B** The use of the frequency bands 14.5-14.75 GHz in countries listed in Resolution **163 (WRC-15)** and 14.5-14.8 GHz in countries listed in Resolution **164 (WRC-15)** by the fixed-

satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service is limited to geostationary-satellites. (WRC-15)

- 5.509C** For the use of the frequency bands 14.5-14.75 GHz in countries listed in Resolution **163 (WRC-15)** and 14.5-14.8 GHz in countries listed in Resolution **164 (WRC-15)** by the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service, the fixed-satellite service earth stations shall have a minimum antenna diameter of 6 m and a maximum power spectral density of -44.5 dBW/Hz at the input of the antenna. The earth stations shall be notified at known locations on land. (WRC-15)
- 5.509D** Before an administration brings into use an earth station in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service in the frequency bands 14.5-14.75 GHz (in countries listed in Resolution **163 (WRC-15)**) and 14.5-14.8 GHz (in countries listed in Resolution **164 (WRC-15)**), it shall ensure that the power flux-density produced by this earth station does not exceed -151.5 dB(W/($m^2 \cdot 4$ kHz)) produced at all altitudes from 0 m to 19 000 m above sea level at 22 km seaward from all coasts, defined as the low-water mark, as officially recognized by each coastal State. (WRC-15)
- 5.509E** In the frequency bands 14.5-14.75 GHz in countries listed in Resolution **163 (WRC-15)** and 14.5-14.8 GHz in countries listed in Resolution **164 (WRC-15)**, the location of earth stations in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service shall maintain a separation distance of at least 500 km from the border(s) of other countries unless shorter distances are explicitly agreed by those administrations. No. **9.17** does not apply. When applying this provision, administrations should consider the relevant parts of these Regulations and the latest relevant ITU-R Recommendations. (WRC-23)
- 5.509F** In the frequency bands 14.5-14.75 GHz in countries listed in Resolution **163 (WRC-15)** and 14.5-14.8 GHz in countries listed in Resolution **164 (WRC-15)**, earth stations in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service shall not constrain the future deployment of the fixed and mobile services. (WRC-23)
- 5.509G** The frequency band 14.5-14.8 GHz is also allocated to the space research service on a primary basis. However, such use is limited to the satellite systems operating in the space research service (Earth-to-space) to relay data to space stations in the geostationary-satellite orbit from associated earth stations. Stations in the space research service shall not cause harmful interference to, or claim protection from, stations in the fixed and mobile services and in the fixed-satellite service limited to feeder links for the broadcasting-satellite service and associated space operations functions using the guardbands under Appendix **30A** and feeder links for the broadcasting-satellite service in Region 2. Other uses of this frequency band by the space research service are on a secondary basis. (WRC-15)
- 5.510** Except for use in accordance with Resolution **163 (WRC-15)** and Resolution **164 (WRC-15)**, the use of the frequency band 14.5-14.8 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. This use is reserved for countries outside Europe. Uses other than feeder links for the broadcasting-satellite service are not authorized in Regions 1 and 2 in the frequency band 14.75-14.8 GHz. (WRC-15)

- 5.510A** The allocation of the frequency band 14.8-15.35 GHz to the space research service on a primary basis is limited to satellite systems operating in the space-to-space, space-to-Earth and Earth-to-space directions at distances from the Earth of less than 2×10^6 km in accordance with Resolution **678 (WRC-23)**. Other uses of the frequency band by the space research service are on a secondary basis. The use of the frequency band 14.8-15.35 GHz by the space research service (space-to-Earth) (Earth-to-space) is on a secondary basis with respect to the terrestrial services in Algeria, Saudi Arabia, Bahrain, Korea (Rep. of), Egypt, the United Arab Emirates, the United States, India, Iraq, Japan, Kuwait, Libya, Morocco, Mauritania, **Oman**, Qatar, the Syrian Arab Republic, Tunisia and Yemen. (WRC-23)
- 5.511** *Additional allocation:* in Saudi Arabia, Bahrain, Cameroon, Djibouti, Egypt, the United Arab Emirates, Guinea, Iran (Islamic Republic of), Iraq, Israel, Kuwait, Lebanon, **Oman**, Pakistan, Qatar, the Syrian Arab Republic and Somalia, the frequency band 15.35-15.4 GHz is also allocated to the fixed and mobile services on a secondary basis. (WRC-23)
- 5.511A** Use of the frequency band 15.43-15.63 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links of non-geostationary systems in the mobile-satellite service, subject to coordination under No. **9.11A**. (WRC-15)
- 5.511B** (SUP- WRC-97)
- 5.511C** Stations operating in the aeronautical radionavigation service shall limit the effective e.i.r.p. in accordance with Recommendation ITU-R S.1340-0. The minimum coordination distance required to protect the aeronautical radionavigation stations (No. **4.10** applies) from harmful interference from feeder-link earth stations and the maximum e.i.r.p. transmitted towards the local horizontal plane by a feeder-link earth station shall be in accordance with Recommendation ITU-R S.1340-0. (WRC-15)
- 5.511D** (SUP - WRC-15)
- 5.511E** In the frequency band 15.4-15.7 GHz, stations operating in the radiolocation service shall not cause harmful interference to, or claim protection from, stations operating in the aeronautical radionavigation service. (WRC-12)
- 5.511F** In order to protect the radio astronomy service in the frequency band 15.35-15.4 GHz, radiolocation stations operating in the frequency band 15.4-15.7 GHz shall not exceed the power flux-density level of -156 dB(W/m²) in a 50 MHz bandwidth in the frequency band 15.35-15.4 GHz, at any radio astronomy observatory site for more than 2 per cent of the time. (WRC-12)
- 5.511G** Stations in the aeronautical mobile (OR) service operating in the frequency band 15.41-15.7 GHz shall not cause harmful interference to the radio astronomy service operating in the frequency band 15.35-15.4 GHz. The aggregate power flux-density (pfd) received from stations in the aeronautical mobile (OR) service operating in the frequency band 15.41-15.7 GHz at any radio astronomy station operating in the frequency band 15.35-15.4 GHz shall be in compliance with the protection criteria provided in Recommendations ITU-R RA.769-2 and ITU-R RA.1513-2, unless specifically agreed by the affected administration(s). (WRC-23)
- 5.511H** *Additional allocation:* in Indonesia, the frequency band 15.41-15.7 GHz is also allocated to the aeronautical mobile (OR) service on a secondary basis. Stations in the aeronautical mobile (OR) service operating in the frequency band 15.41-15.7 GHz shall not cause harmful interference to the radio astronomy service operating in the frequency band 15.35-15.4 GHz. The aggregate power flux-density (pfd) received from stations in the

aeronautical mobile (OR) service operating in the frequency band 15.41-15.7 GHz at any radio astronomy station operating in the frequency band 15.35-15.4 GHz shall be in compliance with the protection criteria provided in Recommendations ITU-R RA.769-2 and ITU-R RA.1513-2, unless specifically agreed by the affected administration(s). (WRC-23)

- 5.512** *Additional allocation:* in Algeria, Saudi Arabia, Austria, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, Congo (Rep. of the), Egypt, El Salvador, the United Arab Emirates, Eritrea, Finland, Guatemala, India, Indonesia, Iran (Islamic Republic of), Jordan, Kenya, Kuwait, Lebanon, Libya, Malaysia, Mali, Morocco, Mauritania, Montenegro, Nepal, Nicaragua, Niger, **Oman**, Pakistan, Qatar, Syrian Arab Republic, the Dem. Rep. of the Congo, Singapore, Somalia, Sudan, South Sudan, Chad, Togo and Yemen, the frequency band 15.7-17.3 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-15)
- 5.513** *Additional allocation:* in Israel, the band 15.7-17.3 GHz is also allocated to the fixed and mobile services on a primary basis. These services shall not claim protection from or cause harmful interference to services operating in accordance with the Table in countries other than those included in No. **5.512**.
- 5.513A** Spaceborne active sensors operating in the band 17.2-17.3 GHz shall not cause harmful interference to, or constrain the development of, the radiolocation and other services allocated on a primary basis. (WRC-97)
- 5.514** *Additional allocation:* in Algeria, Saudi Arabia, Bahrain, Bangladesh, Cameroon, Djibouti, El Salvador, the United Arab Emirates, Guatemala, India, Iran (Islamic Republic of), Iraq, Israel, Italy, Japan, Jordan, Kuwait, Libya, Lithuania, Nepal, Nicaragua, Nigeria, **Oman**, Uzbekistan, Pakistan, Qatar, Kyrgyzstan, Somalia, Sudan and South Sudan, the frequency band 17.3-17.7 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits given in Nos. **21.3** and **21.5** shall apply. (WRC-23)
- 5.515** In the band 17.3-17.8 GHz, sharing between the fixed-satellite service (Earth-to-space) and the broadcasting-satellite service shall also be in accordance with the provisions of § 1 of Annex 4 of Appendix **30A**.
- 5.515A** In addition to the need to comply with the coordination criteria in Annex 4 to Appendix **30A**, under assumed free-space propagation conditions, the power flux-density of an assignment in the fixed-satellite service (space to-Earth) of a geostationary-satellite network in the frequency band 17.3-17.7 GHz in Region 2 shall not exceed the value of $-98 \text{ dB(W)/(m}^2 \cdot 27 \text{ MHz)}$ at points in the geostationary-satellite orbit with geocentric orbital separation angles between 152.6° and 162.6° . (WRC-23)
- 5.515B** In the frequency band 17.3-17.7 GHz, the use of the fixed-satellite service (space-to-Earth) by geostationary-satellite space stations in Region 2 shall not cause harmful interference to space station receivers nor claim protection from the broadcasting-satellite service feeder-link earth stations operating under Appendix **30A** in all three Regions, nor put any limitations or restrictions on the locations of the broadcasting-satellite service feeder-link earth stations anywhere within the service area of the feeder link. The notifying administration for the fixed-satellite service (space-to-Earth), when submitting Appendix **4** information elements, shall provide a firm, objective, actionable, measurable and enforceable commitment that, in the event of harmful interference being reported to space station receivers in Appendix **30A**, it shall take immediate action to eliminate the interference or reduce it to an acceptable level. (WRC-23)

- 5.516** The use of the band 17.3-18.1 GHz by geostationary-satellite systems in the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. The use of the band 17.3-17.8 GHz in Region 2 by systems in the fixed-satellite service (Earth-to-space) is limited to geostationary satellites. For the use of the band 17.3-17.8 GHz in Region 2 by feeder links for the broadcasting-satellite service in the band 12.2-12.7 GHz, see Article **11**. The use of the bands 17.3-18.1 GHz (Earth-to-space) in Regions 1 and 3 and 17.8-18.1 GHz (Earth-to-space) in Region 2 by non-geostationary-satellite systems in the fixed-satellite service is subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)
- 5.516A** In the band 17.3-17.7 GHz, earth stations of the fixed-satellite service (space-to-Earth) in Region 1 shall not claim protection from the broadcasting-satellite service feeder-link earth stations operating under Appendix **30A**, nor put any limitations or restrictions on the locations of the broadcasting-satellite service feeder-link earth stations anywhere within the service area of the feeder link. (WRC-03)
- 5.516B** The following bands are identified for use by high-density applications in the fixed-satellite service:
- | | |
|-----------------|-------------------------------------|
| 17.3-17.7 GHz | (space-to-Earth) in Region 1, |
| 18.3-19.3 GHz | (space-to-Earth) in Region 2, |
| 19.7-20.2 GHz | (space-to-Earth) in all Regions, |
| 39.5-40 GHz | (space-to-Earth) in Region 1, |
| 40-40.5 GHz | (space-to-Earth) in all Regions, |
| 40.5-42 GHz | (space-to-Earth) in Region 2, |
| 47.5-47.9 GHz | (space-to-Earth) in Region 1, |
| 48.2-48.54 GHz | (space-to-Earth) in Region 1, |
| 49.44-50.2 GHz | (space-to-Earth) in Region 1, |
| and | |
| 27.5-27.82 GHz | (Earth-to-space) in Region 1, |
| 28.35-28.45 GHz | (Earth-to-space) in Region 2, |
| 28.45-28.94 GHz | (Earth-to-space) in all Regions, |
| 28.94-29.1 GHz | (Earth-to-space) in Region 2 and 3, |
| 29.25-29.46 GHz | (Earth-to-space) in Region 2, |
| 29.46-30 GHz | (Earth-to-space) in all Regions, |
| 48.2-50.2 GHz | (Earth-to-space) in Region 2. |
- This identification does not preclude the use of these frequency bands by other fixed-satellite service applications or by other services to which these frequency bands are allocated on a co-primary basis and does not establish priority in these Radio Regulations among users of the frequency bands. Administrations should take this into account when considering regulatory provisions in relation to these frequency bands. See Resolution **143 (Rev.WRC-19)**. (WRC-19)

- 5.517** In Region 2, use of the fixed-satellite (space-to-Earth) service in the frequency band 17.3-17.8 GHz shall not cause harmful interference to nor claim protection from assignments in the broadcasting-satellite service operating in conformity with the Radio Regulations. (WRC-23)
- 5.517A** The operation of earth stations in motion communicating with geostationary fixed-satellite service space stations within the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) shall be subject to the application of Resolution **169 (Rev.WRC-23)**. (WRC-23)
- 5.517B** The operation of aeronautical and maritime earth stations in motion communicating with non-geostationary space stations in the fixed-satellite service in the frequency bands 17.7-18.6 GHz, 18.8-19.3 GHz and 19.7-20.2 GHz (space-to-Earth) and 27.5-29.1 GHz and 29.5-30 GHz (Earth-to-space) shall be subject to the application of Resolution **123 (WRC-23)**. (WRC-23)
- 5.518** (SUP - WRC-07)
- 5.519** *Additional allocation:* the bands 18-18.3 GHz in Region 2 and 18.1-18.4 GHz in Regions 1 and 3 are also allocated to the meteorological-satellite service (space-to-Earth) on a primary basis. Their use is limited to geostationary satellites. (WRC-07)
- 5.520** The use of the band 18.1-18.4 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links of geostationary-satellite systems in the broadcasting-satellite service. (WRC-2000)
- 5.521** *Alternative allocation:* in the United Arab Emirates, the frequency band 18.1-18.4 GHz is allocated to the fixed, fixed-satellite (space-to-Earth) and mobile services on a primary basis (see No. **5.33**). The provisions of No. **5.519** also apply. (WRC-23)
- 5.521A** For use of the frequency bands 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz, or parts thereof, by space stations in the inter-satellite service, Resolution **679 (WRC-23)** shall apply. Such use is limited to space research, space operation and/or Earth exploration-satellite applications, and also transmissions of data originating from industrial and medical activities in space. When using these frequencies, administrations shall ensure that this inter-satellite service is used only for the aforementioned purposes and is not subject to coordination under No. **9.11A**. For use of the frequency bands 18.1-18.6 GHz, 18.8-20.2 GHz, 27.5-29.1 GHz and 29.5-30 GHz by space stations, the allocation is limited to inter-satellite links between non-geostationary satellites or between non-geostationary satellites and geostationary satellites. For use of the frequency band 29.1-29.5 GHz by space stations, the allocation is limited to inter-satellite links between non-geostationary satellites and geostationary satellites. No. **4.10** does not apply. (WRC-23)
- 5.522** (SUP - WRC-2000)
- 5.522A** The emissions of the fixed service and the fixed-satellite service in the band 18.6-18.8 GHz are limited to the values given in Nos. **21.5A** and **21.16.2**, respectively. (WRC-2000)
- 5.522B** The use of the band 18.6-18.8 GHz by the fixed-satellite service is limited to geostationary systems and systems with an orbit of apogee greater than 20 000 km. (WRC-2000)
- 5.522C** In the band 18.6-18.8 GHz, in Algeria, Saudi Arabia, Bahrain, Egypt, the United Arab Emirates, Jordan, Lebanon, Libya, Morocco, **Oman**, Qatar, the Syrian Arab Republic,

Tunisia and Yemen, fixed-service systems in operation at the date of entry into force of the Final Acts of WRC-2000 are not subject to the limits of No. **21.5A**. (WRC-2000)

5.523 (SUP - WRC-2000)

5.523A The use of the bands 18.8-19.3 GHz (space-to-Earth) and 28.6-29.1 GHz (Earth-to-space) by geostationary and non-geostationary fixed-satellite service networks is subject to the application of the provisions of No. **9.11A** and No. **22.2** does not apply. Non-geostationary-satellite networks shall not cause unacceptable interference to geostationary fixed-satellite service networks for which complete Appendix **4** notification information is considered as having been received by the Bureau prior to 18 November 1995. (WRC-23)

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

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

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

5.523DA In order to protect feeder links of non-geostationary networks in the mobile-satellite service in the frequency band 19.3-19.7 GHz, the power flux-density values produced at the surface of the Earth for all angles of arrival by a space station in the inter-satellite service operating in this band in accordance with Resolution **679 (WRC-23)** shall not exceed -140 dB(W/m²) in any 1 MHz within 150 km of any of the above feeder-link earth stations recorded in the Master International Frequency Register. (WRC-23)

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

5.524 *Additional allocation:* in Afghanistan, Algeria, Saudi Arabia, Bahrain, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), Costa Rica, Djibouti, Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Nigeria, **Oman**,

Pakistan, Palestine*, the Philippines, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, South Sudan, Chad, Togo and Tunisia, the frequency band 19.7-21.2 GHz is also allocated to the fixed and mobile services on a primary basis. This additional use shall not impose any limitation on the power flux-density of space stations in the fixed-satellite service in the frequency band 19.7-21.2 GHz and of space stations in the mobile-satellite service in the frequency band 19.7-20.2 GHz where the allocation to the mobile-satellite service is on a primary basis in the latter frequency band. (WRC-23)

- 5.525** In order to facilitate interregional coordination between networks in the mobile-satellite and fixed-satellite services, carriers in the mobile-satellite service that are most susceptible to interference shall, to the extent practicable, be located in the higher parts of the bands 19.7-20.2 GHz and 29.5-30 GHz.
- 5.526** In the bands 19.7-20.2 GHz and 29.5-30 GHz in Region 2, and in the bands 20.1-20.2 GHz and 29.9-30 GHz in Regions 1 and 3, networks which are both in the fixed-satellite service and in the mobile-satellite service may include links between earth stations at specified or unspecified points or while in motion, through one or more satellites for point-to-point and point-to-multipoint communications.
- 5.527** In the bands 19.7-20.2 GHz and 29.5-30 GHz, the provisions of No. **4.10** do not apply with respect to the mobile-satellite service.
- 5.527A** The operation of earth stations in motion communicating with the FSS is subject to Resolution **156 (Rev.WRC-23)**. (WRC-23)
- 5.528** The allocation to the mobile-satellite service is intended for use by networks which use narrow spot-beam antennas and other advanced technology at the space stations. Administrations operating systems in the mobile-satellite service in the band 19.7-20.1 GHz in Region 2 and in the band 20.1-20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of No. **5.524**.
- 5.529** The use of the bands 19.7-20.1 GHz and 29.5-29.9 GHz by the mobile-satellite service in Region 2 is limited to satellite networks which are both in the fixed-satellite service and in the mobile-satellite service as described in No. **5.526**.
- 5.529A** In the frequency bands 20.2-21.2 GHz and 30-31 GHz, non-geostationary-satellite systems for which complete coordination or notification information, according to the case, is received by the Bureau as of 1 January 2025 shall not cause unacceptable interference to and shall not claim protection from geostationary-satellite networks in the mobile-satellite service operating in accordance with these Regulations. No. **5.43A** does not apply. (WRC-23)
- 5.530** (SUP - WRC-12)
- 5.530A** Unless otherwise agreed between the administrations concerned, any station in the fixed or mobile services of an administration shall not produce a power flux-density in excess of $-120.4 \text{ dB(W/(m}^2 \cdot \text{MHz))}$ at 3 m above the ground of any point of the territory of any other administration in Regions 1 and 3 for more than 20% of the time. In conducting the calculations, administrations should use the most recent version of Recommendation ITU-R P.452 (see also the most recent version of Recommendation ITU-R BO.1898). (WRC-15)

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

- 5.530B** In the band 21.4-22 GHz, in order to facilitate the development of the broadcasting-satellite service, administrations in Regions 1 and 3 are encouraged not to deploy stations in the mobile service and are encouraged to limit the deployment of stations in the fixed service to point-to-point links. (WRC-12)
- 5.530C** (SUP- WRC-15)
- 5.530D** (SUP- WRC-19)
- 5.530E** The allocation to the fixed service in the frequency band 21.4-22 GHz is identified for use in Region 2 by high-altitude platform stations (HAPS). This identification does not preclude the use of this frequency band by other fixed-service applications or by other services to which it is allocated on a co-primary basis, and does not establish priority in the Radio Regulations. Such use of the fixed-service allocation by HAPS is limited to the HAPS-to-ground direction, and shall be in accordance with the provisions of Resolution **165 (Rev.WRC-23)**. (WRC-23)
- 5.531** *Additional allocation:* in Japan, the band 21.4-22 GHz is also allocated to the broadcasting service on a primary basis.
- 5.531A** The use of the aeronautical mobile (OR) service in the frequency band 22-22.2 GHz is limited to non-safety applications. (WRC-23)
- 5.531B** Aircraft stations in the aeronautical mobile (OR) service operating in the frequency band 22-22.2 GHz are subject to agreement obtained under No. 9.21 with respect to the fixed service and shall not cause harmful interference to, nor claim protection from, the fixed service. The following power flux-density values shall be used as a threshold for coordination under No. **9.21**:
- | | | |
|---|-----|-----------------|
| –110 dB(W/(m ² · MHz)) | for | 0° ≤ θ ≤ 12.6° |
| 2.86 θ – 146 dB(W/(m ² · MHz)) | for | 12.6° < θ ≤ 15° |
| 0.87 θ – 116 dB(W/(m ² · MHz)) | for | 15° < θ ≤ 30° |
| 0.067 θ – 92 dB(W/(m ² · MHz)) | for | 30° < θ ≤ 90° |
- where θ is the angle of arrival of the incident wave above the horizontal plane, in degrees.
- This criterion should be applied at the border of the territory of another administration for any aircraft station located at an altitude of up to 15 km above the ground. In conducting the calculations, the most recent version of Recommendation ITU-R P.525 should be used. (WRC-23)
- 5.531C** Stations in the aeronautical mobile (OR) service operating in the frequency band 22-22.2 GHz shall not cause harmful interference to the radio astronomy service operating in the frequency band 22.21-22.5 GHz. The aggregate power flux-density (pfd) received from these stations at any radio astronomy station operating in the frequency band 22.21-22.5 GHz shall be in compliance with the protection criteria provided in Recommendations ITU-R RA.769-2 and ITU-R RA.1513-2, unless specifically agreed by the affected administration(s). (WRC-23)
- 5.531D** The use of the aeronautical mobile (OR) service in the frequency band 22-22.2 GHz outside national boundaries shall not cause harmful interference to, or claim protection from, services in other countries operating in accordance with the Table of Frequency Allocations. (WRC-23)

5.531E

Alternative allocation: in Brunei Darussalam, Iran (Islamic Republic of), Malaysia, Singapore and Thailand, the frequency band 22-22.2 GHz is allocated to the mobile, except aeronautical mobile (R), service on a primary basis. The use of the service is limited to non-safety applications within national boundaries. The use of the aeronautical mobile (OR) service in the frequency band 22-22.2 GHz shall not cause harmful interference to, or claim protection from, services in other countries operating in accordance with the Table of Frequency Allocations. Furthermore, stations in the aeronautical mobile (OR) service operating in the frequency band 22-22.2 GHz shall not cause harmful interference to the radio astronomy service operating in the frequency band 22.21-22.5 GHz in other countries in accordance with the Table of Frequency Allocations. The aggregate power flux-density (pfd) received from these stations at any radio astronomy station operating in the frequency band 22.21-22.5 GHz shall be in compliance with the protection criteria provided in Recommendations ITU-R RA.769-2 and ITU-R RA.1513-2, unless specifically agreed by the affected administration(s). In order to protect stations of the Earth exploration-satellite service (passive) operating in the frequency band 22.21-22.5 GHz, the unwanted equivalent isotropically radiated power (e.i.r.p.) of stations operating in the aeronautical mobile (OR) service shall not exceed -23 dBW in any 100 MHz band in the frequency band 22.21-22.5 GHz.

Aircraft stations in the aeronautical mobile (OR) service operating in the frequency band 22-22.2 GHz are subject to agreement obtained under No. **9.21** with respect to the fixed service and shall not cause harmful interference to, nor claim protection from, the fixed service. The following pfd values shall be used as a threshold for coordination under No. **9.21**:

- 110 dB(W/(m² · MHz)) for 0° ≤ θ ≤ 12.6°
- 2.86 θ - 146 dB(W/(m² · MHz)) for 12.6° < θ ≤ 15°
- 0.87 θ - 116 dB(W/(m² · MHz)) for 15° < θ ≤ 30°
- 0.067 θ - 92 dB(W/(m² · MHz)) for 30° < θ ≤ 90°

where θ is the angle of arrival of the incident wave above the horizontal plane, in degrees.

This criterion should be applied at the border of the territory of another administration for any aircraft station located at an altitude of up to 15 km above the ground. In conducting the calculations, the most recent version of Recommendation ITU-R P.525 should be used. (WRC-23)

5.531F

In order to protect stations of the Earth exploration-satellite service (passive) operating in the frequency band 22.21-22.5 GHz, the unwanted equivalent isotropically radiated power (e.i.r.p.) of stations operating in the aeronautical mobile (OR) service shall not exceed -23 dBW in any 100 MHz band in the frequency band 22.21-22.5 GHz. (WRC-23)

5.532

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

5.532A

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

- 5.532AA** The allocation to the fixed service in the frequency band 24.25-25.25 GHz is identified for use in Region 2 by high-altitude platform stations (HAPS). This identification does not preclude the use of this frequency band by other fixed-service applications or by other services to which this frequency band is allocated on a co-primary basis, and does not establish priority in the Radio Regulations. Such use of the fixed-service allocation by HAPS is limited to the HAPS-to-ground direction and shall be in accordance with the provisions of Resolution **166 (Rev.WRC-23)**. (WRC-23)
- 5.532AB** The frequency band 24.25-27.5 GHz is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Resolution **242 (Rev.WRC-23)** applies. (WRC-23)
- 5.532B** Use of the band 24.65-25.25 GHz in Region 1 and the band 24.65-24.75 GHz in Region 3 by the fixed-satellite service (Earth-to-space) is limited to earth stations using a minimum antenna diameter of 4.5 m. (WRC-12)
- 5.533** The inter-satellite service shall not claim protection from harmful interference from airport surface detection equipment stations of the radionavigation service.
- 5.534** (SUP - WRC-03)
- 5.534A** The allocation to the fixed service in the frequency band 25.25-27.5 GHz is identified in Region 2 for use by high-altitude platform stations (HAPS) in accordance with the provisions of Resolution **166 (Rev.WRC-23)**. Such use of the fixed-service allocation by HAPS shall be limited to the ground-to-HAPS direction in the frequency band 25.25-27.0 GHz and to the HAPS-to-ground direction in the frequency band 27.0-27.5 GHz. Furthermore, the use of the frequency band 25.5-27.0 GHz by HAPS shall be limited to gateway links. This identification does not preclude the use of this frequency band by other fixed-service applications or by other services to which this band is allocated on a co-primary basis, and does not establish priority in the Radio Regulations. (WRC-23)
- 5.535** In the band 24.75-25.25 GHz, feeder links to stations of the broadcasting-satellite service shall have priority over other uses in the fixed-satellite service (Earth-to-space). Such other uses shall protect and shall not claim protection from existing and future operating feeder-link networks to such broadcasting satellite stations.
- 5.535A** The use of the band 29.1-29.5 GHz (Earth-to-space) by the fixed-satellite service is limited to geostationary-satellite systems and feeder links to non-geostationary-satellite systems in the mobile-satellite service. Such use is subject to the application of the provisions of No. **9.11A**, but not subject to the provisions of No. **22.2**, except as indicated in Nos. **5.523C** and **5.523E** where such use is not subject to the provisions of No. **9.11A** and shall continue to be subject to Articles **9** (except No. **9.11A**) and **11** procedures, and to the provisions of No. **22.2**. (WRC-97)
- 5.536** Use of the 25.25-27.5 GHz band by the inter-satellite service is limited to space research and Earth exploration-satellite applications, and also transmissions of data originating from industrial and medical activities in space.
- 5.536A** Administrations operating earth stations in the Earth exploration-satellite service or the space research service shall not claim protection from stations in the fixed and mobile services operated by other administrations. In addition, earth stations in the Earth exploration-satellite service or in the space research service should be operated taking

into account the most recent version of Recommendation ITU-R SA.1862. Resolution **242 (Rev.WRC-23)** applies. (WRC-23)

- 5.536B** In Algeria, Saudi Arabia, Austria, Bahrain, Belgium, Brazil, China, Korea (Rep. of), Denmark, Egypt, United Arab Emirates, Estonia, Finland, Hungary, India, Iran (Islamic Republic of), Iraq, Ireland, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Lithuania, Moldova, Norway, **Oman**, Uganda, Pakistan, the Philippines, Poland, Portugal, Qatar, the Syrian Arab Republic, Türkiye, Dem. People's Rep. of Korea, Slovakia, the Czech Rep., Romania, the United Kingdom, Singapore, Slovenia, Somalia, Sudan, Sweden, Tanzania, Viet Nam and Zimbabwe, earth stations operating in the Earth exploration-satellite service in the frequency band 25.5-27 GHz shall not claim protection from, or constrain the use and deployment of, stations of the fixed and mobile services. Resolution **242 (Rev.WRC-23)** applies. (WRC-23)
- 5.536C** In Algeria, Saudi Arabia, Bahrain, Botswana, Brazil, Cameroon, Comoros, Cuba, Djibouti, Egypt, United Arab Emirates, Estonia, Finland, Iran (Islamic Republic of), Israel, Jordan, Kenya, Kuwait, Lithuania, Malaysia, Morocco, Nigeria, **Oman**, Qatar, Syrian Arab Republic, Somalia, Sudan, South Sudan, Tanzania, Tunisia, Uruguay, Zambia and Zimbabwe, earth stations operating in the space research service in the band 25.5-27 GHz shall not claim protection from, or constrain the use and deployment of, stations of the fixed and mobile services. (WRC-12)
- 5.537** Space services using non-geostationary satellites operating in the inter-satellite service in the band 27-27.5 GHz are exempt from the provisions of No. **22.2**.
- 5.537A** In Bhutan, Cameroon, China, Korea (Rep. of), the Russian Federation, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Kazakhstan, Malaysia, Maldives, Mongolia, Myanmar, Uzbekistan, Pakistan, the Philippines, Kyrgyzstan, the Dem. People's Rep. of Korea, Sudan, Sri Lanka, Thailand and Viet Nam, the allocation to the fixed service in the frequency band 27.9-28.2 GHz may also be used by high altitude platform stations (HAPS) within the territory of these countries. Such use of 300 MHz of the fixed-service allocation by HAPS in the above countries is further limited to operation in the HAPS-to-ground direction and shall not cause harmful interference to, nor claim protection from, other types of fixed-service systems or other co-primary services. Furthermore, the development of these other services shall not be constrained by HAPS. See Resolution **145 (Rev.WRC-19)**. (WRC-19)
- 5.538** *Additional allocation:* the bands 27.500-27.501 GHz and 29.999-30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for the beacon transmissions intended for up-link power control. Such space-to-Earth transmissions shall not exceed an equivalent isotropically radiated power (e.i.r.p.) of +10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit. (WRC-07)
- 5.539** The band 27.5-30 GHz may be used by the fixed-satellite service (Earth-to-space) for the provision of feeder links for the broadcasting-satellite service.
- 5.540** *Additional allocation:* the band 27.501-29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for up-link power control.

- 5.541** In the band 28.5-30 GHz, the earth exploration-satellite service is limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.
- 5.541A** Feeder links of non-geostationary networks in the mobile-satellite service and geostationary networks in the fixed-satellite service operating in the band 29.1-29.5 GHz (Earth-to-space) shall employ uplink adaptive power control or other methods of fade compensation, such that the earth station transmissions shall be conducted at the power level required to meet the desired link performance while reducing the level of mutual interference between both networks. These methods shall apply to networks for which Appendix 4 coordination information is considered as having been received by the Bureau after 17 May 1996 and until they are changed by a future competent world radiocommunication conference. Administrations submitting Appendix 4 information for coordination before this date are encouraged to utilize these techniques to the extent practicable. (WRC-2000)
- 5.542** *Additional allocation:* in Algeria, Saudi Arabia, Bahrain, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), Djibouti, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guinea, India, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, **Oman**, Pakistan, Palestine*, Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Somalia, Sudan, South Sudan, Sri Lanka and Chad, the frequency band 29.5-31 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits specified in Nos. **21.3** and **21.5** shall apply. (WRC-23)
- 5.543** The band 29.95-30 GHz may be used for space-to-space links in the Earth exploration-satellite service for telemetry, tracking, and control purposes, on a secondary basis.
- 5.543A** (SUP - WRC-19)
- 5.543B** The allocation to the fixed service in the frequency band 31-31.3 GHz is identified for worldwide use by high-altitude platform stations (HAPS). This identification does not preclude the use of this frequency band by other fixed-service applications or by other services to which this frequency band is allocated on a co-primary basis, and does not establish priority in the Radio Regulations. Such use of the fixed-service allocation by HAPS shall be in accordance with the provisions of Resolution **167 (Rev.WRC-23)**. (WRC-23)
- 5.544** In the band 31-31.3 GHz the power flux-density limits specified in Article **21**, Table **21-4** shall apply to the space research service.
- 5.545** *Different category of service:* in Armenia, Georgia, Kyrgyzstan, Tajikistan and Turkmenistan, the allocation of the band 31-31.3 GHz to the space research service is on a primary basis (see No. **5.33**). (WRC-12)
- 5.546** *Different category of service:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Djibouti, Egypt, the United Arab Emirates, Spain, Estonia, the Russian Federation, Georgia, Hungary, Iran (Islamic Republic of), Israel, Jordan, Lebanon, Moldova, Mongolia, **Oman**, Uzbekistan, Poland, the Syrian Arab Republic, Türkiye, Kyrgyzstan, Romania, the United Kingdom, Somalia, South Africa, Tajikistan and Turkmenistan, the

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

allocation of the frequency band 31.5-31.8 GHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. **5.33**). (WRC-23)

- 5.547** The frequency bands 31.8-33.4 GHz, 37-40 GHz, 40.5-43.5 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz are available for high-density applications in the fixed service. Administrations should take this into account when considering regulatory provisions in relation to these bands. Because of the potential deployment of high-density applications in the fixed-satellite service in the frequency bands 39.5-40 GHz and 40.5-42 GHz (see No. **5.516B**), administrations should further take into account potential constraints to high-density applications in the fixed service, as appropriate. (WRC-23)
- 5.547A** Administrations should take practical measures to minimize the potential interference between stations in the fixed service and airborne stations in the radionavigation service in the 31.8-33.4 GHz band, taking into account the operational needs of the airborne radar systems. (WRC-2000)
- 5.547B** *Alternative allocation:* in the United States, the band 31.8-32 GHz is allocated to the radionavigation and space research (deep space) (space-to-Earth) services on a primary basis. (WRC-97)
- 5.547C** *Alternative allocation:* in the United States, the band 32-32.3 GHz is allocated to the radionavigation and space research (deep space) (space-to-Earth) services on a primary basis. (WRC-03)
- 5.547D** *Alternative allocation:* in the United States, the band 32.3-33 GHz is allocated to the inter-satellite and radionavigation services on a primary basis. (WRC-97)
- 5.547E** *Alternative allocation:* in the United States, the band 33-33.4 GHz is allocated to the radionavigation service on a primary basis. (WRC-97)
- 5.548** In designing systems for the inter-satellite service in the frequency band 32.3-33 GHz, for the radionavigation service in the frequency band 32-33 GHz, and for the space research service (deep space) in the frequency band 31.8-32.3 GHz, administrations shall take all necessary measures to prevent harmful interference between these services, bearing in mind the safety aspects of the radionavigation service (see Recommendation **707 (Rev.WRC-23)**). (WRC-23)
- 5.549** *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Egypt, the United Arab Emirates, Gabon, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Malaysia, Mali, Morocco, Mauritania, Nepal, Nigeria, **Oman**, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, Singapore, Somalia, Sudan, South Sudan, Sri Lanka, Togo, Tunisia and Yemen, the band 33.4-36 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-12)
- 5.549A** In the band 35.5-36.0 GHz, the mean power flux-density at the Earth's surface, generated by any spaceborne sensor in the Earth exploration-satellite service (active) or space research service (active), for any angle greater than 0.8° from the beam centre shall not exceed $-73.3 \text{ dB(W/m}^2\text{)}$ in this band. (WRC-03)
- 5.550** *Different category of service:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kyrgyzstan, Tajikistan and Turkmenistan, the allocation of the band 34.7-35.2 GHz to the space research service is on a primary basis (see No. **5.33**). (WRC-12)

- 5.550A** For sharing of the band 36-37 GHz between the Earth exploration-satellite (passive) service and the fixed and mobile services, Resolution **752 (WRC-07)** shall apply. (WRC-07)
- 5.550B** The frequency band 37-43.5 GHz, or portions thereof, is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Because of the potential deployment of FSS earth stations within the frequency range 37.5-42.5 GHz and high-density applications in the fixed-satellite service in the frequency bands 39.5-40 GHz in Region 1, 40-40.5 GHz in all Regions and 40.5-42 GHz in Region 2 (see No. **5.516B**), administrations should further take into account potential constraints to IMT in these frequency bands, as appropriate. Resolution **243 (Rev.WRC-23)** applies. (WRC-23)
- 5.550C** The use of the frequency bands 37.5-39.5 GHz (space-to-Earth), 39.5-42.5 GHz (space-to-Earth), 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to the application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service but not with non-geostationary-satellite systems in other services. Resolution **770 (WRC-19)*** shall also apply, and No. **22.2** shall continue to apply. (WRC-19)
- 5.550CA** Non-geostationary-satellite systems in the fixed-satellite service operating with an apogee altitude above 407 km and below 2 000 km in the frequency band 37.5-38 GHz shall not exceed an unwanted emission e.i.r.p. density of -21 dB(W/100 MHz) per space station for angles greater than 65.0° from nadir relative to the space station in the fixed-satellite service in the frequency band 36-37 GHz in order to protect the Earth exploration-satellite service (passive) operating in the latter frequency band. (WRC-23)
- 5.550D** The allocation to the fixed service in the frequency band 38-39.5 GHz is identified for worldwide use by administrations wishing to implement high-altitude platform stations (HAPS). In the HAPS-to-ground direction, the HAPS ground station shall not claim protection from stations in the fixed, mobile and fixed-satellite services; and No. **5.43A** does not apply. This identification does not preclude the use of this frequency band by other fixed-service applications or by other services to which this frequency band is allocated on a co-primary basis and does not establish priority in the Radio Regulations. Furthermore, the development of the fixed-satellite, fixed and mobile services shall not be unduly constrained by HAPS. Such use of the fixed-service allocation by HAPS shall be in accordance with the provisions of Resolution **168 (Rev.WRC-23)**. (WRC-23)
- 5.550E** The use of the frequency bands 39.5-40 GHz and 40-40.5 GHz by non-geostationary-satellite systems in the mobile-satellite service (space-to-Earth) and by non-geostationary-satellite systems in the fixed-satellite service (space-to-Earth) is subject to the application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite and mobile-satellite services but not with non-geostationary-satellite systems in other services. No. **22.2** shall continue to apply for non-geostationary-satellite-systems. (WRC-19)
- 5.551** (SUP- WRC-97)
- 5.551A** (SUP - WRC-03)

* *Note by the Secretariat:* This Resolution was revised by WRC-23.

5.551AA	(SUP - WRC-03)
5.551B	(SUP - WRC-2000)
5.551C	(SUP - WRC-2000)
5.551D	(SUP - WRC-2000)
5.551E	(SUP - WRC-2000)
5.551F	<i>Different category of service:</i> in Japan, the allocation of the band 41.5-42.5 GHz to the mobile service is on a primary basis (see No. 5.33). (WRC-97)
5.551G	(SUP - WRC-03)
5.551H	<p>The equivalent power flux-density (epfd) produced in the frequency band 42.5-43.5 GHz by all space stations in any non-geostationary-satellite system in the fixed-satellite service (space-to-Earth) or in the broadcasting-satellite service, operating in the frequency band 42-42.5 GHz, shall not exceed the following values at the site of any radio astronomy station for more than 2% of the time:</p> <ul style="list-style-type: none"> - -230 dB(W/m²) in 1 GHz and -246 dB(W/m²) in any 500 kHz of the frequency band 42.5-43.5 GHz at the site of any radio astronomy station registered as a single-dish telescope; and - -209 dB(W/m²) in any 500 kHz of the frequency band 42.5-43.5 GHz at the site of any radio astronomy station registered as a very long baseline interferometry station. <p>These epfd values shall be evaluated using the methodology given in Recommendation ITU-R S.1586-1 and the reference antenna pattern and the maximum gain of an antenna in the radio astronomy service given in Recommendation ITU-R RA.1631-0 and shall apply over the whole sky and for elevation angles higher than the minimum operating angle θ_{min} of the radiotelescope (for which a default value of 5° should be adopted in the absence of notified information).</p> <p>These values shall apply at any radio astronomy station that either:</p> <ul style="list-style-type: none"> - was in operation prior to 5 July 2003 and has been notified to the Bureau before 4 January 2004; or - was notified before the date of receipt of the complete Appendix 4 information for coordination or notification, as appropriate, for the space station to which the limits apply. <p>Other radio astronomy stations notified after these dates may seek an agreement with administrations that have authorized the space stations. In Region 2, Resolution 743 (WRC-03) shall apply. The limits in this footnote may be exceeded at the site of a radio astronomy station of any country whose administration so agreed. (WRC-23)</p>
5.551I	The power flux-density in the band 42.5-43.5 GHz produced by any geostationary space station in the fixed satellite service (space-to-Earth), or the broadcasting-satellite service operating in the 42-42.5 GHz band, shall not exceed the following values at the site of any radio astronomy station:

- -137 dB(W/m²) in 1 GHz and -153 dB(W/m²) in any 500 kHz of the 42.5-43.5 GHz band at the site of any radio astronomy station registered as a single-dish telescope; and
- -116 dB(W/m²) in any 500 kHz of the 42.5-43.5 GHz band at the site of any radio astronomy station registered as a very long baseline interferometry station.

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

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

or

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

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

5.552

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

5.552A

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

5.553

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

5.553A

In Algeria, Angola, Bahrain, Belarus, Benin, Botswana, Brazil, Burkina Faso, Cabo Verde, Korea (Rep. of), Côte d'Ivoire, Croatia, Djibouti, Egypt, 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, Somalia, 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 (Rev.WRC-23)** applies. (WRC-23)

- 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 (Rev.WRC-23)** applies. (WRC-23)
- 5.554** In the bands 43.5-47 GHz, 66-71 GHz, 95-100 GHz, 123-130 GHz, 191.8-200 GHz and 252-265 GHz, satellite links connecting land stations at specified fixed points are also authorized when used in conjunction with the mobile-satellite service or the radionavigation-satellite service. (WRC-2000)
- 5.554A** The use of the bands 47.5-47.9 GHz, 48.2-48.54 GHz and 49.44-50.2 GHz by the fixed-satellite service (space-to-Earth) is limited to geostationary satellites. (WRC-03)
- 5.555** *Additional allocation:* the band 48.94-49.04 GHz is also allocated to the radio astronomy service on a primary basis. (WRC-2000)
- 5.555A** (SUP - WRC-03)
- 5.555B** The power flux-density in the band 48.94-49.04 GHz produced by any geostationary space station in the fixed-satellite service (space-to-Earth) operating in the bands 48.2-48.54 GHz and 49.44-50.2 GHz shall not exceed -151.8 dB(W/m²) in any 500 kHz band at the site of any radio astronomy station. (WRC-03)
- 5.555C** The use of the frequency band 51.4-52.4 GHz by the fixed-satellite service (Earth-to-space) is limited to geostationary-satellite networks. The earth stations shall be limited to gateway earth stations with a minimum antenna diameter of 2.4 metres. (WRC-19)
- 5.556** In the bands 51.4-54.25 GHz, 58.2-59 GHz and 64-65 GHz, radio astronomy observations may be carried out under national arrangements. (WRC-2000)
- 5.556A** Use of the bands 54.25-56.9 GHz, 57-58.2 GHz and 59-59.3 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density at all altitudes from 0 km to 1 000 km above the Earth's surface produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, shall not exceed -147 dB(W/(m² · 100 MHz)) for all angles of arrival. (WRC-97)
- 5.556B** *Additional allocation:* in Japan, the band 54.25-55.78 GHz is also allocated to the mobile service on a primary basis for low-density use. (WRC-97)
- 5.557** *Additional allocation:* in Japan, the band 55.78-58.2 GHz is also allocated to the radiolocation service on a primary basis. (WRC-97)

- 5.557A** In the band 55.78-56.26 GHz, in order to protect stations in the Earth exploration-satellite service (passive), the maximum power density delivered by a transmitter to the antenna of a fixed service station is limited to -26 dB(W/MHz). (WRC-2000)
- 5.558** In the bands 55.78-58.2 GHz, 59-64 GHz, 66-71 GHz, 122.25-123 GHz, 130-134 GHz, 167-174.8 GHz and 191.8-200 GHz, stations in the aeronautical mobile service may be operated subject to not causing harmful interference to the inter-satellite service (see No. **5.43**). (WRC-2000)
- 5.558A** Use of the band 56.9-57 GHz by inter-satellite systems is limited to links between satellites in geostationary satellite orbit and to transmissions from non-geostationary satellites in high-Earth orbit to those in low-Earth orbit. For links between satellites in the geostationary-satellite orbit, the single entry power flux-density at all altitudes from 0 km to 1 000 km above the Earth's surface, for all conditions and for all methods of modulation, shall not exceed -147 dB (W/(m² . 100 MHz)) for all angles of arrival. (WRC-97)
- 5.559** In the band 59-64 GHz, airborne radars in the radiolocation service may be operated subject to not causing harmful interference to the inter-satellite service (see No. **5.43**). (WRC-2000)
- 5.559A** (SUP - WRC-07)
- 5.559AA** The frequency band 66-71 GHz is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which this frequency band is allocated and does not establish priority in the Radio Regulations. Resolution **241 (Rev.WRC-23)** applies. (WRC-23)
- 5.559B** The use of the frequency band 77.5-78 GHz by the radiolocation service shall be limited to short-range radar for ground-based applications, including automotive radars. The technical characteristics of these radars are provided in the most recent version of Recommendation ITU-R M.2057. The provisions of No. **4.10** do not apply. (WRC-15)
- 5.560** In the band 78-79 GHz radars located on space stations may be operated on a primary basis in the Earth exploration-satellite service and in the space research service.
- 5.561** In the band 74-76 GHz, stations in the fixed, mobile and broadcasting services shall not cause harmful interference to stations of the fixed-satellite service or stations of the broadcasting-satellite service operating in accordance with the decisions of the appropriate frequency assignment planning conference for the broadcasting-satellite service. (WRC-2000)
- 5.561A** The 81-81.5 GHz band is also allocated to the amateur and amateur-satellite services on a secondary basis. (WRC-2000)
- 5.561B** In Japan, use of the band 84-86 GHz, by the fixed-satellite service (Earth-to-space) is limited to feeder links in the broadcasting-satellite service using the geostationary-satellite orbit. (WRC-2000)
- 5.562** The use of the band 94-94.1 GHz by the Earth exploration-satellite (active) and space research (active) services is limited to spaceborne cloud radars. (WRC-97)

- 5.562A** In the bands 94-94.1 GHz and 130-134 GHz, transmissions from space stations of the Earth exploration-satellite service (active) that are directed into the main beam of a radio astronomy antenna have the potential to damage some radio astronomy receivers. Space agencies operating the transmitters and the radio astronomy stations concerned should mutually plan their operations so as to avoid such occurrences to the maximum extent possible. (WRC-2000)
- 5.562B** In the frequency bands 105-109.5 GHz, 111.8-114.25 GHz and 217-226 GHz, the use of this allocation is limited to space-based radio astronomy only. (WRC-19)
- 5.562C** Use of the band 116-122.25 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, at all altitudes from 0 km to 1 000 km above the Earth's surface and in the vicinity of all geostationary orbital positions occupied by passive sensors, shall not exceed – 148 dB(W/(m² · MHz)) for all angles of arrival. (WRC-2000)
- 5.562D** *Additional allocation:* In Korea (Rep. of), the frequency bands 128-130 GHz, 171-171.6 GHz, 172.2-172.8 GHz and 173.3-174 GHz are also allocated to the radio astronomy service on a primary basis. Radio astronomy stations in Korea (Rep. of) operating in the frequency bands referred to in this footnote shall not claim protection from, or constrain the use and development of, services in other countries operating in accordance with the Radio Regulations. (WRC-15)
- 5.562E** The allocation to the Earth exploration-satellite service (active) is limited to the band 133.5-134 GHz. (WRC-2000)
- 5.562F** (SUP - WRC-19)
- 5.562G** (SUP - WRC-19)
- 5.562H** Use of the bands 174.8-182 GHz and 185-190 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, at all altitudes from 0 to 1 000 km above the Earth's surface and in the vicinity of all geostationary orbital positions occupied by passive sensors, shall not exceed –144 dB(W/(m² · MHz)) for all angles of arrival. (WRC-2000)
- 5.563** (SUP - WRC-03)
- 5.563A** In the bands 200-209 GHz, 235-238 GHz, 250-252 GHz and 265-275 GHz, ground-based passive atmospheric sensing is carried out to monitor atmospheric constituents. (WRC-2000)
- 5.563AA** In the frequency band 235-238 GHz, stations in the Earth exploration-satellite service (passive) shall not claim protection from stations in the fixed and mobile services. (WRC-23)
- 5.563B** The band 237.9-238 GHz is also allocated to the Earth exploration-satellite service (active) and the space research service (active) for spaceborne cloud radars only. (WRC-2000)
- 5.564** (SUP - WRC-2000)
- 5.564A** For the operation of fixed and land mobile service applications in frequency bands in the range 275-450 GHz:
- The frequency bands 275-296 GHz, 306-313 GHz, 318-333 GHz and 356-450 GHz are

identified for use by administrations for the implementation of land mobile and fixed service applications where no specific conditions are necessary to protect Earth exploration-satellite service (passive) applications.

The frequency bands 296-306 GHz, 313-318 GHz and 333-356 GHz may only be used by fixed and land mobile service applications when specific conditions to ensure the protection of Earth exploration-satellite service (passive) applications are determined in accordance with Resolution **731 (Rev.WRC-23)**.

In those portions of the frequency range 275-450 GHz where radio astronomy applications are used, specific conditions (e.g. minimum separation distances and/or avoidance angles) may be necessary to ensure protection of radio astronomy sites from land mobile and/or fixed service applications, on a case-by-case basis, in accordance with Resolution **731 (Rev.WRC-23)**.

The use of the above-mentioned frequency bands by land mobile and fixed service applications does not preclude use by, and does not establish priority over, any other applications of radio services in the range of 275-450 GHz. (WRC-23)

5.565

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

- radio astronomy service: 275-323 GHz, 327-371 GHz, 388-424 GHz, 426-442 GHz, 453-510 GHz, 623-711 GHz, 795-909 GHz and 926-945 GHz;
- Earth exploration-satellite service (passive) and space research service (passive): 275-286GHz, 296-306GHz, 313-356 GHz, 361-365 GHz, 369-392 GHz, 397-399 GHz, 409-411 GHz, 416-434 GHz, 439-467 GHz, 477-502 GHz, 523-527 GHz, 538-581 GHz, 611-630 GHz, 634-654 GHz, 657-692 GHz, 713-718 GHz, 729-733 GHz, 750-754 GHz, 771-776 GHz, 823-846 GHz, 850-854 GHz, 857-862 GHz, 866-882 GHz, 905-928 GHz, 951-956 GHz, 968-973 GHz and 985-990 GHz.

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

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

3 Abbreviations

Abbreviations

ACAS	AIRBORNE COLLISION AVOIDANCE SYSTEM
AGA	AIR-GROUND-AIR
AIS	UNIVERSAL SHIPBORNE AUTOMATIC IDENTIFICATION SYSTEM
Art.	ARTICLE
B/PAL	SYSTEM AND STANDARD FOR ANALOG TERRESTRIAL TELEVISION IN VHF BAND ADOPTED IN THE SULTANATE OF OMAN
BSS	BROADCASTING SATELLITE SERVICE
BWA	BROADBAND WIRELESS ACCESS
CB	CITIZEN BAND
DCS	DIGITAL SELECTIVE CALLING
DECT	DIGITAL ENHANCED CORDLESS TELECOMMUNICATIONS
DME	DISTANCE MEASURING EQUIPMENT
DSC	DIGITAL SELECTIVE CALLING
DVB-T	DIGITAL VIDEO BROADCASTING - TERRESTRIAL
E.I.R.P.	EFFECTIVE ISOTROPIC RADIATED POWER
E/S	EARTH-TO-SPACE DIRECTION
EGSM	GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS IN EXTENDED BAND OF 900 MHZ
EPIRB	EMERGENCY POSITION INDICATING RADIO BEACONS
ESV	EARTH STATIONS ON-BOARD VESSELS
FDD	FREQUENCY DIVISION DUPLEX
FM	FREQUENCY MODULATION
FS	FIXED SERVICE
FSS	FIXED-SATELLITE SERVICE
GALILEO	GLOBAL SATELLITE RADIONAVIGATION SYSTEM BEING BUILT BY EUROPEAN UNION AND EUROPEAN SPACE AGENCY
GE06	REGIONAL AGREEMENT RELATING TO THE PLANNING OF THE DIGITAL BROADCASTING SERVICE IN PARTS OF REGIONS 1 AND 3, IN THE FREQUENCY BANDS 174-230 MHZ AND 470-862 MHZ, GENEVA, 2006
GE75	REGIONAL AGREEMENT RELATING TO THE PLANNING OF LF/MF BROADCASTING IN PARTS OF REGIONS 1 AND 3, GENEVA, 1975
GE84	REGIONAL AGREEMENT CONCERNING FM SOUND BROADCASTING STATIONS (REGION 1 AND PART OF REGION 3), GENEVA, 1984
GE85-EMA	REGIONAL AGREEMENT CONCERNING THE PLANNING OF THE MARITIME RADIONAVIGATION SERVICE (RADIOBEACONS) IN THE FREQUENCY BAND 283.5-315 KHZ FOR THE EUROPEAN MARITIME AREA, GENEVA, 1985

GE85-MM-R1	REGIONAL AGREEMENT CONCERNING THE MF MARITIME MOBILE AND AERONAUTICAL RADIONAVIGATION SERVICES IN REGION 1, GENEVA, 1985
GLONASS	GLOBAL NAVIGATION SATELLITE SYSTEM
GMDSS	GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM
GPS	GLOBAL POSITIONING SYSTEM
GSM-1800	GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS IN 1800 MHZ BAND
GSM-900	GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS IN 900 MHZ BAND
GSO	GEOSTATIONARY SATELLITE ORBIT
HAPS	HIGH ALTITUDE PLATFORM STATION
HDTV	HIGH-DEFINITION TELEVISION
HF	HIGH FREQUENCY (3 – 30 MHZ)
IBURST	WIRELESS BROADBAND TECHNOLOGY DEVELOPED BY ARRAYCOMM
ICAO	INTERNATIONAL CIVIL AVIATION ORGANIZATION
ILS	INSTRUMENTAL LANDING SYSTEM
IMO	INTERNATIONAL MARITIME ORGANIZATION
IMT	INTERNATIONAL MOBILE TELECOMMUNICATIONS
ISM	INDUSTRIAL, SCIENTIFIC AND MEDICAL
ITS	Intelligent Transport System
ITU	INTERNATIONAL TELECOMMUNICATION UNION
ITU RR	RADIO REGULATIONS OF THE INTERNATIONAL TELECOMMUNICATION UNION
JTIDS	JOINT TACTICAL INFORMATION AND DISTRIBUTION SYSTEM
LF	LOW FREQUENCY (30 – 300 KHZ)
LORAN	LONG RANGE AID TO NAVIGATION
MF	MEDIUM FREQUENCY (300 – 3000 KHZ)
MICS	MEDICAL IMPLANT COMMUNICATION SYSTEM
MIDS	MULTIFUNCTIONAL INFORMATION DISTRIBUTION SYSTEM
MLS	MICROWAVE LANDING SYSTEM
MS	MOBILE STATION
MSI	MARITIME SAFETY INFORMATION
MSS	MOBILE-SATELLITE SERVICE
NAVTEX	NARROW-BAND DIRECT-PRINTING TELEGRAPHY SYSTEM FOR TRANSMISSION OF NAVIGATIONAL AND METEOROLOGICAL WARNINGS AND URGENT INFORMATION TO SHIPS
NBDP	NARROW-BAND DIRECT-PRINTING
OR	OFF-ROUTE (IN AERONAUTICAL MOBILE SERVICE)

PAMR	PUBLIC ACCESS MOBILE RADIO
PFD	POWER FLUX DENSITY
P-MP	POINT-TO-MULTIPOINT
PMR	PRIVATE (PROFESSIONAL) MOBILE RADIO
P-P	POINT-TO-POINT
R	ROUTE (IN AERONAUTICAL MOBILE SERVICE)
REC	RECOMMENDATION
RES.	RESOLUTION
RFID	RADIO FREQUENCY IDENTIFICATION
RLAN	RADIO LOCAL AREA NETWORK
RNS	RADIONAVIGATION SERVICE
RR	ITU RADIO REGULATIONS
S/E	SPACE-TO-EARTH DIRECTION
SAB	SERVICE ANCILLARY TO BROADCASTING
SAP	SERVICE ANCILLARY TO PROGRAM MAKING
SAR	SEARCH AND RESCUE
SART	SEARCH AND RESCUE TRANSPONDER
SIT	SATELLITE INTERACTIVE TERMINAL
SNG	SATELLITE NEWS GATHERING
SRD	SHORT RANGE DEVICE
SRR	SHORT RANGE RADAR
SSR	SECONDARY SURVEILLANCE RADAR
SUT	SATELLITE USER TERMINAL
TACAN	TACTICAL AIR NAVIGATION
T-DAB	TERRESTRIAL DIGITAL AUDIO BROADCASTING
TETRA	TERRESTRIAL TRUNKED RADIO
UHF	ULTRA-HIGH FREQUENCY (300 – 3000 MHZ)
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
VHF	VERY HIGH FREQUENCY (30 – 300 MHZ)
VLF	VERY LOW FREQUENCY (3 – 30 KHZ)
VOR	VHF OMNIDIRECTIONAL RANGING
VTS	VEHICLE TRACKING SYSTEM
WAS	WIRELESS ACCESS SYSTEM