



National Table of Frequency Allocations SRI LANKA

Telecommunication Regulatory Commission of Sri Lanka
2023

Terms and definitions

Introduction

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

Section I – General terms

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

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

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

1.6 *radiocommunication*: *Telecommunication* by means of *radio waves* (CS) (CV).

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

1.8 *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.

1.9 *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*.

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

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

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

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

1.14 *Coordinated Universal Time (UTC)*: Time scale, based on the second (SI), as described in Resolution **655 (WRC-15)**. (WRC-15)

1.15 *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*.

Section II – Specific terms related to frequency management

1.16 *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.

1.17 *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.

1.18 *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.

Section III – Radio services

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

Unless otherwise stated, any radiocommunication service relates to *terrestrial radiocommunication*.

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

1.21 *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*.

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

1.23 *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.

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

1.25 *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.

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

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

1.28 *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.

1.29 *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.

1.30 *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.

1.31 *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.

1.32 *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.

1.33 *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.

1.34 *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.

1.35 *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.

1.36 *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.

1.37 *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.

1.38 *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.

1.39 *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*.

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

1.41 *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.

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

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

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

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

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

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

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

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

1.49 *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.

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

1.51 *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.

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

1.53 *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.

1.54 *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.

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

1.56 *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.

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

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

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

1.60 *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*.

Section IV – Radio stations and systems

1.61 *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.

1.62 *terrestrial station*: A *station* effecting *terrestrial radiocommunication*. In these Regulations, unless otherwise stated, any *station* is a terrestrial station.

1.63 *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.

1.64 *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.

1.65 *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, lifecraft or other survival equipment.

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

1.66A *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.

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

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

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

1.70 *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*.

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

1.72 *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*.

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

1.74 *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.

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

1.76 *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*.

1.77 *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*.

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

1.79 *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.

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

1.81 *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.

1.82 *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*.

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

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

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

- 1.86** *radiodetermination station*: A station in the *radiodetermination service*.
- 1.87** *radionavigation mobile station*: A station in the *radionavigation service* intended to be used while in motion or during halts at unspecified points.
- 1.88** *radionavigation land station*: A station in the *radionavigation service* not intended to be used while in motion.
- 1.89** *radiolocation mobile station*: A station in the *radiolocation service* intended to be used while in motion or during halts at unspecified points.
- 1.90** *radiolocation land station*: A station in the *radiolocation service* not intended to be used while in motion.
- 1.91** *radio direction-finding station*: A *radiodetermination station* using *radio direction-finding*.
- 1.92** *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.
- 1.93** *emergency position-indicating radiobeacon station*: A station in the *mobile service* the *emissions* of which are intended to facilitate search and rescue operations.
- 1.94** *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.
- 1.95** *standard frequency and time signal station*: A station in the *standard frequency and time signal service*.
- 1.96** *amateur station*: A station in the *amateur service*.
- 1.97** *radio astronomy station*: A station in the *radio astronomy service*.
- 1.98** *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*.
- 1.99** *ship's emergency transmitter*: A ship's transmitter to be used exclusively on a distress frequency for distress, urgency or safety purposes.
- 1.100** *radar*: A *radiodetermination* system based on the comparison of reference signals with radio signals reflected, or retransmitted, from the position to be determined.
- 1.101** *primary radar*: A *radiodetermination* system based on the comparison of reference signals with radio signals reflected from the position to be determined.
- 1.102** *secondary radar*: A *radiodetermination* system based on the comparison of reference signals with radio signals retransmitted from the position to be determined.

1.103 *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.

1.104 *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.

1.105 *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.

1.106 *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.

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

1.108 *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.

1.108A *meteorological aids land station*: A *station* in the *meteorological aids service* not intended to be used while in motion.

1.108B *meteorological aids mobile station*: A *station* in the *meteorological aids service* intended to be used while in motion or during halts at unspecified points.

1.109 *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.

1.109A *adaptive system*: A *radiocommunication* system which varies its radio characteristics according to channel quality.

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

1.111 *satellite system*: A *space system* using one or more artificial earth *satellites*.

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

1.113 *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.

1.114 *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.

1.115 *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.

8.3-110 kHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
Below 8.3	(Not allocated) 5.53, 5.54	(Not allocated) foot notes (1) (2)
8.3-9	METEOROLOGICAL AIDS 5.54A	METEOROLOGICAL AIDS (3)
9-11.3	METEOROLOGICAL AIDS 5.54A RADIONAVIGATION	METEOROLOGICAL AIDS (3) RADIONAVIGATION
11.3-14	RADIONAVIGATION	RADIONAVIGATION
14-19.95	FIXED MARITIME MOBILE 5.57 5.55 5.56	FIXED MARITIME MOBILE (5) (4)
19.95-20.05	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)
20.05-70	FIXED MARITIME MOBILE 5.57 5.56	FIXED MARITIME MOBILE (5) (4)
70-72	RADIONAVIGATION 5.60 Fixed Maritime mobile 5.57	RADIONAVIGATION (6) Fixed Maritime mobile
72-84	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60	FIXED MARITIME MOBILE (5) RADIONAVIGATION (6)
84-86	RADIONAVIGATION 5.60 Fixed Maritime mobile 5.57 5.59	RADIONAVIGATION (6) Fixed Maritime mobile (5)
86-90	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60	FIXED MARITIME MOBILE (5) RADIONAVIGATION (6)
90-110	RADIONAVIGATION 5.62 Fixed 5.64	RADIONAVIGATION (7) Fixed (8)

1. (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. (WRC12)

2. (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. (WRC12)

3. (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)

4. (5.56) The stations of services to which the bands 14-19.95 kHz and 20.05-70 kHz are allocated may transmit standard frequency and time signals. Such stations shall be afforded protection from harmful interference.

5. (5.57) The use of the bands 14-19.95 kHz, 20.05-70 kHz and 70-90 kHz 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.

6. (5.60) In the bands 70-90 kHz and 110-130 kHz pulsed radionavigation systems may be used on condition that they do not cause harmful interference to other services to which these bands are allocated.

7. (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.

8. (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 and for stations of the maritime mobile service in the bands allocated to this service between 110 kHz and 160 kHz. Exceptionally, class J2B or J7B emissions are also authorized in the bands between 110 kHz and 160 kHz for stations of the maritime mobile service.

110-255 kHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
110-112	110-112 FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	110-112 FIXED MARITIME MOBILE RADIONAVIGATION (6) (8)
112-117.6	RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64	RADIONAVIGATION (6) Fixed Maritime mobile (8)
117.6-126	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION (6) (8)
126-129	RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64	RADIONAVIGATION (6) Fixed Maritime mobile (8)
129-130	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION (6) (8)
130-135.7	FIXED MARITIME MOBILE RADIONAVIGATION 5.64	FIXED MARITIME MOBILE RADIONAVIGATION (8)
135.7-137.8	FIXED MARITIME MOBILE RADIONAVIGATION Amateur 5.67A 5.64	FIXED MARITIME MOBILE RADIONAVIGATION Amateur (9) (8)
137.8-160	FIXED MARITIME MOBILE RADIONAVIGATION 5.64	FIXED MARITIME MOBILE RADIONAVIGATION (8)
160-190	FIXED Aeronautical radionavigation	FIXED Aeronautical radionavigation
190-200	AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION

9. (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.)

200-415 kHz

Allocation to services		
Frequency	Region 2	Usage in Sri Lanka
200-285	AERONAUTICAL RADIONAVIGATION Aeronautical mobile	AERONAUTICAL RADIONAVIGATION Aeronautical mobile
285-315	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) (10)
315-325	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) (10)
325-405	AERONAUTICAL RADIONAVIGATION Aeronautical mobile	AERONAUTICAL RADIONAVIGATION Aeronautical mobile
405-415	RADIONAVIGATION 5.76 Aeronautical mobile	RADIONAVIGATION (11) Aeronautical mobile

10. (5.73) The band 285-325 kHz 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)

11. (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.

415-495 kHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
415-472	MARITIME MOBILE 5.79 Aeronautical radionavigation 5.77 5.80 5.82	MARITIME MOBILE (13) Aeronautical radionavigation (12) (16)
472-479	MARITIME MOBILE 5.79 Amateur 5.80A Aeronautical radionavigation 5.77 5.80 5.82	MARITIME MOBILE (13) Amateur (15) Aeronautical radionavigation (12) (16)
479-495	MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.77 5.80 5.82	MARITIME MOBILE (13) (14) Aeronautical radionavigation (12) (16)

12. (5.77) Different category of service: The allocation of the frequency band 415-495 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. (WRC19)

13. (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)

14. (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)

15. (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. 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. (WRC12)

16. (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)

495-1 800 kHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
495-505	MARITIME MOBILE 5.82C	MARITIME MOBILE (17)
505-526.5	MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Land mobile	MARITIME MOBILE (13) (14) (18) AERONAUTICAL RADIONAVIGATION Aeronautical mobile Land mobile
526.5-535	BROADCASTING Mobile	BROADCASTING Mobile
535-1 606.5	BROADCASTING	BROADCASTING <i>Broadcast-LFMF</i>
1 606.5-1 800	FIXED MOBILE RADIOLOCATION RADIONAVIGATION 5.91	FIXED MOBILE RADIOLOCATION RADIONAVIGATION (19)

17. (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)

18. (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)

19. (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)

1 800-2 194 kHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
1 800-2 000	AMATEUR FIXED MOBILE except aeronautical mobile RADIONAVIGATION Radiolocation	AMATEUR FIXED MOBILE except aeronautical mobile RADIONAVIGATION Radiolocation
2 000-2 065	FIXED MOBILE	FIXED MOBILE <i>Maritime - Maritime Mobile</i>
2 065-2 107	MARITIME MOBILE 5.106	MARITIME MOBILE (21) <i>Maritime - Maritime Mobile</i>
2 107-2 170	FIXED MOBILE	FIXED MOBILE <i>Maritime - Maritime Mobile</i>
2 170-2 173.5	MARITIME MOBILE	MARITIME MOBILE <i>Maritime - Maritime Mobile</i>
2 173.5-2 190.5	MOBILE (distress and calling) 5.108 5.109 5.110 5.111	MOBILE (distress and calling) (22) (23) (24) (25) <i>Maritime - Maritime Mobile</i>
2 190.5-2 194	MARITIME MOBILE	MARITIME MOBILE

20. (5.97) 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.

21. (5.106) 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.

22. (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 of ITU radio regulations. (WRC07)

23. (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.

24. (5.110) The frequencies 2 174.5 kHz, 4 177.5 kHz, 6 268 kHz, 8 376.5 kHz, 12 520 kHz and 16 695 kHz are international distress frequencies for narrow-band direct-printing telegraphy. The conditions for the use of these frequencies are prescribed in Article 31.

25. (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)

2 194-3 230 kHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
2 194-2 300	FIXED MOBILE 5.112	MARITIME MOBILE Fixed (26) <i>Maritime - Maritime Mobile</i>
2 300-2 495	FIXED MOBILE BROADCASTING 5.113	FIXED MOBILE BROADCASTING (27) <i>Maritime - Maritime Mobile</i>
2 495-2 501	STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)
2 501-2 502	STANDARD FREQUENCY AND TIME SIGNAL Space Research	STANDARD FREQUENCY AND TIME SIGNAL Space Research
2 502-2 505	STANDARD FREQUENCY AND TIME SIGNAL	STANDARD FREQUENCY AND TIME SIGNAL
2 505-2 850	FIXED MOBILE	FIXED MOBILE <i>Maritime - Maritime Mobile</i>
2 850-3 025	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) (25) (28)
3 025-3 155	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
3 155-3 200	FIXED MOBILE except aeronautical mobile (R) 5.116 5.117	FIXED MOBILE except aeronautical mobile (R) (29)
3 200-3 230	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	FIXED MOBILE except aeronautical mobile (R) BROADCASTING (27) (29) <i>Maritime - Maritime Mobile</i>

26. (5.112) Alternative allocation: The frequency band 2 194-2 300 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC19)

27. (5.113) For the conditions for the use of the bands 2 300-2 495 kHz 3 200-3 400 kHz, 4 750-4 995 kHz and 5 005-5 060 kHz by the broadcasting service.

28. (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)

29. (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.

3 230-5 003 kHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
3 230-3 400	FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116	FIXED MOBILE except aeronautical mobile BROADCASTING (27) (29)
3 400-3 500	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
3 500-3 900	AMATEUR FIXED MOBILE	AMATEUR FIXED MOBILE <i>Land Mobile - Private</i>
3 900-3 950	AERONAUTICAL MOBILE BROADCASTING	AERONAUTICAL MOBILE BROADCASTING
3 950-4 000	FIXED BROADCASTING 5.126	FIXED BROADCASTING (30)
4 000-4 063	FIXED MARITIME MOBILE 5.127 5.126	FIXED MARITIME MOBILE (31) (30) <i>Maritime - Maritime Mobile</i>
4 063-4 438	MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128	MARITIME MOBILE (14) (23) (24) (33) (34) (35) (32) <i>Maritime - Maritime Mobile</i>
4 438-4 488	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A	FIXED MOBILE except aeronautical mobile Radiolocation 52.
4 488-4 650	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile <i>Maritime - Maritime Mobile</i>
4 650-4 700	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
4 700-4 750	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
4 750-4 850	FIXED BROADCASTING 5.113 Land mobile	FIXED BROADCASTING (27) Land mobile
4 850-4 995	FIXED LAND MOBILE BROADCASTING 5.113	FIXED LAND MOBILE BROADCASTING (27)
4 995-5 003	STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)

30. (5.126) the stations of those services to which the band 3 995-4 005 kHz is allocated may transmit standard frequency and time signals.

31. (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).

32. (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.

33. (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)

34. (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)

35. (5.132) The frequencies 4 210 kHz, 6 314 kHz, 8 416.5 kHz, 12 579 kHz, 16 806.5 kHz, 19 680.5 kHz, 22 376 kHz and 26 100.5 kHz are the international frequencies for the transmission of maritime safety information (MSI) (see Appendix 17).

36. (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)

5 003-7 000 kHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
5 003-5 005	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research
5 005-5 060	FIXED BROADCASTING 5.113	FIXED BROADCASTING (27) Land Mobile - Private
5 060-5 250	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile
5 250-5 275	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A	FIXED MOBILE except aeronautical mobile Radiolocation (36)
5 275-5 351.5	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile
5 351.5-5 366.5	FIXED MOBILE except aeronautical mobile Amateur 5.133B	FIXED MOBILE except aeronautical mobile Amateur (37)
5 366.5-5 450	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile
5 450-5 480	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE
5 480-5 680	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) (25) (28)
5 680-5 730	AERONAUTICAL MOBILE (OR) 5.111 5.115	AERONAUTICAL MOBILE (OR) (25) (28)
5 730-5 900	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R) Land Mobile - Private
5 900-5 950	BROADCASTING 5.134 5.136	BROADCASTING (38) (39)
5 950-6 200	BROADCASTING	BROADCASTING
6 200-6 525	MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137	MARITIME MOBILE (23) (24) (33) (35) (40) Maritime - Maritime Mobile Maritime - Ship Station
6 525-6 685	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
6 685-6 765	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)

6 765-7 000	FIXED MOBILE except aeronautical mobile (R) 5.138	FIXED MOBILE except aeronautical mobile (R) (41) <i>Land Mobile - Private</i>
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37. (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.).

38. (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)

39. (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 mobile except aeronautical mobile (R) service), 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)

40. (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.

41. (5.138) The following bands:

- 6 765-6 795 kHz (centre frequency 6 780 kHz),
- 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.

7 000-7 450 kHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
7 000-7 100	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE
7 100-7 200	AMATEUR	AMATEUR
7 200-7 300	BROADCASTING	BROADCASTING
7 300-7 400	BROADCASTING 5.134 5.143 5.143A	BROADCASTING (38) (43) (44)
7 400-7 450	BROADCASTING 5.143A	BROADCASTING (44)

42. (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.

43. (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)

44. (5.143A) 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)

7 450-13 360 kHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
7 450-8 100	FIXED MOBILE except aeronautical mobile (R) 5.144	FIXED MOBILE except aeronautical mobile (R) (45) Land Mobile - Private
8 100-8 195	FIXED MARITIME MOBILE	FIXED MARITIME MOBILE Maritime - Maritime Mobile
8 195-8 815	MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111	MARITIME MOBILE (23) (24) (35) (46) (25) Maritime - Maritime Mobile
8 815-8 965	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
8 965-9 040	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
9 040-9 305	FIXED	FIXED
9 305-9 355	FIXED Radiolocation 5.145A	FIXED Radiolocation (47)
9 355-9 400	FIXED	FIXED
9 400-9 500	BROADCASTING 5.134 5.146	BROADCASTING (38) (48)
9 500-9 900	BROADCASTING 5.147	BROADCASTING (49) Broadcast - HF
9 900-9 995	FIXED	FIXED
9 995-10 003	STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) (25)
10 003-10 005	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	STANDARD FREQUENCY AND TIME SIGNAL Space research (25)
10 005-10 100	AERONAUTICAL MOBILE (R) 5.111	AERONAUTICAL MOBILE (R) (25)
10 100-10 150	FIXED Amateur	FIXED Amateur
10 150-11 175	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R) Land Mobile - Private
11 175-11 275	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
11 275-11 400	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
11 400-11 600	FIXED	FIXED
11 600-11 650	BROADCASTING 5.134 5.146	BROADCASTING (38) (48)
11 650-12 050	BROADCASTING 5.147	BROADCASTING (49) Broadcast - HF
12 050-12 100	BROADCASTING 5.134 5.146	BROADCASTING (38) (48)

12 100-12 230	FIXED	FIXED
12 230-13 200	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE (23) (24) (35) (46)
13 200-13 260	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
13 260-13 360	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)

45. (5.144) the stations of those services to which the band 7 995-8 005 kHz is allocated may transmit standard frequency and time signals.

46. (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)

47. (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)

48. (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)

49. (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.

13 360-18 030 kHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
13 360-13 410	FIXED RADIO ASTRONOMY 5.149	FIXED RADIO ASTRONOMY (50)
13 410-13 450	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)
13 450-13 550	FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132A	FIXED Mobile except aeronautical mobile (R) Radiolocation (36) <i>Land Mobile - Private</i>
13 550-13 570	FIXED Mobile except aeronautical mobile (R) 5.150	FIXED Mobile except aeronautical mobile (R) (51)
13 570-13 600	BROADCASTING 5.134 5.151	BROADCASTING (38) (52)
13 600-13 800	BROADCASTING	BROADCASTING
13 800-13 870	BROADCASTING 5.134 5.151	BROADCASTING (38) (52)
13 870-14 000	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)
14 000-14 250	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE
14 250-14 350	AMATEUR	AMATEUR
14 350-14 990	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)
14 990-15 005	STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) (25)
15 005-15 010	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research
15 010-15 100	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
15 100-15 600	BROADCASTING	BROADCASTING
15 600-15 800	BROADCASTING 5.134 5.146	BROADCASTING (38) (48)
15 800-16 100	FIXED 5.153	FIXED (53)
16 100-16 200	FIXED Radiolocation 5.145A	FIXED Radiolocation (47)
16 200-16 360	FIXED	FIXED <i>Land Mobile - Private</i>
16 360-17 410	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE (23) (24) (35) (46)
17 410-17 480	FIXED	FIXED
17 480-17 550	BROADCASTING 5.134 5.146	BROADCASTING (38) (48)

17 550-17 900	BROADCASTING	BROADCASTING <i>Broadcast - HF</i>
17 900-17 970	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
17 970-18 030	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)

50. (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)

51. (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.

52. (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)

53. (5.153) The stations of those services to which the band 15 995-16 005 kHz is allocated may transmit standard frequency and time signals.

18 030-23 350 kHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
18 030-18 052	FIXED	FIXED
18 052-18 068	FIXED Space research	FIXED Space research
18 068-18 168	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE
18 168-18 780	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile Land Mobile - Private
18 780-18 900	MARITIME MOBILE	MARITIME MOBILE
18 900-19 020	BROADCASTING 5.134 5.146	BROADCASTING (38) (48)
19 020-19 680	FIXED	FIXED
19 680-19 800	MARITIME MOBILE 5.132	MARITIME MOBILE (35)
19 800-19 990	FIXED	FIXED
19 990-19 995	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	STANDARD FREQUENCY AND TIME SIGNAL Space research (25)
19 995-20 010	STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) (25)
20 010-21 000	FIXED Mobile	FIXED Mobile Land Mobile - Private
21 000-21 450	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE
21 450-21 850	BROADCASTING	BROADCASTING
21 850-21 870	FIXED 5.155A 5.155	FIXED
21 870-21 924	FIXED 5.155B	FIXED (54)
21 924-22 000	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
22 000-22 855	MARITIME MOBILE 5.132	MARITIME MOBILE (35)
22 855-23 000	FIXED	FIXED
23 000-23 200	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)
23 200-23 350	FIXED 5.156A AERONAUTICAL MOBILE (OR)	FIXED (55) AERONAUTICAL MOBILE (OR)

54. (5.155B) The band 21 870-21 924 kHz is used by the fixed service for provision of services related to aircraft flight safety.

55. (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.

23 350-27 500 kHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
23 350-24 000	FIXED MOBILE except aeronautical mobile 5.157	FIXED MOBILE except aeronautical mobile (56)
24 000-24 450	FIXED LAND MOBILE	FIXED LAND MOBILE
24 450-24 600	FIXED LAND MOBILE Radiolocation 5.132A	FIXED LAND MOBILE Radiolocation (36)
24 600-24 890	FIXED LAND MOBILE	FIXED LAND MOBILE <i>Land Mobile - Private</i>
24 890-24 990	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE
24 990-25 005	STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)
25 005-25 010	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research
25 010-25 070	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile
25 070-25 210	MARITIME MOBILE	MARITIME MOBILE
25 210-25 550	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile
25 550-25 670	RADIO ASTRONOMY 5.149	RADIO ASTRONOMY (50)
25 670-26 100	BROADCASTING	BROADCASTING
26 100-26 175	MARITIME MOBILE 5.132	MARITIME MOBILE (35)
26 175-26 200	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile
26 200-26 350	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A	FIXED MOBILE except aeronautical mobile Radiolocation (36)
26 350-27 500	FIXED MOBILE except aeronautical mobile 5.150	FIXED MOBILE except aeronautical mobile (51) <i>Land Mobile - Citizen Band Fixed Service - Radio Telemetry</i>

56. (5.157) The use of the band 23 350-24 000 kHz by the maritime mobile service is limited to inter-ship radiotelegraphy.

27.5-40.98 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
27.5-28	METEOROLOGICAL AIDS FIXED MOBILE	METEOROLOGICAL AIDS FIXED MOBILE
28-29.7	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE
29.7-30.005	FIXED MOBILE	FIXED MOBILE
30.005-30.01	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH
30.01-37.5	FIXED MOBILE	FIXED MOBILE
37.5-38.25	FIXED MOBILE Radio astronomy 5.149	FIXED MOBILE Radio astronomy (50)
38.25-39.5	FIXED MOBILE	FIXED MOBILE
39.5-39.986	FIXED MOBILE RADIOLOCATION 5.132A	FIXED MOBILE RADIOLOCATION (36)
39.986-40	FIXED MOBILE RADIOLOCATION 5.132A Space research	FIXED MOBILE RADIOLOCATION (36) Space research
40-40.02	FIXED MOBILE Space research	FIXED MOBILE Space research
40.02-40.98	FIXED MOBILE 5.150	FIXED MOBILE (51)

40.98-47 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
40.98-41.015	FIXED MOBILE Space research 5.161	FIXED MOBILE Space research
41.015-42	FIXED MOBILE 5.161	FIXED MOBILE
42-42.5	FIXED MOBILE 5.161	FIXED MOBILE <i>Land Mobile - Private</i>
42.5-44	FIXED MOBILE 5.161	FIXED MOBILE <i>Land Mobile - Private</i>
44-47	FIXED MOBILE	FIXED MOBILE

47-75.2 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
47-50	FIXED MOBILE BROADCASTING	FIXED MOBILE BROADCASTING
50-54	AMATEUR	AMATEUR
54-68	FIXED MOBILE BROADCASTING	BROADCASTING <i>Broadcast - TV</i>
68-74.8	FIXED MOBILE 5.149	FIXED MOBILE (50) <i>Fixed Service - Radio Telemetry</i>
74.8-75.2	AERONAUTICAL RADIONAVIGATION 5.180	AERONAUTICAL RADIONAVIGATION (57)

57. (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.

75.2-137.175 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
75.2-75.4	FIXED MOBILE	FIXED MOBILE
75.4-87	FIXED MOBILE	FIXED MOBILE <i>Land Mobile - Private</i> <i>Maritime - Maritime Mobile</i>
87-100	FIXED MOBILE BROADCASTING	BROADCASTING <i>FM Radio Broadcasting</i>
100-108	BROADCASTING	
108-117.975	AERONAUTICAL RADIONAVIGATION 5.197A	AERONAUTICAL RADIONAVIGATION (58)
117.975-137	AERONAUTICAL MOBILE (R) 5.111 5.200	AERONAUTICAL MOBILE (R) (25) (59) <i>Aeronautical - Aeronautical Mobile</i> <i>Aeronautical - Aircraft Station</i>
137-137.025	SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.207 5.208	SPACE OPERATION (space-to-Earth) (60) METEOROLOGICAL SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) (62) (63) (64) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) (61)
137.025-137.175	SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.207 5.208	SPACE OPERATION (space-to-Earth) (60) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) (62) (63) (64) (61)

58. (5.197A) *Additional allocation:* the band 108-117.975 MHz is also allocated on a primary basis to the aeronautical mobile (R) service, limited to systems operating in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution **413 (Rev.WRC-07)***. The use of the band 108-112 MHz by the aeronautical mobile

(R) service shall be limited to systems composed of ground-based transmitters and associated receivers that provide navigational information in support of air navigation functions in accordance with recognized international aeronautical standards. (WRC-07)

59. (5.200) In the band 117.975-137 MHz, the frequency 121.5 MHz is the aeronautical emergency frequency and, where required, the frequency 123.1 MHz is the aeronautical frequency auxiliary to 121.5 MHz. Mobile stations of the maritime mobile service may communicate on these frequencies under the conditions laid down in Article 31 for distress and safety purposes with stations of the aeronautical mobile service. (WRC-07)

60. (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)

61. (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)

62. (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)

63. (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)

64. (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)

65. (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)

137.175-148 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
137.175-137.825	SPACE OPERATION (space-to-Earth) 5.203C 5.209A METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.207 5.208	SPACE OPERATION (space-to-Earth) (60) (65) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) (62) (63) (64) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) (61)
137.825-138	SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.207 5.208	SPACE OPERATION (space-to-Earth) (60) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) (62) (63) (64) (61)
138-143.6	FIXED MOBILE Space research (space-to-Earth) 5.207	FIXED MOBILE Space research (space-to-Earth) Land Mobile - Private
143.6-143.65	FIXED MOBILE SPACE RESEARCH (space-to-Earth) 5.207	FIXED MOBILE SPACE RESEARCH (space-to-Earth) Land Mobile - Private
143.65-144	FIXED MOBILE Space research (space-to-Earth) 5.207	FIXED MOBILE Space research (space-to-Earth) Land Mobile - Private
144-146	AMATEUR AMATEUR-SATELLITE 5.216	AMATEUR AMATEUR-SATELLITE (66) Amateur Radio - AR Private
146-148	AMATEUR FIXED MOBILE	AMATEUR FIXED MOBILE Land Mobile - Private

66. (5.216) *Additional allocation:* in China, the band 144-146 MHz is also allocated to the aeronautical mobile (OR) service on a secondary basis.

148-156.8375 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
148-149.9	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.218A 5.219 5.221	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) (64) (67) (68) (69) (71) Land Mobile - Private Fixed Service - Radio Telemetry
149.9-150.05	MOBILE-SATELLITE (Earth-to-space) 5.209 5.220	MOBILE-SATELLITE (Earth-to-space) (64) (70)
150.05-154	FIXED MOBILE	FIXED MOBILE Fixed Service - Radio Telemetry Land Mobile - Private
154-156.4875	FIXED MOBILE 5.226	FIXED MOBILE (72) Land Mobile - Private Maritime - Maritime Mobile
156.4875-156.5625	MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227	MARITIME MOBILE (distress and calling via DSC) (25) (72) (73) Maritime - Maritime Mobile
156.5625-156.7625	FIXED MOBILE 5.226	FIXED MOBILE (72) Maritime - Maritime Mobile
156.7625-156.7875	MARITIME MOBILE Mobile-satellite (Earth-to-space) 5.111 5.226 5.228	MARITIME MOBILE Mobile-satellite (Earth-to-space) (25) (72) (74)
156.7875-156.8125	MARITIME MOBILE (distress and calling) 5.111 5.226	MARITIME MOBILE (distress and calling) (25) (72) Maritime - Maritime Mobile Maritime - Shore Stations Maritime - Ship Station
156.8125-156.8375	MARITIME MOBILE Mobile-satellite (Earth-to-space) 5.111 5.226 5.228	MARITIME MOBILE Mobile-satellite (Earth-to-space) (25) (72) (74)

67. (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.

68. (5.218A) The frequency band 148-149.9 MHz in the space operation service (Earth-to-space) may be used by non-geostationary-satellite systems with short-duration missions. Non-geostationary-satellite systems in the space operation service used for a short-duration mission in accordance with Resolution **32 (WRC-19)** of the Radio Regulations are not subject to agreement under No. 9.21. At the stage of coordination, the provisions of Nos. 9.17 and 9.18 also apply. In

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

69. (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)

70. (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)

71. (5.221) Stations of the mobile-satellite service in the frequency band 148-149.9 MHz shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations in the following countries: Albania, Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Benin, Bosnia and Herzegovina, Botswana, Brunei Darussalam, Bulgaria, Cameroon, China, Cyprus, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Croatia, Cuba, Denmark, Djibouti, Egypt, the United Arab Emirates, Eritrea, Spain, Estonia, Eswatini, Ethiopia, the Russian Federation, Finland, France, Gabon, Georgia, Ghana, Greece, Guinea, Guinea Bissau, Hungary, India, Iran (Islamic Republic of), Ireland, Iceland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Lesotho, Latvia, Lebanon, Libya, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Malaysia, Mali, Malta, Mauritania, Moldova, Mongolia, Montenegro, Mozambique, Namibia, Norway, New Zealand, Oman, Uganda, Uzbekistan, Pakistan, Panama, Papua New Guinea, Paraguay, the Netherlands, the Philippines, Poland, Portugal, Qatar, the Syrian Arab Republic, Kyrgyzstan, Dem. People's Rep. of Korea, Slovakia, Romania, the United Kingdom, Senegal, Serbia, Sierra Leone, Singapore, Slovenia, Sudan, Sri Lanka, South Africa, Sweden, Switzerland, Tanzania, Chad, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Ukraine, Viet Nam, Yemen, Zambia and Zimbabwe. (WRC19)

72. (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)

73. (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)

74. (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)

156.8375-161.9375 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
156.8375-157.1875	FIXED MOBILE 5.226	FIXED MOBILE (72) <i>Maritime - Maritime Mobile</i>
157.1875-157.3375	FIXED MOBILE Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228AC 5.226	FIXED MOBILE Maritime mobile-satellite (62) (63) (75) (76) (72) <i>Maritime - Maritime Mobile</i>
157.3375-161.7875	FIXED MOBILE 5.226	FIXED MOBILE (72) <i>Maritime - Maritime Mobile</i> <i>Land Mobile - Private</i> <i>Maritime - Ship Station</i> <i>Fixed Service - Network</i>
161.7875-161.9375	FIXED MOBILE Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228AC 5.226	FIXED MOBILE Maritime mobile-satellite (62) (63) (75) (76) (72) <i>Maritime - Shore Stations</i> <i>Maritime - Maritime Mobile</i>

75. (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)

76. (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)

161.9375-223 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
161.9375-161.9625	FIXED MOBILE Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226	FIXED MOBILE Maritime mobile-satellite (Earth-to-space) (78) (72) Maritime - Shore Stations
161.9625-161.9875	MARITIME MOBILE Aeronautical mobile (OR) 5.228E Mobile-satellite (Earth-to-space) 5.228F 5.226	MARITIME MOBILE Aeronautical mobile (OR) (82) Mobile-satellite (Earth-to-space) (83) (72)
161.9875-162.0125	FIXED MOBILE Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226	FIXED MOBILE Maritime mobile-satellite (Earth-to-space) (78) (72) Maritime - Shore Stations
162.0125-162.0375	MARITIME MOBILE Aeronautical mobile (OR) 5.228E Mobile-satellite (Earth-to-space) 5.228F 5.226	MARITIME MOBILE Aeronautical mobile (OR) (82) Mobile-satellite (Earth-to-space) (83) (72) Maritime - Maritime Mobile
162.0375-174	FIXED MOBILE 5.226	FIXED MOBILE (72) Land Mobile – Private Maritime - Maritime Mobile Fixed Service – Network Fixed Service - Radio Telemetry
174-223	FIXED MOBILE BROADCASTING	BROADCASTING Television Broadcasting Service

77. (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)

78. (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)

79. (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)

80. (5.228C) The use of the frequency bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz by the maritime mobile service and the mobile-satellite (Earth-to-space) service

is limited to the automatic identification system (AIS). The use of these frequency bands by the aeronautical mobile (OR) service is limited to AIS emissions from search and rescue aircraft operations. The AIS operations in these frequency bands shall not constrain the development and use of the fixed and mobile services operating in the adjacent frequency bands. (WRC-12)

81. (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)

82. (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)

83. (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)

220-335.4 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
223-230	FIXED MOBILE BROADCASTING AERONAUTICAL RADIONAVIGATION Radiolocation	BROADCASTING <i>Television Broadcasting Service</i>
230-235	FIXED MOBILE AERONAUTICAL RADIONAVIGATION	FIXED MOBILE AERONAUTICAL RADIONAVIGATION
235-267	FIXED MOBILE 5.111 5.254 5.256 5.256A	FIXED MOBILE (25) (84) (86)
267-272	FIXED MOBILE Space operation (space-to-Earth) 5.254 5.257	FIXED MOBILE Space operation (space-to-Earth) (84) (87)
272-273	SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	SPACE OPERATION (space-to-Earth) FIXED MOBILE (84)
273-312	FIXED MOBILE 5.254	FIXED MOBILE (84) <i>Fixed Service - Network</i>
312-315	FIXED MOBILE Mobile-satellite (Earth-to-space) 5.254 5.255	FIXED MOBILE Mobile-satellite (Earth-to-space) (84) (85) <i>Fixed Service - Network</i>
315-322	FIXED MOBILE 5.254	FIXED MOBILE (84) <i>Fixed Service - Network</i>
322-328.6	FIXED MOBILE RADIO ASTRONOMY 5.149	FIXED MOBILE RADIO ASTRONOMY (50)
328.6-335.4	AERONAUTICAL RADIONAVIGATION 5.258	AERONAUTICAL RADIONAVIGATION (88)

84. (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 of Radio Regulations.** (WRC-03)

85. (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.

86. (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)

87. (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.

88. (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).

335.4-410 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
335.4-387	FIXED MOBILE 5.254	FIXED MOBILE (84) Fixed Service - Network Land Mobile - Trunking Operators
387-390	FIXED MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255	FIXED MOBILE Mobile-satellite (space-to-Earth) (62) (63) (84) (85) Fixed Service - Network
390-399.9	FIXED MOBILE 5.254	FIXED MOBILE (84) Fixed Service - Network Land Mobile - Trunking Operators
399.9-400.05	MOBILE-SATELLITE (Earth-to-space) 5.209 5.220 5.260A 5.260B	MOBILE-SATELLITE (Earth-to-space) (64) (70) (90) (91)
400.05-400.15	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 5.261	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) (92)
400.15-401	METEOROLOGICAL AIDS METEOROLOGICAL- SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to- Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to- Earth) 5.263 Space operation (space-to-Earth) 5.264	METEOROLOGICAL AIDS METEOROLOGICAL- SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to- Earth) (62) (63) (64) SPACE RESEARCH (space-to- Earth) (93) Space operation (space-to-Earth) (94)
401-402	METEOROLOGICAL AIDS SPACE OPERATION (space-to- Earth) EARTH EXPLORATION- SATELLITE (Earth-to-space) METEOROLOGICAL- SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile 5.264A 5.264B	METEOROLOGICAL AIDS SPACE OPERATION (space-to- Earth) EARTH EXPLORATION- SATELLITE (Earth-to-space) METEOROLOGICAL- SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile (95) (96) Fixed Service - Radio Telemetry Satellite - Fixed Earth Station
402-403	METEOROLOGICAL AIDS EARTH EXPLORATION- SATELLITE (Earth-to-space) METEOROLOGICAL- SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile 5.264A 5.264B	METEOROLOGICAL AIDS EARTH EXPLORATION- SATELLITE (Earth-to-space) METEOROLOGICAL- SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile (95) (96) Satellite - Fixed Earth Station

403-406	METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile 5.265	METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile (97) <i>Fixed Service - Radio Telemetry</i>
406-406.1	MOBILE-SATELLITE (Earth-to-space) 5.265 5.266 5.267	MOBILE-SATELLITE (Earth-to-space) (97) (98) (99)
406.1-410	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.265	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY (50) (97) <i>Land Mobile - Private Fixed Service - Network</i>

89. (5.260) (SUP - WRC-15)

90. (5.260A) In the frequency band 399.9-400.05 MHz, the maximum e.i.r.p. of any emission of earth stations in the mobile-satellite service shall not exceed 5 dBW in any 4 kHz band and the maximum e.i.r.p. of each earth station in the mobile-satellite service shall not exceed 5 dBW in the whole 399.9-400.05 MHz frequency band. Until 22 November 2022, this limit shall not apply to satellite systems for which complete notification information has been received by the Radiocommunication Bureau by 22 November 2019 and that have been brought into use by that date. After 22 November 2022, these limits shall apply to all systems within the mobile-satellite service operating in this frequency band.

In the frequency band 399.99-400.02 MHz, the e.i.r.p. limits as specified above shall apply after 22 November 2022 to all systems within the mobile-satellite service. Administrations are requested that their mobile-satellite service satellite links in the 399.99-400.02 MHz frequency band comply with the e.i.r.p. limits as specified above, after 22 November 2019. (WRC-19)

91. (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)

92. (5.261) Emissions shall be confined in a band of ± 25 kHz about the standard frequency 400.1 MHz.

93. (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.

94. (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.

95. (5.264A) In the frequency band 401-403 MHz, the maximum e.i.r.p. of any emission of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 22 dBW in any 4 kHz band for geostationary-satellite systems and non-geostationary-satellite systems with an orbit of apogee equal or greater than 35 786 km.

The maximum e.i.r.p. of any emission of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 7 dBW in any 4 kHz band for non-geostationary-satellite systems with an orbit of apogee lower than 35 786 km.

The maximum e.i.r.p. of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 22 dBW for geostationary-satellite systems and non-geostationary-satellite systems with an orbit of apogee equal or greater than 35 786 km in the whole 401-403 MHz frequency band. The maximum e.i.r.p. of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 7 dBW for non-geostationary-satellite systems with an orbit of apogee lower than 35 786 km in the whole 401-403 MHz frequency band.

Until 22 November 2029, these limits shall not apply to satellite systems for which complete notification information has been received by the Radiocommunication Bureau by 22 November 2019 and that have been brought into use by that date. After 22 November 2029, these limits shall apply to all systems within the meteorological-satellite service and the Earth exploration-satellite service operating in this frequency band. (WRC-19)

96. (5.264B) Non-geostationary-satellite systems in the meteorological-satellite service and the Earth exploration-satellite service for which complete notification information has been received by the Radiocommunication Bureau before 28 April 2007 are exempt from provisions of No. 5.264A and may continue to operate in the frequency band 401.898-402.522 MHz on a primary basis without exceeding a maximum e.i.r.p. level of 12 dBW. (WRC-19)

97. (5.265) In the frequency band 403-410 MHz, Resolution **205 (Rev.WRC-19)** applies. (WRC-19)

98. (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)

99. (5.267) Any emission capable of causing harmful interference to the authorized uses of the band 406-406.1 MHz is prohibited.

410-460 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
410-420	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) 5.268	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) (100) <i>Fixed Service - Network</i> <i>Land Mobile - Private</i>
420-430	FIXED MOBILE except aeronautical mobile Radiolocation	FIXED MOBILE except aeronautical mobile Radiolocation <i>Fixed Service - Radio Telemetry</i> <i>Land Mobile - Private</i> <i>Fixed Service - Network</i> <i>Land Mobile - Demonstration</i>
430-432	RADIOLOCATION Amateur	RADIOLOCATION Amateur
432-438	RADIOLOCATION Amateur Earth exploration-satellite (active) 5.282	RADIOLOCATION Amateur Earth exploration-satellite (active) (102)
438-440	RADIOLOCATION Amateur	RADIOLOCATION Amateur
440-450	FIXED MOBILE except aeronautical mobile Radiolocation 5.286	FIXED MOBILE except aeronautical mobile Radiolocation (103)
450-452.5	FIXED MOBILE 5.286AA 5.209 5.286 5.286A	FIXED MOBILE (105) (64) (103) (104)
452.5-455	FIXED MOBILE 5.286AA 5.209 5.286 5.286A	FIXED
455-456	FIXED MOBILE 5.286AA 5.209 5.286A	
456-459	FIXED MOBILE 5.286AA 5.287	
459-460	FIXED MOBILE 5.286AA 5.209 5.286A	

100. (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 dB(W/m²) for $70^\circ \leq \delta \leq 90^\circ$, where δ is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. In this frequency band, stations of the space research service (space-to-space) shall not claim protection from, nor constrain the use and development of, stations of the fixed and mobile services. No. **4.10** does not apply. (WRC-15)

101. (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 ITUR RS.12602. 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**. (WRC19)

102. (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.

103. (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.

104. (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)

105. (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)

106. (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)

460-890 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
460-467.5	FIXED MOBILE 5.286AA Meteorological-satellite (space-to-Earth) 5.287 5.289	FIXED MOBILE (105) Meteorological-satellite (space-to-Earth) (106) (107)
467.5-470	FIXED MOBILE 5.286AA Meteorological-satellite (space-to-Earth) 5.287 5.289	FIXED MOBILE (105) Meteorological-satellite (space-to-Earth) (106) (107)
470-585	FIXED MOBILE BROADCASTING	BROADCASTING <i>Television Broadcasting Service</i>
585-610	FIXED MOBILE BROADCASTING RADIONAVIGATION 5.149 5.306	BROADCASTING <i>Television Broadcasting Service</i>
610-806	FIXED MOBILE 5.313A 5.317A	BROADCASTING <i>Television Broadcasting Service</i>
806-824	BROADCASTING 5.149 5.320	FIXED/MOBILE <i>Radio Local Loop, Trunking etc</i> Fixed Service – Network
824-890		MOBILE <i>IMT</i> Land Mobile - Cellular Operators

107. (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.

108. (5.306) *Additional allocation:* The band 608-614 MHz is also allocated to the radio astronomy service on a secondary basis.

109. (5.317A) Frequency band 790-960 MHz which is allocated to the mobile service on a primary basis is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) – see Resolutions **224 (Rev.WRC19)**, **760 (Rev.WRC19)** and **749 (Rev.WRC19)**, where applicable. This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-19)

110. (5.320) *Additional allocation:* 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.

890-1 300 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
890-942	FIXED MOBILE 5.317A BROADCASTING Radiolocation	MOBILE <i>IMT</i> Land Mobile - Cellular Operators
942-960	FIXED MOBILE 5.317A BROADCASTING 5.320	
960-1 164	AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL RADIONAVIGATION 5.328 5.328AA	AERONAUTICAL MOBILE (R) (111) AERONAUTICAL RADIONAVIGATION (112) (114)
1 164-1 215	AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION- SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.328A	AERONAUTICAL RADIONAVIGATION (112) RADIONAVIGATION- SATELLITE (space-to-Earth) (space-to-space) (115) (113)
1 215-1 240	EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION RADIONAVIGATION- SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.332	EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION RADIONAVIGATION- SATELLITE (space-to-Earth) (space-to-space) (115) (116) (117) SPACE RESEARCH (active) (118)
1 240-1 300	EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION RADIONAVIGATION- SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) Amateur 5.282 5.332 5.335A	EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION RADIONAVIGATION- SATELLITE (space-to-Earth) (space-to-space) (115) (116) (117) SPACE RESEARCH (active) Amateur (102) (118) (119)

111. (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)

112. (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)

113. (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)

114. (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)

115. (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)

116. (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. 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)

117. (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)

118. (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)

119. (5.335A) In the band 1 260-1 300 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service and other services allocated by footnotes on a primary basis. (WRC-2000)

1 300-1 525 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
1 300-1 350	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 RADIONAVIGATION- SATELLITE (Earth-to-space) 5.149 5.337A	RADIOLOCATION AERONAUTICAL RADIONAVIGATION (120) RADIONAVIGATION- SATELLITE (Earth-to-space) (50) (121)
1 350-1 400	RADIOLOCATION 5.338A 5.149 5.339	RADIOLOCATION (122) (50) (123)
1 400-1 427	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124) (125)
1 427-1 429	SPACE OPERATION (Earth-to- space) FIXED MOBILE except aeronautical mobile 5.341C 5.338A 5.341	SPACE OPERATION (Earth-to- space) FIXED MOBILE except aeronautical mobile (126) (122) (125)
1 429-1 452	FIXED MOBILE 5.341C 5.338A 5.341	FIXED MOBILE (126) (122) (125) <i>Fixed Service - Network</i>
1 452-1 492	FIXED MOBILE 5.346A BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5.345	FIXED MOBILE (128) BROADCASTING BROADCASTING-SATELLITE (63) (125) (127) <i>Fixed Service - Network</i>
1 492-1 518	FIXED MOBILE 5.341C 5.341	FIXED MOBILE (126) (125) <i>Fixed Service - Network</i>
1 518-1 525	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A 5.341	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) (129) (130) (132) (125)

120. (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.

121. (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)

122. (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)

123. (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.

124. (5.340) All emissions are prohibited in the following bands:

1 400-1 427 MHz,
2 690-2 700 MHz, except those provided for by No. 5.422,
10.68-10.7 GHz, except those provided for by No. 5.483,
15.35-15.4 GHz, except those provided for by No. 5.511,
23.6-24 GHz,
31.3-31.5 GHz,
31.5-31.8 GHz, in Region 2,
48.94-49.04 GHz, from airborne stations
50.2-50.4 GHz,
52.6-54.25 GHz,
86-92 GHz,
100-102 GHz,
109.5-111.8 GHz,
114.25-116 GHz,
148.5-151.5 GHz,
164-167 GHz,
182-185 GHz,
190-191.8 GHz,
200-209 GHz,
226-231.5 GHz,
250-252 GHz. (WRC-03)

125. (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.

126. (5.341C) The frequency bands 1 427-1 452 MHz and 1 492-1 518 MHz are to be used 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)

127. (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)

128. (5.346A) The frequency band 1 452-1 492 MHz is identified for use 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)

129. (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)

130. (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 $-150 \text{ dB(W/m}^2\text{)}$ 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)

1 525-1 610 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
1 525-1 530	SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A Earth exploration-satellite Mobile 5.341 5.351 5.352A 5.354	SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) (63) (132) Earth exploration-satellite Mobile (125) (131) (133) (135)
1 530-1 535	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A Earth exploration-satellite Fixed Mobile 5.341 5.351 5.354	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) (63) (132) (134) Earth exploration-satellite Fixed Mobile (125) (131) (135)
1 535-1 559	MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.341 5.351 5.353A 5.354 5.356 5.357 5.357A	MOBILE-SATELLITE (space-to-Earth) (63) (132) (125) (131) (134) (135) (136) (137) (138)
1 559-1 610	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION- SATELLITE (space-to-Earth) (space-to-space) 5.208B 5.328B 5.329A 5.341	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION- SATELLITE (space-to-Earth) (space-to-space) (63) (115) (117) (125)

131. (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.

132. (5.351A) For the use of the bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 645.5 MHz, 1 646.5-1 660.5 MHz, 1 668-1 675 MHz, 1 980-2 010 MHz, 2 170-2 200 MHz, 2 483.5-2 520 MHz and 2 670-2 690 MHz by the mobile-satellite service, see Resolutions **212 (Rev.WRC-07)** and **225 (Rev.WRC-07)**. (WRC-07)

133. (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)

134. (5.353A) In applying the procedures of Section II of Article 9 to the mobile-satellite service in the bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz, priority shall be given to accommodating the spectrum requirements for distress, urgency and safety communications of the Global Maritime Distress and Safety System (GMDSS). Maritime mobile-satellite distress, urgency and safety communications shall have priority access and immediate availability over all other mobile satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, distress, urgency and safety communications of the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution 222 (WRC-2000) shall apply.) (WRC-2000)

135. (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.

136. (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).

137. (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.

138. (5.357A) In applying the procedures of Section II of Article 9 to the mobile-satellite service in the frequency bands 1 545-1 555 MHz and 1 646.5-1 656.5 MHz, priority shall be given to accommodating the spectrum requirements of the aeronautical mobile-satellite (R) service providing transmission of messages with priority 1 to 6 in Article 44. Aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article 44 shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article 44. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution 222 (Rev.WRC-12)* shall apply.) (WRC-12)

1 610-1 660 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
1 610-1 610.6	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-space) 5.341 5.364 5.366 5.367 5.368 5.372	MOBILE-SATELLITE (Earth-to-space) (132) AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-space) (125) (139) (141) (142) (143) (144)
1 610.6-1 613.8	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-space) 5.149 5.341 5.364 5.366 5.367 5.368 5.372	MOBILE-SATELLITE (Earth-to-space) (132) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-space) (50) (125) (139) (141) (142) (143) (144)
1 613.8-1 621.35	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) 5.208B Radiodetermination-satellite (Earth- to-space) 5.341 5.364 5.365 5.366 5.367 5.368 5.372	MOBILE-SATELLITE (Earth-to-space) (132) AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) (63) Radiodetermination-satellite (Earth- to-space) (125) (139) (140) (141) (142) (143) (144)
1 621.35-1 626.5	MARITIME MOBILE- SATELLITE (space-to- Earth) 5.373 5.373A MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) except maritime mobile satellite (space-to-Earth) Radiodetermination-satellite (Earth-to-space) 5.208B 5.341 5.364 5.365 5.366 5.367 5.368 5.372	MARITIME MOBILE- SATELLITE (space-to- Earth) (145) (146) MOBILE-SATELLITE (Earth-to-space) (132) AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) except maritime mobile satellite (space-to-Earth) Radiodetermination-satellite (Earth-to-space) (63) (125) (139) (140) (141) (142) (143) (144)
1 626.5-1 660	MOBILE-SATELLITE (Earth-to- space) 5.351A 5.341 5.351 5.353A 5.354 5.357A 5.374 5.375 5.376	MOBILE-SATELLITE (Earth-to- space) (132) (125) (131) (134) (135) (138) (147) (148) (149) Satellite - Mobile Earth Station Satellite - Fixed Earth Station

139. (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. 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.

140. (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.

141. (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.

142. (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)

143. (5.368) The provisions of No. 4.10 do not apply with respect to the radiodetermination-satellite and mobile-satellite services in the frequency band 1 610-1 626.5 MHz. However, No. 4.10 applies in the frequency band 1 610-1 626.5 MHz with respect to the aeronautical radionavigation-satellite service when operating in accordance with No. 5.366, the aeronautical mobile satellite (R) service when operating in accordance with No. 5.367, and in the frequency band 1 621.35-1 626.5 MHz with respect to the maritime mobile-satellite service when used for GMDSS. (WRC-19)

144. (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)

145. (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)

146. (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)

147. (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.

148. (5.375) The use of the band 1 645.5-1 646.5 MHz by the mobile-satellite service (Earth-to-space) and for inter-satellite links is limited to distress and safety communications (see Article 31).

149. (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.

1 660-1 710 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
1 660-1 660.5	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.376A	MOBILE-SATELLITE (Earth-to-space) (132) RADIO ASTRONOMY (50) (125) (131) (135) (150)
1 660.5-1 668	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379A	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile (50) (125) (151)
1 668-1 668.4	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379A	MOBILE-SATELLITE (Earth-to-space) (132) (152) (153) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile (50) (125) (151)
1 668.4-1 670	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY 5.149 5.341 5.379D 5.379E	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) (132) (152) (153) RADIO ASTRONOMY (50) (125) (154) (155)
1 670-1 675	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.341 5.379D 5.379E 5.380A	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (Earth-to-space) (132) (152) (125) (154) (155) (156)
1 675-1 690	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile (125)
1 690-1 700	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) 5.289 5.341 5.381	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) (107) (125)
1 700-1 710	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile (107) (125)

150. (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)

151. (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.

152. (5.379B) The use of the band 1 668-1 675 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. In the band 1 668-1 668.4 MHz, Resolution **904 (WRC-07)** shall apply. (WRC-07)

153. (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)

154. (5.379D) For sharing of the band 1 668.4-1 675 MHz between the mobile-satellite service and the fixed and mobile services, Resolution **744 (Rev.WRC-07)** shall apply. (WRC-07)

155. (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)

156. (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)

1 710-2 170 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
1 710-1820	FIXED MOBILE 5.384A 5.388A 5.149 5.341 5.385 5.387 5.388	MOBILE <i>IMT</i>
1820-1880	FIXED MOBILE 5.384A 5.388A 5.149 5.341 5.385 5.387 5.388	<i>Land Mobile - Cellular Operators</i>
1880-1920	FIXED MOBILE 5.384A 5.388A 5.149 5.341 5.385 5.387 5.388	FIXED MOBILE (157) (160) (50) (125) (158) (159)
1920-1930	FIXED MOBILE 5.384A 5.388A 5.149 5.341 5.385 5.387 5.388	MOBILE <i>IMT</i>
1 930-1 970	FIXED MOBILE 5.388A 5.388	<i>Land Mobile - Cellular Operators</i>
1 970-1 980	FIXED MOBILE 5.388A 5.388	
1 980-2 010	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B	
2 010-2 025	FIXED MOBILE 5.388A 5.388 5.389E	
2 025-2 110	SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to-space) (space-to-space) 5.392	
2 110-2 120	FIXED MOBILE 5.388A SPACE RESEARCH (deep space) (Earth-to-space) 5.388	
2 120-2 160	FIXED MOBILE 5.388A 5.388	
2 160-2 170	FIXED MOBILE 5.388A 5.388 5.389E	

157. (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)

158. (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)

159. (5.388) The frequency bands 1 885-2 025 MHz and 2 110-2 200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement International Mobile Telecommunications (IMT). Such use does not preclude the use of these frequency bands by other services to which they are allocated. The frequency bands should be made available for IMT in accordance with Resolution **212 (Rev.WRC-15)*** (see also Resolution **223 (Rev.WRC-15)***). (WRC-15)

160. (5.388A) The bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz may be used by high altitude platform stations as base stations to provide International Mobile Telecommunications (IMT), in accordance with Resolution **221 (Rev.WRC07)**. Their use by IMT applications using high altitude platform stations as base stations does not preclude the use of these bands by any station in the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-12)

161. (5.389A) The use of the bands 1 980-2 010 MHz and 2 170-2 200 MHz by the mobile-satellite service is subject to coordination under No. 9.11A and to the provisions of Resolution **716 (Rev.WRC-2000)**. (WRC-07)

162. (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)

163. (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.

164. (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)

165. (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.

2 170-2 520 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
2 170-2 200	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) (132) (159) (161) Maritime - Maritime Mobile
2 200-2 290	SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (space-to-Earth) (space-to-space) 5.392	SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED MOBILE (164) SPACE RESEARCH (space-to-Earth) (space-to-space) (165)
2 290-2 300	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)
2 300-2 400	FIXED MOBILE 5.384A RADIOLOCATION Amateur 5.150 5.282	FIXED/MOBILE <i>IMT</i> (51) Fixed Service – Network
2 400- 2450	FIXED MOBILE 5.384A RADIOLOCATION Amateur 5.150 5.282	FIXED MOBILE (157) RADIOLOCATION Amateur (51) (102) Fixed Service - Data Service
2 450-2 483.5	FIXED MOBILE RADIOLOCATION 5.150	FIXED MOBILE RADIOLOCATION (51)

2 483.5-2 496	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIOLOCATION RADIODETERMINATION- SATELLITE (space-to-Earth) 5.398 5.150 5.402	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) (132) RADIOLOCATION RADIODETERMINATION- SATELLITE (space-to-Earth) (166) (51) (168)
2 496-2 500	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIOLOCATION RADIODETERMINATION- SATELLITE (space-to-Earth) 5.398 5.150 5.402	FIXED/MOBILE <i>IMT</i> (51) <i>Fixed Service – Network Land Mobile - Cellular Operators</i>
2 500-2 520	FIXED FIXED-SATELLITE (space-to- Earth) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (space-to- Earth) 5.351A 5.407 5.414 5.414A	

166. (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.

167. (5.399) 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 other countries. (WRC12)

168. (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.

169. (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)

170. (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.

171. (5.413) In the design of systems in the broadcasting-satellite service in the bands between 2 500 MHz and 2 690 MHz, administrations are urged to take all necessary steps to protect the radio astronomy service in the band 2 690-2 700 MHz.

172. (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)

173. (5.415) The use of the bands 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)

2 520-2 700 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
2 520-2 535	FIXED FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416	FIXED/MOBILE <i>IMT</i> (51) <i>Fixed Service – Network Land Mobile - Cellular Operators</i>
2 535-2 655	FIXED MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416	
2 655-2 670	FIXED FIXED-SATELLITE (Earth-to-space) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.208B 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.420	
2 670-2 690	FIXED FIXED-SATELLITE (Earth-to-space) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-to-space) 5.351A 5.419 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149	
2 690-2 700	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124)

174. (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)

175. (5.418B) Use of the band 2 630-2 655 MHz by nongeostationary-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. **9.12**. (WRC03)

176. (5.418C) Use of the band 2 6302 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 nongeostationary-satellite systems in the broadcasting-satellite service (sound).

177. (5.419) When introducing systems of the mobile-satellite service in the band 2 670-2 690 MHz, administrations shall take all necessary steps to protect the satellite systems operating in this band prior to 3 March 1992. The coordination of mobile-satellite systems in the band shall be in accordance with No. 9.11A. (WRC-07)

178. (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)

2 700-3 600 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
2 700-2 900	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424	AERONAUTICAL RADIONAVIGATION (120) Radiolocation (179) (180)
2 900-3 100	RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427	RADIOLOCATION (181) RADIONAVIGATION (183) (182) (184)
3 100-3 300	RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.149	RADIOLOCATION Earth exploration-satellite (active) Space research (active) (50)
3 300-3 400	RADIOLOCATION Amateur 5.149 5.429E 5.429F	RADIOLOCATION Amateur (50)
3 400-3 500	FIXED FIXED-SATELLITE (space-to- Earth) Amateur Mobile 5.432B Radiolocation 5.433 5.282 5.432A	FIXED FIXED-SATELLITE (space-to- Earth) Amateur Mobile Radiolocation (186) (102)
3 500-3 600	FIXED FIXED-SATELLITE (space-to- Earth) MOBILE except aeronautical mobile Radiolocation 5.433	FIXED FIXED-SATELLITE (space-to- Earth) MOBILE except aeronautical mobile Radiolocation (186)

179. (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.

180. (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.

181. (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)

182. (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.

183. (5.426) The use of the band 2 900-3 100 MHz by the aeronautical radionavigation service is limited to ground-based radars.

184. (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.

185. (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)

186. (5.433) 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.

3 600-4 800 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
3 600-3 700	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile Radiolocation	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile Radiolocation
3 700-4 200	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile <i>Fixed Service – Network</i> <i>Maritime - Maritime Mobile</i>
4 200-4 400	AERONAUTICAL MOBILE (R) 5.436 AERONAUTICAL RADIONAVIGATION 5.438 5.437 5.440	AERONAUTICAL MOBILE (R) (187) AERONAUTICAL RADIONAVIGATION (189) (188) (190) <i>Maritime - Maritime Mobile</i>
4 400-4 500	FIXED MOBILE	FIXED MOBILE <i>Fixed Service - Network</i>
4 500-4 800	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) (191) MOBILE <i>Fixed Service - Network</i>

187. (5.436) Use of the frequency band 4 200-4 400 MHz by stations in the aeronautical mobile (R) service is reserved exclusively for wireless avionics intra-communication systems that operate in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution **424 (WRC-15)**. (WRC-15)

188. (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)

189. (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)

190. (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.

191. (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. (WRC2000)

4 800-5 250 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
4 800-4 990	FIXED MOBILE 5.442 Radio astronomy 5.149 5.339	FIXED MOBILE (192) Radio astronomy (50) (123) Fixed Service – Network Satellite - Fixed Earth Station
4 990-5 000	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) 5.149	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) (50)
5 000-5 010	AERONAUTICAL MOBILE- SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION- SATELLITE (Earth-to-space)	AERONAUTICAL MOBILE- SATELLITE (R) (193) AERONAUTICAL RADIONAVIGATION RADIONAVIGATION- SATELLITE (Earth-to-space)
5 010-5 030	AERONAUTICAL MOBILE- SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION- SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.443B	AERONAUTICAL MOBILE- SATELLITE (R) (193) AERONAUTICAL RADIONAVIGATION RADIONAVIGATION- SATELLITE (space-to-Earth) (space-to-space) (115) (194)
5 030-5 091	AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE- SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION 5.444	AERONAUTICAL MOBILE (R) (195) AERONAUTICAL MOBILE- SATELLITE (R) (196) AERONAUTICAL RADIONAVIGATION (197)
5 091-5 150	FIXED-SATELLITE (Earth-to- space) 5.444A AERONAUTICAL MOBILE 5.444B AERONAUTICAL MOBILE- SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION 5.444	FIXED-SATELLITE (Earth-to- space) (198) AERONAUTICAL MOBILE (199) AERONAUTICAL MOBILE- SATELLITE (R) (193) AERONAUTICAL RADIONAVIGATION (197)
5 150-5 250	FIXED-SATELLITE (Earth-to- space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B AERONAUTICAL RADIONAVIGATION 5.447 5.447B 5.447C	FIXED-SATELLITE (Earth-to- space) (202) MOBILE except aeronautical mobile (200) (201) AERONAUTICAL RADIONAVIGATION (203) (204) Fixed Service - Data Service

192. (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.

193. (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)

194. (5.443B) In order not to cause harmful interference to the microwave landing system operating above 5 030 MHz, the aggregate power flux-density produced at the Earth's surface in the frequency band 5 030-5 150 MHz by all the space stations within any radionavigation-satellite service system (space-to-Earth) operating in the frequency band 5 010-5 030 MHz shall not exceed $-124.5 \text{ dB(W/m}^2\text{)}$ in a 150 kHz band. In order not to cause harmful interference to the radio astronomy service in the frequency band 4 990-5 000 MHz, radionavigation-satellite service systems operating in the frequency band 5 010-5 030 MHz shall comply with the limits in the frequency band 4 990-5 000 MHz defined in Resolution **741 (Rev.WRC-15)**. (WRC-15)

195. (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)

196. (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)

197. (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)

198. (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)

199. (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)

200. (5.446A) The use of the frequency bands 5 150-5 350 MHz and 5 470-5 725 MHz by the stations in the mobile, except aeronautical mobile, service shall be in accordance with Resolution **229 (Rev.WRC-19)**. (WRC-19)

201. (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)

202. (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.

203. (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.

204. (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-geostationarysatellite networks operated and brought into use prior to 17 November 1995. Satellite networks operated and 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

5 250-5 570 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
5 250-5 255	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH 5.447D 5.447E 5.448A	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile (200) (207) RADIOLOCATION SPACE RESEARCH (205) (206) (208) <i>Fixed Service - Data Service</i>
5 255-5 350	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH (active) 5.447E 5.448A	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile (200) (207) RADIOLOCATION SPACE RESEARCH (active) (206) (208)
5 350-5 460	EARTH EXPLORATION-SATELLITE (active) 5.448B RADIOLOCATION 5.448D AERONAUTICAL RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448C	EARTH EXPLORATION-SATELLITE (active) (209) RADIOLOCATION (211) AERONAUTICAL RADIONAVIGATION (212) SPACE RESEARCH (active) (210)
5 460-5 470	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION 5.448D RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448B	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION (211) RADIONAVIGATION (212) SPACE RESEARCH (active) (209)
5 470-5 570	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION SPACE RESEARCH (active) 5.448B	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile (200) (213) RADIOLOCATION (214) MARITIME RADIONAVIGATION SPACE RESEARCH (active) (209) <i>Fixed Service - Data Service</i>

205. (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)

206. (5.447E) *Additional allocation:* The frequency band 5 250-5 350 MHz is also allocated to the fixed service on a primary basis. 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 ITUR F.16130. 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. (WRC15)

207. (5.447F) In the frequency band 5 250-5 350 MHz, stations in the mobile service shall not claim protection from the radiolocation service, the Earth exploration-satellite service (active) and the space research service (active). The radiolocation service, the Earth exploration-satellite service (active) and the space research service (active) shall not impose more stringent conditions upon the mobile service than those stipulated in Resolution **229 (Rev.WRC-19)**. (WRC-19)

208. (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)

209. (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)

210. (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)

211. (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)

212. (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.

213. (5.450A) In the frequency band 5 470-5 725 MHz, stations in the mobile service shall not claim protection from radiodetermination services.-The radiodetermination services shall not impose more stringent conditions upon the mobile service than those stipulated in Resolution **229 (Rev.WRC-19)**. (WRC-19)

214. (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)

5 570-6 700 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
5 570-5 650	MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION 5.452	MOBILE except aeronautical mobile (200) (213) RADIOLOCATION (214) MARITIME RADIONAVIGATION (215)
5 650-5 725	MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION Amateur Space research (deep space) 5.282 5.453	MOBILE except aeronautical mobile (200) (213) RADIOLOCATION Amateur Space research (deep space) (102) (216)
5 725-5 830	RADIOLOCATION Amateur 5.150 5.453	RADIOLOCATION Amateur (51) (216)
5 830-5 850	RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.453	RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) (51) (216)
5 850-5 925	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Radiolocation 5.150	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Radiolocation (51) <i>Fixed Service - Data Service Satellite - Fixed Earth Station</i>
5 925-6 700	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A MOBILE 5.149 5.440 5.458	FIXED FIXED-SATELLITE (Earth-to-space) (217) MOBILE (50) (190) (218) <i>Satellite - Fixed Earth Station Fixed Service – Network Maritime - Maritime Mobile</i>

215. (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.

216. (5.453) *Additional allocation:* the frequency band 5 650-5 850 MHz is also allocated to the fixed and mobile services on a primary basis. In this case, the provisions of Resolution **229 (Rev.WRC-19)** do not apply. In addition, in Afghanistan, Angola, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Dem. Rep. of the Congo, Fiji, Ghana, Kiribati, Lesotho, Malawi, Maldives, Mauritius, Micronesia, Mongolia, Mozambique, Myanmar, Namibia, Nauru, New Zealand, Papua New Guinea, Rwanda, Solomon Islands, South Sudan,

South Africa, Tonga, Vanuatu, Zambia and Zimbabwe, the frequency band 5 725-5 850 MHz is allocated to the fixed service on a primary basis, and stations operating in the fixed service shall not cause harmful interference to and shall not claim protection from other primary services in the frequency band. (WRC19)

217. (5.457A) In the frequency bands 5 925-6 425 MHz and 14-14.5 GHz, earth stations located on board vessels may communicate with space stations of the fixed-satellite service. Such use shall be in accordance with Resolution **902 (WRC-03)**. In the frequency band 5 925-6 425 MHz, earth stations located on board vessels and communicating with space stations of the fixed-satellite service may employ transmit antennas with minimum diameter of 1.2 m and operate without prior agreement of any administration if located at least 330 km away from the low-water mark as officially recognized by the coastal State. All other provisions of Resolution **902 (WRC-03)** shall apply. (WRC-15)

218. (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.

6 700-7 250 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
6 700-7 075	FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE 5.458 5.458A 5.458B	FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) (191) MOBILE (218) (219) (220) Fixed Service - Network
7 075-7 145	FIXED MOBILE 5.458	FIXED MOBILE (218) Fixed Service - Network
7 145-7 190	FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) 5.458	FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) (218) Fixed Service - Network
7 190-7 235	EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A 5.460B FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458	EARTH EXPLORATION-SATELLITE (Earth-to-space) (222) (223) FIXED MOBILE SPACE RESEARCH (Earth-to-space) (221) (218) Fixed Service – Network Satellite - Fixed Earth Station
7 235-7 250	EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A FIXED MOBILE 5.458	EARTH EXPLORATION-SATELLITE (Earth-to-space) (222) FIXED MOBILE (218) Fixed Service - Network

219. (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.

220. (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.

221. (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)

222. (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)

223. (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)

7 250-8 500 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
7 250-7 300	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 5.461	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE (224) <i>Satellite - Fixed Earth Station Fixed Service - Network</i>
7 300-7 375	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile (224) <i>Fixed Service - Network</i>
7 375-7 450	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) (226) (227) <i>Fixed Service - Network</i>
7 450-7 550	FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB 5.461A	FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) (226) (227) (225) <i>Fixed Service - Network</i>
7 550-7 750	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) (226) (227) <i>Fixed Service - Network</i>
7 750-7 900	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B MOBILE except aeronautical mobile	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) (228) MOBILE except aeronautical mobile <i>Fixed Service - Network</i>

7 900-8 025	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.461	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE (224) <i>Fixed Service - Network</i>
8 025-8 175	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE (230) (229) <i>Fixed Service – Network Maritime - Maritime Mobile</i>
8 175-8 215	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE (230) (229) <i>Fixed Service - Network</i>
8 215-8 400	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE (230) (229) <i>Fixed Service – Network Maritime - Maritime Mobile</i>
8 400-8 500	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.465 5.466	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) (231) (232) <i>Fixed Service - Network</i>

224. (5.461) *Additional allocation:* the bands 7 250-7 375 MHz (space-to-Earth) and 7 900-8 025 MHz (Earth-to-space) are also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. 9.21.

225. (5.461A) The use of the band 7 450-7 550 MHz by the meteorological-satellite service (space-to-Earth) is limited to geostationary-satellite systems. Non-geostationary meteorological-satellite systems in this band notified before 30 November 1997 may continue to operate on a primary basis until the end of their lifetime. (WRC-97)

226. (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)

227. (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)

228. (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)

229. (5.462A) 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:

$$\begin{aligned} & -135 \text{ dB(W/m}^2\text{)} \text{ in a 1 MHz band} && \text{for } 0 \leq \theta < 5^\circ \\ & -135 + 0.5 (\theta - 5) \text{ dB(W/m}^2\text{)} \text{ in a 1 MHz band} && \text{for } 5 \leq \theta < 25^\circ \\ & -125 \text{ dB(W/m}^2\text{)} \text{ in a 1 MHz band} && \text{for } 25 \leq \theta \leq 90^\circ \quad (\text{WRC-12}) \end{aligned}$$

230. (5.463) Aircraft stations are not permitted to transmit in the band 8 025-8 400 MHz. (WRC-97)

231. (5.465) In the space research service, the use of the band 8 400-8 450 MHz is limited to deep space.

232. (5.466) *Different category of service:* the allocation of the band 8 400-8 500 MHz to the space research service is on a secondary basis (see No. 5.32). (WRC12)

8 500-10 000 MHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
8 500-8 550	RADIOLOCATION	RADIOLOCATION
8 550-8 650	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.469A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) (233)
8 650-8 750	RADIOLOCATION	RADIOLOCATION
8 750-8 850	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470	RADIOLOCATION AERONAUTICAL RADIONAVIGATION (234)
8 850-9 000	RADIOLOCATION MARITIME RADIONAVIGATION 5.472	RADIOLOCATION MARITIME RADIONAVIGATION (235)
9 000-9 200	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 5.473A	RADIOLOCATION AERONAUTICAL RADIONAVIGATION (120) (236)
9 200-9 300	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.474 5.474D	EARTH EXPLORATION-SATELLITE (active) (238) (239) (240) RADIOLOCATION MARITIME RADIONAVIGATION (235) (237) (241)
9 300-9 500	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION 5.475 SPACE RESEARCH (active) 5.427 5.474 5.475A 5.475B 5.476A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION (242) SPACE RESEARCH (active) (184) (243) (244) (245) <i>Maritime - Maritime Mobile</i>
9 500-9 800	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) (245)
9 800-9 900	RADIOLOCATION Earth exploration-satellite (active) Fixed Space research (active) 5.478 5.478A 5.478B	RADIOLOCATION Earth exploration-satellite (active) Fixed Space research (active) (246) (247)

9 900-10 000	EARTH	EXPLORATION-	EARTH	EXPLORATION-
	SATELLITE	(active)	SATELLITE	(active)
	5.474B	5.474C	(239)	(240)
	RADIOLOCATION		RADIOLOCATION	
	Fixed		Fixed	
	5.474D	5.478	5.479	(241) (248)

233. (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)

234. (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.

235. (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.

236. (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 other countries

237. (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).

238. (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)

239. (5.474B) Stations operating in the Earth exploration-satellite (active) service shall comply with Recommendation ITU-R RS.2066-0. (WRC-15)

240. (5.474C) Stations operating in the Earth exploration-satellite (active) service shall comply with Recommendation ITU-R RS.2065-0. (WRC-15)

241. (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)

242. (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)

243. (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)

244. (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)

245. (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)

246. (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)

247. (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)

248. (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.

10-10.7 GHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
10-10.4	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.474D 5.479	EARTH EXPLORATION-SATELLITE (active) (238) (239) (240) FIXED MOBILE RADIOLOCATION Amateur (241) (248) Fixed Service - Data Service
10.4-10.45	FIXED MOBILE RADIOLOCATION Amateur	FIXED MOBILE RADIOLOCATION Amateur
10.45-10.5	RADIOLOCATION Amateur Amateur-satellite	RADIOLOCATION Amateur Amateur-satellite
10.5-10.55	FIXED MOBILE RADIOLOCATION	FIXED MOBILE RADIOLOCATION
10.55-10.6	FIXED MOBILE except aeronautical mobile Radiolocation	FIXED MOBILE except aeronautical mobile Radiolocation
10.6-10.68	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482 5.482A	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation (50) (249)
10.68-10.7	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124)

249. (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. **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)

10.7-11.7 GHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
10.7-10.95	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) (191) MOBILE except aeronautical mobile <i>Fixed Service - Network</i>
10.95-11.2	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) (250) (251) MOBILE except aeronautical mobile <i>Fixed Service - Network</i>
11.2-11.45	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) (191) MOBILE except aeronautical mobile <i>Fixed Service - Network</i>
11.45-11.7	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) (250) (251) MOBILE except aeronautical mobile <i>Fixed Service - Network</i>

250. (5.484A) The use of the bands 12.2-12.75 GHz (space-to-Earth) , 13.75-14.5 GHz (Earth-to-space), 17.8-18.6 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 27.5-28.6 GHz (Earth-to-space), 29.5-30 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC2000)

251. (5.484B) Resolution **155 (WRC-15)** shall apply. (WRC15-)

11.7-13.4 GHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
11.7-12.2	FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492 5.487 5.487A	FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE (254) (252) (253)
12.2-12.5	FIXED FIXED-SATELLITE (space-to-Earth) 5.484B MOBILE except aeronautical mobile BROADCASTING 5.487 5.484A	FIXED FIXED-SATELLITE (space-to-Earth) (251) MOBILE except aeronautical mobile BROADCASTING (252) (250)
12.5-12.75	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B MOBILE except aeronautical mobile BROADCASTING-SATELLITE 5.493	FIXED FIXED-SATELLITE (space-to-Earth) (250) (251) MOBILE except aeronautical mobile BROADCASTING-SATELLITE (255)
12.75-13.25	FIXED FIXED-SATELLITE (Earth-to-space) 5.441 MOBILE Space research (deep space) (space-to-Earth)	FIXED FIXED-SATELLITE (Earth-to-space) (191) MOBILE Space research (deep space) (space-to-Earth) Fixed Service - Network
13.25-13.4	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION (256) SPACE RESEARCH (active) (257)

252. (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)

253. (5.487A) Additional allocation: The bands 12.2-12.7 GHz and 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)

254. (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)

255. (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)

256. (5.497) The use of the band 13.25-13.4 GHz by the aeronautical radionavigation service is limited to Doppler navigation aids.

257. (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)

13.4-14 GHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
13.4-13.65	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.499C 5.499D Standard frequency and time signal-satellite (Earth-to-space) 5.501 5.501B	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (260) (261) Standard frequency and time signal-satellite (Earth-to-space) (264)
13.65-13.75	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A Standard frequency and time signal-satellite (Earth-to-space) 5.501 5.501B	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (263) Standard frequency and time signal-satellite (Earth-to-space) (264)
13.75-14	FIXED-SATELLITE (Earth-to-space) 5.484A RADIOLOCATION Earth exploration-satellite Standard frequency and time signal-satellite (Earth-to-space) Space research 5.501 5.502 5.503	FIXED-SATELLITE (Earth-to-space) (250) RADIOLOCATION Earth exploration-satellite Standard frequency and time signal-satellite (Earth-to-space) Space research (265) (266) <i>Satellite - Fixed Earth Station</i>

258. (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)

259. (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)

260. (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)

261. (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)

262. (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)

263. (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)

264. (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)

265. (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)

266. (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) $4.7D + 28$ dB(W/40 kHz), where D is the fixed-satellite service earth station antenna diameter (m) for antenna diameters equal to or greater than 1.2 m and less than 4.5 m;
 - ii) $49.2 + 20 \log(D/4.5)$ dB(W/40 kHz), where D is the fixed-satellite service earth station antenna diameter (m) for antenna diameters equal to or greater than 4.5 m and less than 31.9 m;
 - iii) 66.2 dB(W/40 kHz) for any fixed-satellite service earth station for antenna diameters (m) equal to or greater than 31.9 m;
 - iv) 56.2 dB(W/4 kHz) for narrow-band (less than 40 kHz of necessary bandwidth) fixed-satellite service earth station emissions from any fixed-satellite service earth station having an antenna diameter of 4.5 m or greater;
- the e.i.r.p. density of emissions from any earth station in the fixed-satellite service operating with a space station in **non**-geostationary-satellite orbit shall not exceed 51 dBW in the 6 MHz band from 13.772 to 13.778 GHz.

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

14-14.5 GHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
14-14.25	FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A 5.484B 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.504C 5.506A Space research 5.504A	FIXED-SATELLITE (Earth-to-space) (217) (250) (251) (271) (273) RADIONAVIGATION (267) Mobile-satellite (Earth-to-space) (269) (270) (272) Space research (268) Satellite - Fixed Earth Station
14.25-14.3	FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A 5.484B 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.506A Space research 5.504A	FIXED-SATELLITE (Earth-to-space) (217) (250) (251) (271) (273) RADIONAVIGATION (267) Mobile-satellite (Earth-to-space) (269) (272) Space research (268) Satellite - Fixed Earth Station
14.3-14.4	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A 5.484B 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Radionavigation-satellite 5.504A	FIXED FIXED-SATELLITE (Earth-to-space) (217) (250) (251) (271) (273) MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) (269) (272) (274) Radionavigation-satellite (268) Satellite - Fixed Earth Station
14.4-14.47	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A 5.484B 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Space research (space-to-Earth) 5.504A	FIXED FIXED-SATELLITE (Earth-to-space) (217) (250) (251) (271) (273) MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) (269) (272) (274) Space research (space-to-Earth) (268) Fixed Service - Network
14.47-14.5	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Radio astronomy 5.149 5.504A	FIXED FIXED-SATELLITE (Earth-to-space) (217) (250) (271) (273) MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) (269) (272) (274) Radio astronomy (50) (268) Fixed Service - Network

267. (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.

268. (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)

269. (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)

270. (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)

271. (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.

272. (5.506A) In the band 14-14.5 GHz, ship earth stations with an e.i.r.p. greater than 21 dBW shall operate under the same conditions as earth stations located on board vessels, as provided in Resolution **902 (WRC-03)**. This footnote shall not apply to ship earth stations for which the complete Appendix 4 information has been received by the Bureau prior to 5 July 2003. (WRC-03)

273. (5.506B) Earth stations located on board vessels communicating with space stations in the fixed-satellite service may operate in the frequency band 14-14.5 GHz without the need for prior agreement from Cyprus and Malta, within the minimum distance given in Resolution **902 (WRC-03)** from these countries. (WRC-15)

274. (5.509A) In the frequency band 14.3-14.5 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Bahrain, Botswana, Cameroon, China, Côte d'Ivoire, Egypt, France, Gabon, Guinea, India, Iran (Islamic Republic of), Italy, Kuwait, Morocco, Nigeria, Oman, the Syrian Arab Republic, the United Kingdom, [Sri Lanka](#), Tunisia and Viet Nam by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1, Part B of Recommendation ITUR 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**. (WRC15)

14.5-15.4 GHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
14.5-14.75	FIXED FIXED-SATELLITE (Earth-to-space) 5.509B 5.509C 5.509D 5.509E 5.509F 5.510 MOBILE Space research 5.509G	FIXED FIXED-SATELLITE (Earth-to-space) (275) (276) (277) (278) (279) (281) MOBILE Space research (280) Satellite - Fixed Earth Station Fixed Service - Network
14.75-14.8	FIXED FIXED-SATELLITE (Earth-to-space) 5.509B 5.509C 5.509D 5.509E 5.509F 5.510 MOBILE Space research 5.509G	FIXED FIXED-SATELLITE (Earth-to-space) (275) (276) (277) (278) (279) (281) MOBILE Space research (280) Fixed Service - Network
14.8-15.35	FIXED MOBILE Space research 5.339	FIXED MOBILE Space research (123) Fixed Service - Network
15.35-15.4	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124) Fixed Service - Network

275. (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)

276. (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)

277. (5.509D) Before an administration brings into use an earth station in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service in the frequency bands 14.5-14.75 GHz (in countries listed in Resolution **163 (WRC-15)**) and 14.5-14.8 GHz (in countries listed in Resolution **164 (WRC-15)**), it shall ensure that the power flux-density produced by this earth station does not exceed -151.5 dB(W/(m² · 4 kHz))

produced at all altitudes from 0 m to 19 000 m above sea level at 22 km seaward from all coasts, defined as the low-water mark, as officially recognized by each coastal State. (WRC-15)

278. (5.509E) In the frequency bands 14.50-14.75 GHz in countries listed in Resolution **163 (WRC-15)** and 14.50-14.8 GHz in countries listed in Resolution **164 (WRC-15)**, the location of earth stations in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service shall maintain a separation distance of at least 500 km from the border(s) of other countries unless shorter distances are explicitly agreed by those administrations. No. 9.17 does not apply. When applying this provision, administrations should consider the relevant parts of these Regulations and the latest relevant ITU-R Recommendations. (WRC-15)

279. (5.509F) In the frequency bands 14.50-14.75 GHz in countries listed in Resolution **163 (WRC-15)** and 14.50-14.8 GHz in countries listed in Resolution **164 (WRC-15)**, earth stations in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service shall not constrain the future deployment of the fixed and mobile services. (WRC-15)

280. (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)

281. (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)

15.4-18.4 GHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
15.4-15.43	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	RADIOLOCATION (284) (285) AERONAUTICAL RADIONAVIGATION
15.43-15.63	FIXED-SATELLITE (Earth-to-space) 5.511A RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511C	FIXED-SATELLITE (Earth-to-space) (282) RADIOLOCATION (284) (285) AERONAUTICAL RADIONAVIGATION (283)
15.63-15.7	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	RADIOLOCATION (284) (285) AERONAUTICAL RADIONAVIGATION
15.7-16.6	RADIOLOCATION 5.513	RADIOLOCATION
16.6-17.1	RADIOLOCATION Space research (deep space) (Earth-to-space) 5.513	RADIOLOCATION Space research (deep space) (Earth-to-space)
17.1-17.2	RADIOLOCATION 5.513	RADIOLOCATION
17.2-17.3	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.513 5.513A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) (286)
17.3-17.7	FIXED-SATELLITE (Earth-to-space) 5.516 Radiolocation	FIXED-SATELLITE (Earth-to-space) (288) Radiolocation
17.7-18.1	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.517A (Earth-to-space) 5.516 MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) (250) (290) (Earth-to-space) (288) MOBILE <i>Fixed Service - Network</i>
18.1-18.4	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A (Earth-to-space) 5.520 MOBILE 5.519	FIXED FIXED-SATELLITE (space-to-Earth) (250) (289) (290) (Earth-to-space) (292) MOBILE (291) <i>Satellite - Fixed Earth Station</i> <i>Fixed Service - Network</i>

282. (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)

283. (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)

284. (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)

285. (5.511F) In order to protect the radio astronomy service in the frequency band 15.35-15.4 GHz, radiolocation stations operating in the frequency band 15.4-15.7 GHz shall not exceed the power flux-density level of $-156 \text{ dB(W/m}^2\text{)}$ in a 50 MHz bandwidth in the frequency band 15.35-15.4 GHz, at any radio astronomy observatory site for more than 2 per cent of the time. (WRC-12)

286. (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)

287. (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**.

288. (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 bands 17.3-18.1 GHz (Earth-to-space) by nongeostationary-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. Nongeostationary-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. (WRC2000)

289. (5.516B) The following bands are identified for use by high-density applications in the fixed-satellite service:

19.7-20.2 GHz (space-to-Earth),

40-40.5 GHz (space-to-Earth),

28.45-28.94 GHz (Earth-to-space),

29.46-30 GHz (Earth-to-space) in all Regions,

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)

290. (5.517A) The operation of earth stations in motion communicating with geostationary fixed-satellite service space stations within the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) shall be subject to the application of Resolution **169 (WRC-19)**. (WRC-19)

291. (5.519) *Additional allocation:* The band 18.1-18.4 GHz is also allocated to the meteorological-satellite service (space-to-Earth) on a primary basis. Their use is limited to geostationary satellites. (WRC-07)

292. (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)

18.4-22 GHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
18.4-18.6	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) (250) (289) (290) MOBILE <i>Fixed Service - Network</i>
18.6-18.8	EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.517A 5.522B MOBILE except aeronautical mobile Space research (passive) 5.522A	EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) (290) (294) MOBILE except aeronautical mobile Space research (passive) (293) <i>Fixed Service - Network</i>
18.8-19.3	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.517A 5.523A MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) (289) (290) (295) MOBILE <i>Fixed Service - Network</i>
19.3-19.7	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.517A 5.523B 5.523C 5.523D 5.523E MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) (290) (296) (297) (298) (299) MOBILE <i>Fixed Service - Network</i>
19.7-20.1	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A Mobile-satellite (space-to-Earth)	FIXED-SATELLITE (space-to-Earth) (250) (251) (289) (302) Mobile-satellite (space-to-Earth) <i>Fixed Service - Network</i>
20.1-20.2	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A MOBILE-SATELLITE (space-to-Earth) 5.525 5.526 5.527 5.528	FIXED-SATELLITE (space-to-Earth) (250) (251) (289) (302) MOBILE-SATELLITE (space-to-Earth) (300) (301) (303) <i>Fixed Service - Network</i>
20.2-21.2	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth)	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) <i>Fixed Service - Network</i>

21.2-21.4	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) <i>Fixed Service - Network</i>
21.4-22	FIXED MOBILE BROADCASTING-SATELLITE 5.208B 5.530A 5.530B	FIXED MOBILE BROADCASTING-SATELLITE (63) (304) (305) <i>Fixed Service - Network</i>

293. (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)

294. (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)

295. (5.523A) The use of the bands 18.8-19.3 GHz (space-to-Earth) and 28.6-29.1 GHz (Earth-to-space) by geostationary and non-geostationary fixed-satellite service networks is subject to the application of the provisions of No. 9.11A and No. 22.2 does not apply. Administrations having geostationary-satellite networks under coordination prior to 18 November 1995 shall cooperate to the maximum extent possible to coordinate pursuant to No. 9.11A with non-geostationary-satellite networks for which notification information has been received by the Bureau prior to that date, with a view to reaching results acceptable to all the parties concerned. Non-geostationary-satellite networks shall not cause unacceptable interference to geostationary fixed-satellite service networks for which complete Appendix 4 notification information is considered as having been received by the Bureau prior to 18 November 1995. (WRC-97)

296. (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.

297. (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)

298. (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)

299. (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)

300. (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.

301. (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.

302. (5.527A) The operation of earth stations in motion communicating with the FSS is subject to Resolution **156 (WRC-15)**. (WRC-15)

303. (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 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.

304. (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)

305. (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)

22-24.75 GHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
22-22.21	FIXED MOBILE except aeronautical mobile 5.149	FIXED MOBILE except aeronautical mobile (50) Fixed Service – Network
22.21-22.5	EARTH EXPLORATION- SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.532	EARTH EXPLORATION- SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) (50) (306) Fixed Service – Network
22.5-22.55	FIXED MOBILE	FIXED MOBILE Fixed Service – Network
22.55-23.15	FIXED INTER-SATELLITE 5.338A MOBILE SPACE RESEARCH (Earth-to- space) 5.532A 5.149	FIXED INTER-SATELLITE (122) MOBILE SPACE RESEARCH (Earth-to- space) (307) (50) Fixed Service – Network
23.15-23.55	FIXED INTER-SATELLITE 5.338A MOBILE	FIXED INTER-SATELLITE (122) MOBILE Fixed Service - Network
23.55-23.6	FIXED MOBILE	FIXED MOBILE Fixed Service - Network
23.6-24	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124)
24-24.05	AMATEUR AMATEUR-SATELLITE 5.150	AMATEUR AMATEUR-SATELLITE (51)
24.05-24.25	RADIOLOCATION Amateur Earth exploration-satellite (active) 5.150	RADIOLOCATION Amateur Earth exploration-satellite (active) (51)
24.25-24.45	FIXED MOBILE 5.338A 5.532AB RADIONAVIGATION	FIXED MOBILE (122) (308) RADIONAVIGATION
24.45-24.65	FIXED INTER-SATELLITE MOBILE 5.338A 5.532AB RADIONAVIGATION 5.533	FIXED INTER-SATELLITE MOBILE (122) (308) RADIONAVIGATION (310) Fixed Service - Network

24.65-24.75	FIXED FIXED-SATELLITE (Earth-to-space) 5.532B INTER-SATELLITE MOBILE 5.338A 5.532AB	FIXED FIXED-SATELLITE (Earth-to-space) (309) INTER-SATELLITE MOBILE (122) (308)
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306. (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.

307. (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)

308. (5.532AB) The frequency band 24.25-27.5 GHz is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Resolution **242 (WRC-19)** applies. (WRC-19)

309. (5.532B) Use of the band 24.65-24.75 GHz by the fixed-satellite service (Earth-to-space) is limited to earth stations using a minimum antenna diameter of 4.5 m. (WRC12)

310. (5.533) The inter-satellite service shall not claim protection from harmful interference from airport surface detection equipment stations of the radionavigation service.

24.75-29.9 GHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
24.75-25.25	FIXED FIXED-SATELLITE (Earth-to-space) 5.535 MOBILE 5.338A 5.532AB	FIXED FIXED-SATELLITE (Earth-to-space) (311) MOBILE (122) (308) Fixed Service - Network
25.25-25.5	FIXED INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB Standard frequency and time signal-satellite (Earth-to-space)	FIXED INTER-SATELLITE (313) MOBILE (122) (308) Standard frequency and time signal- satellite (Earth-to-space)
25.5-27	EARTH EXPLORATION- SATELLITE (space-to-Earth) FIXED INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB SPACE RESEARCH (space-to- Earth) Standard frequency and time signal- satellite (Earth-to-space) 5.536A	EARTH EXPLORATION- SATELLITE (space-to-Earth) FIXED INTER-SATELLITE (313) MOBILE (122) (308) SPACE RESEARCH (space-to- Earth) Standard frequency and time signal- satellite (Earth-to-space) (314) Fixed Service - Network
27-27.5	FIXED FIXED-SATELLITE (Earth-to- space) INTER-SATELLITE 5.536 5.537 MOBILE 5.338A 5.532AB	FIXED FIXED-SATELLITE (Earth-to- space) INTER-SATELLITE (313) (315) MOBILE (122) (308)
27.5-28.5	FIXED 5.537A FIXED-SATELLITE (Earth-to- space) 5.484A 5.516B 5.517A 5.539 MOBILE 5.538 5.540	FIXED (316) FIXED-SATELLITE (Earth-to- space) (250) (289) (290) (318) MOBILE (317) (319) Satellite - Fixed Earth Station
28.5-29.1	FIXED FIXED-SATELLITE (Earth-to- space) 5.484A 5.516B 5.517A 5.523A 5.539 MOBILE Earth exploration-satellite (Earth- to-space) 5.541 5.540	FIXED FIXED-SATELLITE (Earth-to- space) (250) (289) (290) (295) (318) MOBILE Earth exploration-satellite (Earth-to- space) (320) (319)
29.1-29.5	FIXED FIXED-SATELLITE (Earth-to- space) 5.516B 5.517A 5.523C 5.523E 5.535A 5.539 5.541A MOBILE Earth exploration-satellite (Earth- to-space) 5.541 5.540	FIXED FIXED-SATELLITE (Earth-to- space) (289) (290) (297) (299) (312) (318) (321) MOBILE Earth exploration-satellite (Earth-to- space) (320) (319)

29.5-29.9	FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.527A 5.539 Earth exploration-satellite (Earth-to-space) 5.541 Mobile-satellite (Earth-to-space) 5.540 5.542	FIXED-SATELLITE (Earth-to-space) (250) (251) (289) (302) (318) Earth exploration-satellite (Earth-to-space) (320) Mobile-satellite (Earth-to-space) (319) (322)
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311. (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.

312. (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)

313. (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.

314. (5.536A) Administrations operating earth stations in the Earth exploration-satellite service or the space research service shall not claim protection from stations in the fixed and mobile services operated by other administrations. In addition, earth stations in the Earth exploration-satellite service or in the space research service should be operated taking into account the most recent version of Recommendation ITU-R SA.1862. Resolution **242 (WRC-19)** applies. (WRC-19)

315. (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**.

316. (5.537A) 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) . Such use of 300 MHz of the fixed-service allocation by HAPS 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.WRC19)**. (WRC19)

317. (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)

318. (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.

319. (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.

320. (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.

321. (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)

322. (5.542) *Additional allocation:* in Algeria, Saudi Arabia, Bahrain, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), 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, Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Somalia, Sudan, South Sudan, Sri Lanka and Chad, the band 29.531 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. (WRC12)

29.9-34.2 GHz

Allocation to services		
Frequency	Region 3	Usage in Sri Lanka
29.9-30	FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.527A 5.539 MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (Earth-to-space) 5.541 5.543 5.525 5.526 5.527 5.538 5.540 5.542	FIXED-SATELLITE (Earth-to-space) (250) (251) (289) (302) (318) MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (Earth-to-space) (320) (323) (300) (301) (317) (319) (322)
30-31	FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE-SATELLITE (Earth-to-space) Standard frequency and time signal-satellite (space-to-Earth) 5.542	FIXED-SATELLITE (Earth-to-space) (122) MOBILE-SATELLITE (Earth-to-space) Standard frequency and time signal-satellite (space-to-Earth) (322)
31-31.3	FIXED 5.338A 5.543B MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research 5.544 5.149	FIXED (122) (324) MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research (325) (50)
31.3-31.5	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124)
31.5-31.8	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile (50)
31.8-32	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.548	FIXED (327) RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) (326) (328)
32-32.3	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.548	FIXED (327) RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) (326) (328)

32.3-33	FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.548	FIXED (327) INTER-SATELLITE RADIONAVIGATION (326) (328)
33-33.4	FIXED 5.547A RADIONAVIGATION 5.547	FIXED (327) RADIONAVIGATION (326)
33.4-34.2	RADIOLOCATION 5.549	RADIOLOCATION (329)

323. (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.

324. (5.543B) The allocation to the fixed service in the frequency band 31-31.3 GHz is identified for worldwide use by high-altitude platform stations (HAPS). This identification does not preclude the use of this frequency band by other fixed-service applications or by other services to which this frequency band is allocated on a co-primary basis, and does not establish priority in the Radio Regulations. Such use of the fixed-service allocation by HAPS shall be in accordance with the provisions of Resolution **167 (WRC-19)**. (WRC-19)

325. (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.

326. (5.547) The bands 31.8-33.4 GHz, 37-40 GHz, 40.5-43.5 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz are available for high-density applications in the fixed service (see Resolution **75 (WRC-2000)**). Administrations should take this into account when considering regulatory provisions in relation to these bands. Because of the potential deployment of high-density applications in the fixed-satellite service in the bands 39.5-40 GHz and 40.5-42 GHz (see No. **5.516B**), administrations should further take into account potential constraints to high-density applications in the fixed service, as appropriate. (WRC-07)

327. (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)

328. (5.548) In designing systems for the inter-satellite service in the band 32.3-33 GHz, for the radionavigation service in the band 32-33 GHz, and for the space research service (deep space) in the band 31.8-32.3 GHz, administrations shall take all necessary measures to prevent harmful interference between these services, bearing in mind the safety aspects of the radionavigation service (see Recommendation **707**). (WRC-03)

329. (5.549) *Additional allocation:* The band 33.4-36 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC12)

34.2-40 GHz

Allocation to services		
Region 1	Region 2	Region 3
34.2-34.7	RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) 5.549	RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) (329)
34.7-35.2	RADIOLOCATION Space research 5.549	RADIOLOCATION Space research (329)
35.2-35.5	METEOROLOGICAL AIDS RADIOLOCATION 5.549	METEOROLOGICAL AIDS RADIOLOCATION (329)
35.5-36	METEOROLOGICAL AIDS EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549 5.549A	METEOROLOGICAL AIDS EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) (329) (330)
36-37	EARTH EXPLORATION- SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	EARTH EXPLORATION- SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) (50) (331)
37-37.5	FIXED MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to- Earth) 5.547	FIXED MOBILE except aeronautical mobile (332) SPACE RESEARCH (space-to- Earth) (326) Fixed Service - Network
37.5-38	FIXED FIXED-SATELLITE (space-to- Earth) 5.550C MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to- Earth) Earth exploration-satellite (space- to-Earth) 5.547	FIXED FIXED-SATELLITE (space-to- Earth) (333) MOBILE except aeronautical mobile (332) SPACE RESEARCH (space-to- Earth) Earth exploration-satellite (space- to-Earth) (326)
38-39.5	FIXED 5.550D FIXED-SATELLITE (space-to- Earth) 5.550C MOBILE 5.550B Earth exploration-satellite (space- to-Earth) 5.547	FIXED (334) FIXED-SATELLITE (space-to- Earth) (333) MOBILE (332) Earth exploration-satellite (space- to-Earth) (326) Fixed Service - Network

39.5-40	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C MOBILE 5.550B MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) .547 5.550E	FIXED FIXED-SATELLITE (space-to-Earth) (289) (333) MOBILE (332) MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) .547 (335)
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330. (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)

331. (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)

332. (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 , 40-40.5 GHz (see No. **5.516B**), it should be taken into account the potential constraints to IMT in these frequency bands, as appropriate. Resolution **243 (WRC19)** applies. (WRC19)

333. (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)

334. (5.550D) The allocation to the fixed service in the frequency band 38-39.5 GHz is identified for worldwide use by administrations wishing to implement high-altitude platform stations (HAPS). In the HAPS-to-ground direction, the HAPS ground station shall not claim protection from stations in the fixed, mobile and fixed-satellite services; and No. 5.43A does not apply. This identification does not preclude the use of this frequency band by other fixed-service applications or by other services to which this frequency band is allocated on a co-primary basis and does not establish priority in the Radio Regulations. Furthermore, the development of the fixed-satellite, fixed and mobile services shall not be unduly constrained

by HAPS. Such use of the fixed-service allocation by HAPS shall be in accordance with the provisions of Resolution **168 (WRC-19)**. (WRC-19)

335. (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)

40-47.5 GHz

Allocation to services		
Region 1	Region 2	Region 3
40-40.5	EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C MOBILE 5.550B MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth) 5.550E	EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) (289) (333) MOBILE (332) MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth) (335)
40.5-41	FIXED FIXED-SATELLITE (space-to-Earth) 5.550C LAND MOBILE 5.550B BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile 5.547	FIXED FIXED-SATELLITE (space-to-Earth) (333) LAND MOBILE (332) BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile (326)
41-42.5	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C LAND MOBILE 5.550B BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile 5.547 5.551H 5.551I	FIXED FIXED-SATELLITE (space-to-Earth) (289) (333) LAND MOBILE (332) BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile (326) (336) (337)
42.5-43.5	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except aeronautical mobile 5.550B RADIO ASTRONOMY 5.149 5.547	FIXED FIXED-SATELLITE (Earth-to-space) (338) MOBILE except aeronautical mobile (332) RADIO ASTRONOMY (50) (326)
43.5-47	MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	MOBILE (340) MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE (341)
47-47.2	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE

47.2-47.5	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 5.552A	FIXED FIXED-SATELLITE (Earth-to-space) (333) (338) (339)
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336. (5.551H) The equivalent power flux-density (epfd) produced in the frequency band 42.5-43.5 GHz by all space stations in any non-geostationary-satellite system in the fixed-satellite service (space-to-Earth), or in the broadcasting-satellite service operating in the frequency band 42-42.5 GHz, shall not exceed the following values at the site of any radio astronomy station for more than 2% of the time:

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

These epfd values shall be evaluated using the methodology given in Recommendation ITU-R S.1586-1 and the reference antenna pattern and the maximum gain of an antenna in the radio astronomy service given in Recommendation ITU-R RA.1631-0 and shall apply over the whole sky and for elevation angles higher than the minimum operating angle θ_{min} of the radiotelescope (for which a default value of 5° should be adopted in the absence of notified information).

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

- was in operation prior to 5 July 2003 and has been notified to the Bureau before 4 January 2004; or
- was notified before the date of receipt of the complete Appendix 4 information for coordination or notification, as appropriate, for the space station to which the limits apply.

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

337. (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.. 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)

338. (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.

339. (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)

340. (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)

341. (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)

47.5-51.4 GHz

Allocation to services		
Region 1	Region 2	Region 3
47.5-47.9	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE	FIXED FIXED-SATELLITE (Earth-to-space) (333) (338) MOBILE
47.9-48.2	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.552A	FIXED FIXED-SATELLITE (Earth-to-space) (333) (338) MOBILE (339)
48.2-50.2	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.516B 5.550C 5.552 MOBILE	FIXED FIXED-SATELLITE (Earth-to-space) (122) (289) (333) (338) MOBILE
50.2-50.4	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) (124)
50.4-51.4	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.550C MOBILE Mobile-satellite (Earth-to-space)	FIXED FIXED-SATELLITE (Earth-to-space) (122) (333) MOBILE Mobile-satellite (Earth-to-space)

342. (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)

343. (5.555) *Additional allocation:* the band 48.94-49.04 GHz is also allocated to the radio astronomy service on a primary basis. (WRC2000)

344. (5.555B) The power flux-density in the band 48.94-49.04 GHz produced by any geostationary space station in the fixed-satellite service (space-to-Earth) operating in the bands 48.2-48.54 GHz and 49.44-50.2 GHz shall not exceed $-151.8 \text{ dB(W/m}^2\text{)}$ in any 500 kHz band at the site of any radio astronomy station. (WRC-03)

51.4-55.78 GHz

Allocation to services		
Region 1	Region 2	Region 3
51.4-52.4	FIXED FIXED-SATELLITE (Earth-to-space) 5.555C MOBILE 5.338A 5.547 5.556	FIXED FIXED-SATELLITE (Earth-to-space) (345) MOBILE (122) (326) (346)
52.4-52.6	FIXED 5.338A MOBILE 5.547 5.556	FIXED (122) MOBILE (326) (346)
52.6-54.25	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) (124) (346)
54.25-55.78	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE (347) SPACE RESEARCH (passive)

345. (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)

346. (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)

347. (5.556A) Use of the bands 54.25-56.9 GHz, 57-58.2 GHz and 59-59.3 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density at all altitudes from 0 km to 1 000 km above the Earth's surface produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, shall not exceed $-147 \text{ dB(W/(m}^2 \cdot 100 \text{ MHz))}$ for all angles of arrival. (WRC-97)

55.78-66 GHz

Allocation to services		
Region 1	Region 2	Region 3
55.78-56.9	EARTH EXPLORATION-SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	EARTH EXPLORATION-SATELLITE (passive) FIXED (348) INTER-SATELLITE (347) MOBILE (349) SPACE RESEARCH (passive) (326)
56.9-57	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE (350) MOBILE (349) SPACE RESEARCH (passive) (326)
57-58.2	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE (347) MOBILE (349) SPACE RESEARCH (passive) (326)
58.2-59	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) (326) (346)
59-59.3	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE (347) MOBILE (349) RADIOLOCATION (351) SPACE RESEARCH (passive)
59.3-64	FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	FIXED INTER-SATELLITE MOBILE (349) RADIOLOCATION (351) (41)
64-65	FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	FIXED INTER-SATELLITE MOBILE except aeronautical mobile (326) (346)

65-66	EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH (326)
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348. (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)

349. (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)

350. (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)

351. (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)

66-81 GHz

Allocation to services		
Region 1	Region 2	Region 3
66-71	INTER-SATELLITE MOBILE 5.553 5.558 5.559AA MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION- SATELLITE 5.554	INTER-SATELLITE MOBILE (340) (349) (352) MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION- SATELLITE (341)
71-74	FIXED FIXED-SATELLITE (space-to- Earth) MOBILE MOBILE-SATELLITE (space-to- Earth)	FIXED FIXED-SATELLITE (space-to- Earth) MOBILE MOBILE-SATELLITE (space-to- Earth)
74-76	FIXED FIXED-SATELLITE (space-to- Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.561	FIXED FIXED-SATELLITE (space-to- Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) (355)
76-77.5	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) (50)
77.5-78	AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.559B Radio astronomy Space research (space-to-Earth) 5.149	AMATEUR AMATEUR-SATELLITE RADIOLOCATION (353) Radio astronomy Space research (space-to-Earth) (50)
78-79	RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) 5.149 5.560	RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) (50) (354)
79-81	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) (50)

352. (5.559AA) The frequency band 66-71 GHz is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which this frequency band is allocated and does not establish priority in the Radio Regulations. Resolution **241 (WRC-19)** applies. (WRC-19)

353. (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)

354. (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.

355. (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)

81-86 GHz

Allocation to services		
Region 1	Region 2	Region 3
81-84	FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY Space research (space-to-Earth) 5.149 5.561A	FIXED (122) FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY Space research (space-to-Earth) (50) (356)
84-86	FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149	FIXED (122) FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY (50)

356. (5.561A) The 81-81.5 GHz band is also allocated to the amateur and amateur-satellite services on a secondary basis. (WRC-2000)

86-111.8 GHz

Allocation to services		
Region 1	Region 2	Region 3
86-92	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124)
92-94	FIXED 5.338A MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED (122) MOBILE RADIO ASTRONOMY RADIOLOCATION (50)
94-94.1	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy (357) (358)
94.1-95	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION (50)
95-100	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE (50) (341)
100-102	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124) (125)
102-105	FIXED MOBILE RADIO ASTRONOMY 5.149 5.341	FIXED MOBILE RADIO ASTRONOMY (50) (125)
105-109.5	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) (359) (50) (125)

109.5-111.8	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124) (125)
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357. (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)

358. (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)

359. (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)

111.8-119.98 GHz

Allocation to services		
Region 1	Region 2	Region 3
111.8-114.25	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) (359) (50) (125)
114.25-116	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124) (125)
116-119.98	EARTH EXPLORATION- SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341	EARTH EXPLORATION- SATELLITE (passive) INTER-SATELLITE (360) SPACE RESEARCH (passive) (125)

360. (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)

119.98-151.5 GHz

Allocation to services		
Region 1	Region 2	Region 3
119.98-122.25	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.138 5.341	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE (360) SPACE RESEARCH (passive) (41) (125)
122.25-123	FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138	FIXED INTER-SATELLITE MOBILE (349) Amateur (41)
123-130	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio astronomy 5.149 5.554	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio astronomy (50) (341)
130-134	EARTH EXPLORATION-SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.149 5.562A	EARTH EXPLORATION-SATELLITE (active) (361) FIXED INTER-SATELLITE MOBILE (349) RADIO ASTRONOMY (50) (358)
134-136	AMATEUR AMATEUR-SATELLITE Radio astronomy	AMATEUR AMATEUR-SATELLITE Radio astronomy
136-141	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite (50)
141-148.5	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION (50)
148.5-151.5	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124)

361. (5.562E) The allocation to the Earth exploration-satellite service (active) is limited to the band 133.5-134 GHz. (WRC-2000)

151.5-158.5 GHz

Allocation to services		
Region 1	Region 2	Region 3
151.5-155.5	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION (50)
155.5-158.5	FIXED MOBILE RADIO ASTRONOMY 5.149	FIXED MOBILE RADIO ASTRONOMY (50)

158.5-200 GHz

Allocation to services		
Region 1	Region 2	Region 3
158.5-164	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)
164-167	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124)
167-174.5	FIXED FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE 5.558 5.149	FIXED FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE (349) (50)
174.5-174.8	FIXED INTER-SATELLITE MOBILE 5.558	FIXED INTER-SATELLITE MOBILE (349)
174.8-182	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE (362) SPACE RESEARCH (passive)
182-185	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124)
185-190	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE (362) SPACE RESEARCH (passive)
190-191.8	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) (124)
191.8-200	FIXED INTER-SATELLITE MOBILE 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.341 5.554	FIXED INTER-SATELLITE MOBILE (349) MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE (50) (125) (341)

362. (5.562H) Use of the bands 174.8-182 GHz and 185-190 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, at all altitudes from 0 to 1 000 km above the Earth's surface and in the vicinity of all geostationary orbital positions occupied by passive sensors, shall not exceed $-144 \text{ dB(W/(m}^2 \cdot \text{MHz))}$ for all angles of arrival. (WRC-2000)

363. (5.563) (SUP - WRC03)

364. (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. (WRC2000)

200-248 GHz

Allocation to services		
Region 1	Region 2	Region 3
200-209	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124) (125) (364)
209-217	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.341	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY (50) (125)
217-226	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) (359) (50) (125)
226-231.5	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124)
231.5-232	FIXED MOBILE Radiolocation	FIXED MOBILE Radiolocation
232-235	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation
235-238	EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) SPACE RESEARCH (passive) 5.563A 5.563B	EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) SPACE RESEARCH (passive) (364) (365)
238-240	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE
240-241	FIXED MOBILE RADIOLOCATION	FIXED MOBILE RADIOLOCATION

241-248	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.138 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite (41) (50)
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365. (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)

248-3 000 GHz

Allocation to services		
Region 1	Region 2	Region 3
248-250	AMATEUR AMATEUR-SATELLITE Radio astronomy 5.149	AMATEUR AMATEUR-SATELLITE Radio astronomy (50)
250-252	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.563A	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) (124) (364)
252-265	FIXED MOBILE MOBILE-SATELLITE (Earth-to- space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION- SATELLITE 5.149 5.554	FIXED MOBILE MOBILE-SATELLITE (Earth-to- space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION- SATELLITE (50) (341)
265-275	FIXED FIXED-SATELLITE (Earth-to- space) MOBILE RADIO ASTRONOMY 5.149 5.563A	FIXED FIXED-SATELLITE (Earth-to- space) MOBILE RADIO ASTRONOMY (50) (364)
275-3 000	(Not allocated) 5.564A 5.565	(Not allocated) (366) (367)

366. (5.564A) For the operation of fixed and land mobile service applications in frequency bands in the range 275-450 GHz:

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

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

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

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

367. (5.565) The following frequency bands in the range 275-1 000 GHz are identified for use by administrations for passive service applications:

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

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

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