

EXECUTIVE COUNCIL

PUBLIC

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Portfolio Holder:	MLA Roger Spink
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Previous papers:	None
List of Documents:	Appendix 1 National Frequency Allocation Table

1. Recommendations

Honourable Members are recommended to support:

- (a) The ongoing work of the Communications Regulator (the Regulator) in the establishment of spectrum management in the Falkland Islands as prescribed by the Communications Ordinance (2017)

- (b) And recognise that spectrum management is only of benefit if continuing resource is committed to maintain and update the National Frequency Allocation Table and licensing regime.

2. Additional Budgetary Implications

- 2.1 Budget has been allocated for 2018-19 and future requirements will be defined following the outcome of consultation on the Spectrum Management Framework.

3. Executive Summary

- 3.1 The Communications Regulator is appointed by the Governor and is operationally independent from the Falkland Islands Government. Under the Communications Ordinance the Regulator must not be subject to the direction or control of any person or authority. However, the Governor may give policy directions to the Regulator in the exercise of functions relating to the management of state assets, which includes the radio spectrum.
- 3.2 The Regulator has a statutory responsibility through the Communications Ordinance to have general responsibility for the management of the radio spectrum in the Falkland Islands and in particular, be responsible for allocation of frequencies in the radio spectrum by way of licence.
- 3.3 The Regulator must publish a plan for the use of the radio spectrum within the Falkland Islands. The first spectrum plan must be published during the period of 2 years beginning with the date of the commencement of the Communications Ordinance. A spectrum plan must be in place by 31 March 2019. The Regulator must then revise and re-publish the spectrum plan within three years of the initial publication. This is detailed in the Communications Ordinance (2017) Part 6 s54(1-5).
- 3.4 The Regulator has worked with Plum Consulting to establish a National Frequency Allocation Table (NFAT) and proposals for a Spectrum Management Framework. The framework includes the policy and procedures for how spectrum will be allocated and licensed. The NFAT together with the Spectrum Management Framework combine to form the spectrum plan for the Falkland Islands.

4. Background and Links to Islands Plan and Directorate Business Plan/s

- 4.1 Spectrum is a key input for the provision of electronic communication services and networks. It is used to provide both mobile and fixed telecommunication services to residential consumers and businesses. Radio spectrum is a major asset and the appropriate management of this finite resource is essential to ensure that services using spectrum continue to function and develop.
- 4.2 It is important for both the social and economic development of the Falkland Islands that it has a Spectrum Management Framework (SMF) that delivers efficient use of radio spectrum, minimises the potential for interference, is simple to administer and can keep track with the changes to spectrum using services.

- 4.3 Plum consulting was appointed in February 2018, following a request for proposals initiated in October 2017, and a formal contract was signed commencing the project in March 2018. The objective of the Regulator, through this project, is to move the Falklands towards a model which adopts sound principles for spectrum management and meets the obligations placed on the Regulator, through Part 6 of the Communications Ordinance, for managing the spectrum.
- 4.4 The NFAT is the basis on which spectrum licensing can be initiated and the SMF determines how that will be done.
- 4.5 Efforts have been made to identify current spectrum usage. Whilst a number of responses have been received it is anticipated that there will be spectrum use that has not been identified.
- 4.6 The publication of the NFAT is the start of the process. To meet the needs of modern spectrum management this document will be a living document which will need to be updated to reflect new spectrum allocations and international spectrum decisions made at the World Radiocommunication Conference (WRC). The next conference will be taking place from 28 October – 22 November 2019.
- 4.7 The Spectrum Management Policy will need to include:

Policy Principles of spectrum management – this is required to create transparency in the spectrum management process. Spectrum users need to understand how spectrum will be managed and what is expected of them as users. Spectrum is a finite resource, whilst the spectrum in the Falklands does not face the same pressures as more populated areas the same principles should apply which provides users with incentives and opportunities to make the most efficient and productive use of spectrum. It should also recognise the essential roles and considerable value of defence, emergency services and other public services and make provisions in spectrum allocation to meet the reasonable communications needs of such services. Policy principles will also need to address the approach in avoiding harmful interference and the policy on setting spectrum fees.

Type Approvals – type approvals are granted to a product that meets a minimum set of regulatory, technical and safety requirements. Generally type approval is required before a product is allowed to be sold in a particular country. Type approval is not a term confined to a particular industry. Type approval requirements exist for products as diverse as marine equipment, mobile phones, automotive industry or medical equipment. Type approval simply means that the product is certified to meet certain requirements for its type, whatever that might be. There is currently no formal type approval regime in the Falkland Islands which means that equipment bought abroad can be brought into the country, installed and operated without any restrictions. This can potentially lead to interference with users. There needs to be a way of minimising the risk of equipment being imported that does not correspond with the use detailed in the NFAT, which may lead to interference issues. Consultation on the Spectrum Management Framework will include proposals on how to implement type approval in the Falkland Islands and the policy associated with this.

Spectrum allocation

To implement spectrum management principles efficiently and effectively comprehensive and accurate information on the actual allocation and assignment of spectrum licensees and users and the technical characteristics of the usage of the frequencies involved must be available and kept up to date so that the regulator can allocate and assign new frequencies, and re-assign existing frequencies to licensees with confidence that they will not cause or be subject to harmful interference and be in a position to resolve spectrum planning and interference issues in a timely manner from a sound and well documented base of knowledge. To fulfil these tasks effectively the NFAT has been developed. In addition to what has been presented in the NFAT there is a need to identify demand for additional spectrum, and the justification and conditions for re-allocation and re-assignment of existing frequencies if required.

In respect of the high-level allocation policy there is a question on whether there should be a presumption that allocations will follow the Region 1 or Region 2 plan (explained in Appendix A). It can be seen from the NFAT that in many frequency ranges there is no, or limited, difference between the Region 1 and Region 2 allocations. From the audit already undertaken it is apparent that there is spectrum use both in Region 1 and Region 2. The Region 1 usage is as a result of the close links with the United Kingdom and the use of Region 1 technology. The Regulator is proposing to continue with Region 1 allocation policy where appropriate but will allow for Region 2 allocations where the risk of interference has been assessed by the interested parties. Given the widespread usage of Region 1 technology this is a pragmatic position to take rather than simply following the geographical regions which places the Falkland Islands in Region 2. The risk of harmful interference with other geographical locations in the region is limited due to the geographical isolation of the Falkland Islands.

Spectrum assignment

Over time demand for spectrum will change. This will be driven both by the adoption of new technology and an increase in the volume of devices using spectrum. Both will create the need for access to spectrum bands and, through increased technological efficiency, should also make such demand more efficient. To date in the Falkland Islands frequencies have been assigned on an administrative or first come first serviced (FCFS) approach. This approach works where there is availability of spectrum because all needs can generally be met. However there needs to be a clear policy on assignment to support this approach particularly for major new assignments or significant changes to current assignments the Regulator should consider whether public consultation is required.

Spectrum assignment – public sector use

Radio spectrum provides vital services within the public sector. It is important that sufficient and appropriate spectrum is available for these services. It is recommended that a process is followed that mirrors that for commercial services, but recognises that the commercial terms for use of the spectrum may be different.

5. Options and Reasons for Recommending Relevant Option

- 5.1 The Spectrum Management Framework and National Frequency Allocation Table are being made pursuant to Part 6 of the Communications Ordinance 2017. The proposals

that will be consulted on have been developed based on external expertise in international spectrum management and input from spectrum users in the Falkland Islands.

6. Resource Implications

6.1 Financial Implications

Executive Council is not being asked to approve anything with a specific financial impact but rather is asked to recognise that financial resources will need to be committed if the spectrum is to be managed effectively on an ongoing basis and if the Regulator is going to meet its obligations for managing the spectrum.

6.2 Options for future delivery of a licensing system and spectrum monitoring have yet to be developed but will follow as a natural outcome of the requirement to manage the spectrum and will be considered as part of the annual budget process.

6.3 Human Resource Implications

None for the purposes of this paper. If the delivery of spectrum management is to be achieved it has to be recognised that moving from an ad hoc system of spectrum allocation to a system of managing the spectrum, as required through the Communications Ordinance (2017) will have human resource implications. At such a time that the implementation has reached such a point where additional human resource should be required this will be presented in a future Executive Council paper or addressed through the annual budget process. This is the natural conclusion of the obligations created through the Communications Ordinance (2017) and the Wireless Telegraphy Ordinance (1994)

6.4 Other Resource Implications

None

7. Legal Implications

7.1 Secondary legislation will be required under section 55 of the Communications Ordinance to implement spectrum licensing “*the Governor may by regulations provide for the procedures to be followed in connection with licences and applications for licences*”. This will be submitted to the Executive Committee following conclusion of the consultation process.

8. Environmental & Sustainability Implications

8.1 As the economy and population grows and connectivity improves the number of connected devices will grow and the instances of interference will increase if appropriate spectrum management isn’t implemented.

9. Significant Risks

- 9.1 Relying on an ad hoc approach to spectrum management (the current status quo) will result in an increased risk of interference and the associated impact on services using spectrum as seen with the issues between 4G and KTV.
- 9.2 Continuing the ad hoc approach to spectrum management would lead to an increased risk of criticism, possible litigation and ultimately the trust and confidence people have in the Regulator.
- 9.3 Once implemented spectrum management will require ongoing work to maintain its ongoing relevance. This is only possible with the appropriate financial and human resource year on year. Without oversight the spectrum plan will become irrelevant and the risk of interference increases and the associated costs of rectifying this.

10. Consultation

- 10.1 Consultation has been undertaken with spectrum users in the creation of the draft NFAT.
- 10.2 Future consultation will be required on aspects of the SMF which will include
- specific groups of current and future spectrum users on licensing procedures which will need to include consultation on spectrum fees and the conditions attached to spectrum licences.
 - The relevant MLA portfolio holders
 - Any Government directorate currently licensing under the Wireless Telegraphy Ordinance

11. Communication

- 11.1 No specific communication is required in relation to this paper. Specific communication strategies will be devised by the Regulator for the consultation phase and implementation of any new licensing requirements and procedures.

Schedule of suggested deletions to enable publication of paper

Appendix A National Frequency Allocation Table – comments column of the NFAT to be deleted prior to publications of paper

FALKLAND ISLANDS SPECTRUM ALLOCATION TABLE

In the table below the comment FI 1 refers to Defence managed spectrum.

Frequency Units	Allocation to Services Region 1	Allocation to Services Region 2	Allocation to Services for the Falkland Islands
kHz	Below 8.3 Not allocated 5.53 5.54		
kHz	8.3-9 METEOROLOGICAL AIDS 5.54A 5.54B 5.54C		
kHz	9-11.3 METEOROLOGICAL AIDS 5.54A RADIONAVIGATION		
kHz	11.3-14 RADIONAVIGATION		11.3-14 RADIONAVIGATION
kHz	14-19.95 FIXED MARITIME MOBILE 5.57 5.55 5.56		14-19.95 FIXED MARITIME MOBILE 5.57 5.55 5.56
kHz	19.95-20.05 STANDARD FREQUENCY AND TIME SIGNAL (20kHz)		19.95-20.05 Standard frequency time and signal (reception)
kHz	20.05-70 FIXED MARITIME MOBILE 5.57 5.55 5.56		20.05-70 FIXED MARITIME MOBILE 5.57 5.55 5.56
kHz	70-72 RADIONAVIGATION 5.62	70 – 90 FIXED	

REDACTED

kHz	72-84 FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60 5.56	MARITIME MOBILE 5.57 MARITIME RADIONAVIGATION 5.60 Radiolocation	72-84 FIXED MARITIME MOBILE 5.57
kHz	84-86 RADIONAVIGATION 5.60		
kHz	86-90 FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.56		86-90 FIXED MARITIME MOBILE 5.57
kHz	90-110 RADIONAVIGATION 5.62 Fixed 5.64		
kHz	110 - 112 FIXED MARITIME MOBILE RADIONAVIGATION 5.64	110 - 130 FIXED MARITIME MOBILE MARITIME RADIO NAVIGATION 5.60 Radiolocation 5.61 5.64	110 - 112 FIXED MARITIME MOBILE
kHz	112-115 RADIONAVIGATION 5.60		
kHz	115 – 117.6 RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64 5.66		115 – 117.6 Maritime mobile

kHz	117.6-126 FIXED MARITIME MOBILE RADIONAVIGATION 5.64		117.6-126 FIXED MARITIME MOBILE RADIONAVIGATION
kHz	126-129 RADIONAVIGATION 5.60		
kHz	129-130 FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64		129-130 FIXED MARITIME MOBILE
kHz	130-135.7 FIXED MARITIME MOBILE 5.64 5.67	130-135.7 FIXED MARITIME MOBILE 5.64	130-135.7 FIXED MARITIME MOBILE 5.64
kHz	135.7-137.8 FIXED MARITIME MOBILE Amateur 5.67A 5.64 5.67 5.67B	135.7-137.8 FIXED MARITIME MOBILE Amateur 5.67A 5.64	135.7-137.8 FIXED MARITIME MOBILE Amateur 5.67A 5.64
kHz	137.8-148.5 FIXED MARITIME MOBILE 5.64 5.67	137.8-160 FIXED MARITIME MOBILE 5.64	137.8-148.5 FIXED MARITIME MOBILE 5.64
kHz	148.5-255 BROADCASTING 5.68 5.69 5.70		
		160-190	

kHz		FIXED	
		190-200 AERONAUTICAL RADIONAVIGATION	
kHz		200-275 AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION
kHz	255—283.5 BROADCASTING AERONAUTICAL RADIONAVIGATION 5.70 5.71	Aeronautical mobile	
		275-285 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radiobeacons)	
kHz	283.5-315 AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73 5.75		
kHz		285-315 AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73	
kHz	315-325 AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radiobeacons) 5.73 5.75	315-325 MARITIME RADIONAVIGATION (radiobeacons) 5.73 Aeronautical radionavigation	
kHz	325-405 AERONAUTICAL RADIONAVIGATION	325-335 AERONAUTICAL RADIONAVIGATION Aeronautical mobile	325-335 Aeronautical radionavigation: Non Directional Beacons

		Maritime radionavigation (radiobeacons)	
kHz		335-405 AERONAUTICAL RADIONAVIGATION Aeronautical mobile	335-405 Aeronautical radionavigation: Non Directional Beacons
kHz	405-415 RADIONAVIGATION 5.76	405-415 RADIONAVIGATION 5.76 Aeronautical Mobile	? aeronautical radionavigation
kHz	415-435 MARITIME MOBILE 5.79 AERONAUTICAL RADIONAVIGATION	415-472 MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.80 5.77 5.78 5.82	415-435 AERONAUTICAL RADIONAVIGATION
kHz	435-472 MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.77		435-472 MARITIME MOBILE 5.79
kHz	472-479 MARITIME MOBILE 5.79 Amateur 5.80A Aeronautical radionavigation 5.77 5.80 5.80B 5.82		472-479 MARITIME MOBILE 5.79
kHz	479-495 MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.77 5.82	479-495 MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.77 5.80 5.82	479-495 MARITIME MOBILE 5.79 5.79A

kHz	495-505 MARITIME MOBILE		
kHz	505-526.5 MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION	505-510 MARITIME MOBILE 5.79	505-526.5 MARITIME MOBILE 5.79 5.79A 5.84
		510-525 MARITIME MOBILE 5.79A 5.84 AERONAUTICAL RADIONAVIGATION	
		525-535	
kHz	526.5-1606.5 BROADCASTING 5.87 5.87A	BROADCASTING 5.86 AERONAUTICAL RADIONAVIGATION	
		535-1605 BROADCASTING	
		1605-1625	
kHz	1606.5-1625 FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	BROADCASTING 5.89 5.90	1606.5-1625 FIXED LAND MOBILE RADIOLOCATION
kHz	1625-1635 RADIOLOCATION 5.93	1625-1705 FIXED MOBILE BROADCASTING 5.89	1625-1635 RADIOLOCATION
kHz	1635-1800 FIXED MARITIME MOBILE 5.90	Radiolocation 5.90	1635-1800
		1705-1800 FIXED	MARITIME MOBILE 5.90 LAND MOBILE

	LAND MOBILE 5.92 5.96	MOBILE RADIOLOCATION AERONAUTICAL RADIONAVIGATION	RADIOLOCATION
kHz	1800-1810 RADIOLOCATION 5.93	1800-1850 AMATEUR	1800-1810 RADIOLOCATION
kHz	1810-1850 AMATEUR 5.98 5.99 5.100		
kHz	1850-2000 FIXED MOBILE except aeronautical mobile 5.92 5.96 5.103	1850-2000 AMATEUR FIXED MOBILE except aeronautical mobile RADIOLOCATION RADIONAVIGATION 5.102	1850-2000 FIXED MOBILE except aeronautical mobile RADIOLOCATION
kHz	2000-2025 FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	2000-2065 FIXED MOBILE	2000-2025 FIXED MOBILE except aeronautical mobile (R) RADIOLOCATION
kHz	2025-2045		2025-2045
	FIXED		FIXED
	MOBILE except aeronautical mobile (R) Meteorological aids 5.104 5.92 5.103		MOBILE except aeronautical mobile (R)

kHz	2045-2160		2045-2160
kHz	FIXED	2065-2107	FIXED
	MARITIME MOBILE	MARITIME MOBILE 5.105	MARITIME MOBILE
	LAND MOBILE	5.106	LAND MOBILE
kHz	5.92	2107-2170	RADIOLOCATION
kHz	2160-2170	FIXED	2160-2170
	RADIOLOCATION	MOBILE	RADIOLOCATION
	5.93 5.107		FIXED
kHz	2170-2173.5		
	MARITIME MOBILE		
kHz	2173.5-2190.5		
	MOBILE (distress and calling) 5.108 5.109 5.110 5.111		MOBILE (distress and calling)
kHz	2190.5-2194		2190.5-2194
	MARITIME MOBILE		MARITIME MOBILE
kHz	2194-2300	2194-2300	2194-2300
	FIXED	FIXED	FIXED
	MOBILE except aeronautical mobile (R)	MOBILE	MOBILE except aeronautical mobile (R)
	5.92 5.103 5.112	5.112	RADIOLOCATION
kHz	2300-2498	2300-2495	2300-2498
	FIXED	FIXED	FIXED
	MOBILE except aeronautical mobile (R)	MOBILE	MOBILE except aeronautical mobile (R)
	BROADCASTING 5.113	BROADCASTING 5.113	
kHz		2495-2501	2498-2501
	2498-2501	STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)	
kHz	STANDARD FREQUENCY AND		STANDARD FREQUENCY AND

	TIME SIGNAL (2500 kHz)		TIME SIGNAL (2500 kHz)
kHz	2501-2502 STANDARD FREQUENCY AND TIME SIGNAL Space Research		2501-2502 STANDARD FREQUENCY AND TIME SIGNAL
kHz	2502-2625 FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.114	2502-2505 STANDARD FREQUENCY AND TIME SIGNAL	2502-2625 FIXED MOBILE except aeronautical mobile (R) RADIOLOCATION
kHz	2625-2650 MARITIME MOBILE MARITIME RADIONAVIGATION 5.92	2505-2850 FIXED MOBILE	2625-2650 MARITIME MOBILE RADIOLOCATION
kHz	2650-2850 FIXED MOBILE except aeronautical mobile (R) 5.92 5.103		2650-2850 FIXED MOBILE except aeronautical mobile (R) RADIOLOCATION
kHz	2850-3025 AERONAUTICAL MOBILE (R) 5.111 5.115		2850-3025 AERONAUTICAL MOBILE (R) 5.111 5.115
kHz	3025-3155 AERONAUTICAL MOBILE (OR)		3025-3155 AERONAUTICAL MOBILE (OR)
kHz	3155-3200 FIXED MOBILE except aeronautical mobile (R) 5.116 5.117		3155-3200 FIXED MOBILE except aeronautical mobile (R)

kHz	3200-3230 FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116		3200-3230 FIXED MOBILE except aeronautical mobile (R)
kHz	3230-3400 FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116 5.118		3230-3400 FIXED MOBILE except aeronautical mobile
kHz	3400-3500 AERONAUTICAL MOBILE(R)		
kHz	3500-3800 AMATEUR FIXED MOBILE except aeronautical mobile 5.92	3500-3750 AMATEUR 5.119	3500-3800 AMATEUR FIXED MOBILE except aeronautical mobile RADIOLOCATION
kHz			
kHz	3800-3900 FIXED MOBILE except aeronautical mobile (R) LAND MOBILE	3750-4000 AMATEUR FIXED MOBILE except aeronautical mobile (R) 5.122 5.125	3800-3900 FIXED MOBILE except aeronautical mobile (R) LAND MOBILE
kHz	3900-3950 AERONAUTICAL MOBILE (OR) 5.123		3900-3950 AERONAUTICAL MOBILE (OR)
kHz	3950-4000 FIXED BROADCASTING		

kHz	4000-4063 FIXED MARITIME MOBILE 5.127 5.126		4000-4063 FIXED MARITIME MOBILE 5.127
kHz	4063-4438 MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132		MARITIME MOBILE
kHz	4438-4488 FIXED MOBILE except aeronautical (R) Radiolocation 5.132A	4438-4488 FIXED MOBILE except aeronautical (R) RADIOLOCATION 5.132A	4438-4488 FIXED MOBILE except aeronautical (R) Radiolocation 5.132A
kHz	4488-4650 FIXED MOBILE except aeronautical (R)		4488-4650 FIXED MOBILE except aeronautical (R)
kHz	4650-4700 AERONAUTICAL MOBILE (R)		
kHz	4700-4750 AERONAUTICAL MOBILE (OR)		4700-4750 AERONAUTICAL MOBILE (OR)
kHz	4750-4850 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 5.113	4750-4850 FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113	4750-4850 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE
kHz	4850-4995 FIXED		4850-4995 FIXED

	LAND MOBILE BROADCASTING 5.113		LAND MOBILE
kHz	4995-5003 STANDARD FREQUENCY AND TIME SIGNAL (5000 kHz)		4995-5003 STANDARD FREQUENCY AND TIME SIGNAL (5000 kHz)
kHz	5003-5005 STANDARD FREQUENCY AND TIME SIGNAL		5003-5005 STANDARD FREQUENCY AND TIME SIGNAL
kHz	5005-5060 FIXED BROADCASTING 5.113		5005-5060 FIXED
kHz	5060-5250 FIXED Mobile except aeronautical mobile 5.133		5060-5250 FIXED Mobile except aeronautical mobile
kHz	5250-5275 FIXED MOBILE except aeronautical mobile Radiolocation 5.132A 5.133A	5250-5275 FIXED MOBILE except aeronautical mobile RADIOLOCATION 5.132A	5250-5275 FIXED MOBILE except aeronautical mobile
kHz	5275-5351.5 FIXED MOBILE except aeronautical mobile		5275-5351.5 FIXED MOBILE except aeronautical mobile
kHz	5351.5-5366.5 FIXED MOBILE except aeronautical mobile Amateur 5.133B		5351.5-5366.5 FIXED MOBILE except aeronautical mobile Amateur 5.133B
kHz	5366.5-5450		5366.5-5450

	FIXED MOBILE except aeronautical mobile		FIXED MOBILE except aeronautical mobile
kHz	5450-5480 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	5450-5480 AERONAUTICAL MOBILE (OR)	5450-5480 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE
kHz	5480-5680 AERONAUTICAL MOBILE (R) 5.111 5.115		
kHz	5680-5730 AERONAUTICAL MOBILE (OR) 5.111 5.115		5680-5730 AERONAUTICAL MOBILE (OR) 5.111 5.115
kHz	5730-5900 FIXED LAND MOBILE	5730-5900 FIXED MOBILE except for aeronautical mobile (R)	5730-5900 FIXED LAND MOBILE
kHz	5900-5950 BROADCASTING 5.134 5.136		
kHz	5950-6200 BROADCASTING		
kHz	6200-6525 MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137		6200-6525 MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137
kHz	6526-6685 AERONAUTICAL MOBILE (R)		
kHz	6685-6765 AERONAUTICAL MOBILE (OR)		6685-6765 AERONAUTICAL MOBILE (OR)
kHz	6765-7000 FIXED		6765-7000 FIXED

	MOBILE except for aeronautical mobile (R) 5.138		MOBILE except for aeronautical mobile (R) 5.138
kHz	7000-7100 AMATEUR AMATEUR-SATELLITE 5.140 5.141 5.141A		
kHz	7100-7200 AMATEUR 5.141A 5.141B		
kHz	7200-7300 AMATEUR 5.142	7200-7300 BROADCASTING	
kHz	7300-7400 BROADCASTING 5.134 5.143 5.143A 5.143B 5.143C 5.143D		
kHz	7400-7450 BROADCASTING 5.143B 5.143C	7400-7450 FIXED MOBILE except for aeronautical mobile (R)	
kHz	7450-8100 FIXED MOBILE except for aeronautical mobile (R) 5.144		7450-8100 FIXED Land Mobile
kHz	8100-8195 FIXED MARITIME MOBILE		8100-8195 FIXED MARITIME MOBILE
kHz	8195-8815 MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111		8195-8815 MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111

kHz	8815-8965 AERONAUTICAL MOBILE (R)	
kHz	8965-9040 AERONAUTICAL MOBILE (OR)	8965-9040 AERONAUTICAL MOBILE (OR)
kHz	9040-9400 FIXED	9040-9305 FIXED
		9305-9355
		FIXED
		Radiolocation
		9355-9400
		FIXED
kHz	9400-9500 BROADCASTING 5.134 5.146	
kHz	9500-9900 BROADCASTING 5.147	
kHz	9900-9995 FIXED	9900-9995 FIXED
kHz	9995-10003 STANDARD FREQUENCY AND TIME SIGNAL (10000 kHz) 5.111	
kHz	10003-10005 STANDARD FREQUENCY AND TIME SIGNAL Space Research 5.111	
kHz	10005-10100 AERONAUTICAL MOBILE (R) 5.111	

kHz	10100-10150 FIXED Amateur	10100-10150 FIXED
kHz	10150-11175 FIXED Mobile except aeronautical mobile (R)	10150-11175 FIXED Mobile except aeronautical mobile (R)
kHz	11175-11275 AERONAUTICAL MOBILE (OR)	11175-11275 AERONAUTICAL MOBILE (OR)
kHz	11275-11400 AERONAUTICAL MOBILE (R)	
kHz	11400-11600 FIXED	11400-11600 FIXED
kHz	11600-11650 BROADCASTING 5.134 5.146	
kHz	11650-12050 BROADCASTING 5.147	
kHz	12050-12100 BROADCASTING 5.134 5.146	
kHz	12100-12230 FIXED	
kHz	12230-13200 MARITIME MOBILE 5.109 5.110 5.132 5.145	12230-13200 MARITIME MOBILE 5.109 5.110 5.132 5.145
kHz	13200-13260 AERONAUTICAL MOBILE (OR)	
kHz	13260-13360	

	AERONAUTICAL MOBILE (R)		
kHz	13360-13410 FIXED RADIO ASTRONOMY 5.149		13360-13410 FIXED RADIO ASTRONOMY 5.149
kHz	13410-13450 FIXED Mobile except aeronautical mobile (R)		13410-13450 FIXED Mobile except aeronautical mobile (R)
kHz	13450-13550 FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132A 5.149A	13450-13550 FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132A	13450-13550 FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132A
kHz	13550-13570 FIXED Mobile except aeronautical mobile (R)		13550-13570 FIXED Mobile except aeronautical mobile (R)
kHz	13570-13600 BROADCASTING 5.134 5.151		
kHz	13600-13800 BROADCASTING		
kHz	13800-13870 BROADCASTING 5.134 5.151		
kHz	13870-14000 FIXED Mobile except aeronautical mobile (R)		13870-14000 FIXED Mobile except aeronautical mobile (R)

kHz	14000-14250 AMATEUR AMATEUR-SATELLITE	14000-14250 AMATEUR AMATEUR-SATELLITE
kHz	14250-14350 AMATEUR 5.152	14250-14350 AMATEUR
kHz	14350-14990 FIXED Mobile except aeronautical (R)	14350-14990 FIXED Mobile except aeronautical (R)
kHz	14990-15005 STANDARD FREQUENCY AND TIME SIGNAL (15000kHz) 5.111	14990-15005 STANDARD FREQUENCY AND TIME SIGNAL (15000kHz) 5.111
kHz	15005-15010 STANDARD FREQUENCY AND TIME SIGNAL Space research	15005-15010 STANDARD FREQUENCY AND TIME SIGNAL Space research
kHz	15010-15100 AERONAUTICAL MOBILE (OR)	15010-15100 AERONAUTICAL MOBILE (OR)
kHz	15100-15600 BROADCASTING	
kHz	15600-15800 BROADCASTING 5.134 5.146	
kHz	15800-16100 FIXED 5.153	15800-16100 FIXED
kHz	16100-16200 FIXED Radiolocation 5.145A 5.145B	16100-16200 FIXED Radiolocation 5.145A

kHz	16200-16360 FIXED	16200-16360 FIXED
kHz	16360-17410 MARITIME MOBILE 5.109 5.110 5.132 5.145	16360-17410 MARITIME MOBILE 5.109 5.110
kHz	17410-17480 FIXED	17410-17480 FIXED
kHz	17480-17550 BROADCASTING 5.134 5.146	
kHz	17550-17900 BROADCASTING	
kHz	17900-17970 AERONAUTICAL MOBILE (R)	
kHz	17970-18030 AERONAUTICAL MOBILE (OR)	17970-18030 AERONAUTICAL MOBILE (OR)
kHz	18030-18052 FIXED	18030-18052 FIXED
kHz	18052-18068 FIXED Space research	18052-18068 FIXED
kHz	18068-18168 AMATEUR AMATEUR SATELLITE 5.154	
kHz	18168-18780 FIXED Mobile except aeronautical mobile	18168-18780 FIXED Mobile except aeronautical mobile
kHz	18780-18900 MARITIME MOBILE	18780-18900 MARITIME MOBILE
kHz	18900-19020	

	BROADCASTING 5.134 5.146	
kHz	19020-19680 FIXED	19020-19680 FIXED
kHz	19680-19800 MARITIME MOBILE 5.132	19680-19800 MARITIME MOBILE 5.132
kHz	19800-19990 FIXED	19800-19990 FIXED
kHz	19990-19995 STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	19990-19995 STANDARD FREQUENCY AND TIME SIGNAL 5.111
kHz	19995-20010 STANDARD FREQUENCY AND TIME SIGNAL (20000kHz) 5.111	19995-20010 STANDARD FREQUENCY AND TIME SIGNAL (20000kHz) 5.111
kHz	20010-21000 FIXED Mobile	20010-21000 FIXED Mobile
kHz	21000-21450 AMATEUR AMATEUR SATELLITE	
kHz	21450-21850 BROADCASTING	
kHz	21850-21870 FIXED 5.155A 5.155	21850-21870 FIXED
kHz	21870-21924 FIXED 5.155B	
kHz	21924-22000	

	AERONAUTICAL MOBILE (R)		
kHz	22000-22855 MARITIME MOBILE 5.132 5.156		22000-22855 MARITIME MOBILE 5.132
kHz	22855-23000 FIXED 5.156		22855-23000 FIXED
kHz	23000-23200 FIXED Mobile except aeronautical mobile 5.156		23000-23200 FIXED Mobile except aeronautical mobile
kHz	23200-23350 FIXED 5.156A AERONAUTICAL MOBILE (OR)		23200-23350 FIXED 5.156A AERONAUTICAL MOBILE (OR)
kHz	23350-24000 FIXED MOBILE except aeronautical mobile 5.157		23350-24000 FIXED MOBILE except aeronautical mobile 5.157
kHz	24000-24450 FIXED LAND MOBILE		24000-24450 FIXED LAND MOBILE
	24450-24600 FIXED LAND MOBILE Radiolocation 5.132A 5.158	24450-24650 FIXED LAND MOBILE RADIOLOCATION 5.132A	24450-24600 FIXED LAND MOBILE Radiolocation 5.132A 24600-24890 FIXED LAND MOBILE
kHz	24600-24890 FIXED LAND MOBILE		
kHz		24605-24890	
		FIXED LAND MOBILE	
kHz	24890-24990		

	AMATEUR AMATEUR SATELLITE	AMATEUR AMATEUR SATELLITE
kHz	24990-25005 STANDARD FREQUENCY AND TIME SIGNAL (25000kHz)	24990-25005 STANDARD FREQUENCY AND TIME SIGNAL (25000kHz)
kHz	25005-25010 STANDARD FREQUENCY AND TIME SIGNAL Space research	25005-25010 STANDARD FREQUENCY AND TIME SIGNAL
kHz	25010-25070 FIXED MOBILE except aeronautical mobile	25010-25070 MOBILE except aeronautical mobile
kHz	25070-25210 MARITIME MOBILE	25070-25210 MARITIME MOBILE
kHz	25210-25550 FIXED MOBILE except aeronautical mobile	25210-25550 FIXED MOBILE except aeronautical mobile
kHz	25550-25670 RADIO ASTRONOMY 5.149	
kHz	25670-26100 BROADCASTING	
kHz	26100-26175 MARITIME MOBILE 5.132	26100-26175 MARITIME MOBILE 5.132
kHz	26175-26200 FIXED MOBILE except aeronautical mobile 5.15	26175-26200 FIXED MOBILE except aeronautical mobile
kHz	26200-26350	26200-26420 26200-26350

kHz	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A 5.133A	FIXED MOBILE except aeronautical mobile RADIOLOCATION 5.132A	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A
	26350-27500	26420-27500 FIXED MOBILE except aeronautical mobile 5.150	26350-27500
	FIXED MOBILE except aeronautical mobile 5.150		FIXED MOBILE except aeronautical mobile
MHz	27.5-28 METROLOGICAL AIDS FIXED MOBILE		27.5-28 FIXED MOBILE
MHz	28-29.7 AMATEUR AMATEUR SATELLITE		28-29.7 AMATEUR AMATEUR SATELLITE
MHz	29.7-30.005 FIXED MOBILE		29.7-30.005 FIXED MOBILE
MHz	30.005-30.01 SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH		30.005-30.01 FIXED MOBILE
MHz	30.01-37.5 FIXED MOBILE		30.01-37.5 FIXED MOBILE

MHz	37.5-38.25 FIXED MOBILE Radio astronomy 5.149		37.5-38.25 FIXED MOBILE
MHz	38.25-39 FIXED MOBILE	38.25-39.986 FIXED MOBILE	38.25-39 FIXED MOBILE
MHz	39-39.5 FIXED MOBILE Radiolocation 5.132A 5.159		39-39.5 FIXED MOBILE Radiolocation 5.132A
MHz	39.5-39.986 FIXED MOBILE		39.5-39.986 FIXED MOBILE
MHz	39.986-40.02 FIXED MOBILE Space research		39.986-40.02 MOBILE
MHz	40.02-40.98 FIXED MOBILE 5.150		40.02-40.98 MOBILE
MHz	40.98-41.015 FIXED MOBILE Space research 5.160 5.161		40.98-41.015 MOBILE

MHz	41.015-42 FIXED MOBILE 5.160 5.161 5.161A		41.015-42 FIXED MOBILE
MHz	42-42.5 FIXED MOBILE Radiolocation 5.132A 5.160 5.161B	42-42.5 FIXED MOBILE 5.161	42-42.5 FIXED MOBILE
MHz	42.5-44 FIXED MOBILE 5.160 5.161 5.161A		42.5-44 FIXED MOBILE
MHz	44-47 FIXED MOBILE 5.162 5.162A		44-47 MOBILE
MHz	47-68 BROADCASTING 5.162A 5.163 5.164 5.165 5.169 5.171	47-50 FIXED MOBILE	50-54 AMATEUR 51-52 LAND MOBILE
MHz		50-54 AMATEUR 5.162A 5.167 5.167A 5.168 5.170	
MHz		54-68 BROADCASTING Fixed Mobile 5.172	

MHz	68-74.8 FIXED MOBILE except aeronautical mobile 5.149 5.175 5.177 5.179	68-72 BROADCASTING Fixed Mobile 5.173	68-70.5 MOBILE except aeronautical mobile 72.8-74.8 LAND MOBILE
		72-73 FIXED MOBILE	
		73-74.6 RADIO ASTRONOMY 5.178	
		74.6-74.8 FIXED MOBILE	
MHz	74.8-75.2 AERONAUTICAL RADIONAVIGATION 5.180 5.181		
MHz	75.2-87.5 FIXED MOBILE except aeronautical mobile 5.175 5.179 5.187	75.2-75.4 FIXED MOBILE 5.179	75.2-76.7 MOBILE 78-80 MOBILE 80-87.5
		75.4-76 FIXED MOBILE	
		76-88 BROADCASTING Fixed	

		Mobile	FIXED
	87.5-100	5.185	MOBILE
	BROADCASTING	88-100	88-108
	5.190	BROADCASTING	BROADCASTING
MHz	100-108		
	BROADCASTING		
	5.192 5.194		
MHz	108-117.975		108-118
	AERONAUTICAL RADIONAVIGATION		AERONAUTICAL
	5.197 5.197A		RADIONAVIGATION
MHz	117.975-137		118-137
	AERONAUTICAL MOBILE (R)		AERONAUTICAL MOBILE
	5.111 5.200 5.201 5.202		
MHz	137-137.025		137-137.025
	SPACE OPERATION (space-to-Earth)		MOBILE
	METEOROLOGICAL-SATELLITE (space-to-Earth)		MOBILE-SATELLITE
	MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209		Space operation (space to
	SPACE RESEARCH (space-to-Earth)		Earth)
	Fixed		
	Mobile except aeronautical mobile (R)		
	5.204 5.205 5.206 5.207 5.208		
MHz	137.025-137.175		137.025-137.175
	SPACE OPERATION (space-to-Earth)		MOBILE
	METEOROLOGICAL-SATELLITE (space-to-Earth)		Mobile satellite (space to
	SPACE RESEARCH (space-to-Earth)		Earth) 5.208A 5.208B 5.209
	Fixed		
	Mobile except aeronautical mobile (R)		

	Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.204 5.205 5.206 5.207 5.208		
MHz	137.175-137.825 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208		137.175-137.825 MOBILE MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209
MHz	137.825-138 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.204 5.205 5.206 5.207 5.208		137.825-138 Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209
MHz	138-143.6 AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212.5.214	138-143.6 FIXED MOBILE RADIOLOCATION Space research (space-to-Earth)	141.9-143 AERONAUTICAL RADIO LAND MOBILE
MHz	143.6-143.65 AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space-to-Earth) 5.211 5.212.5.214	143.6-143.65 FIXED MOBILE RADIOLOCATION	

		SPACE RESEARCH (space-to-Earth)	
MHz	143.65-144 AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212.5.214	143.65-144 FIXED MOBILE RADIOLOCATION SPACE RESEARCH (space-to-Earth)	
MHz	144-146 AMATEUR AMATEUR SATELLITE 5.216		144-148 AMATEUR
MHz	146-148 FIXED MOBILE except aeronautical mobile (R)	146-148 AMATEUR 5.217	
MHz	148-149.9 FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to- space) 5.209 5.218 5.219 5.221	148-149.9 FIXED MOBILE MOBILE-SATELLITE (Earth- to-space) 5.209 5.218 5.219 5.221	149-149.9 MOBILE except aeronautical mobile (R)
MHz	149.9-150.05 Mobile satellite (Earth-to-space) 5.209 5.224A		
MHz	150.05-153 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	150.05-154 FIXED MOBILE 5.225	

MHz	153-154 FIXED MOBILE except aeronautical mobile (R) Meteorological aids		153.4-154 MOBILE except aeronautical mobile
MHz	154-156.4875 FIXED MOBILE except aeronautical mobile (R) 5.225A 5.226	154-156.4875 FIXED MOBILE 5.226	MOBILE
MHz	156.4875-156.5625 MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227		MARITIME MOBILE
MHz	156.5625-156.7625 FIXED MOBILE except aeronautical mobile (R) 5.226	156.5625-156.7625 FIXED MOBILE 5.226	
MHz	156.7625-156.7875 MARITIME MOBILE Mobile-satellite (Earth-to-space) 5.111 5.226 5.228	156.7625-156.7875 MARITIME MOBILE MOBILE-SATELLITE (Earth-to-space) 5.111 5.226 5.228	MARITIME MOBILE
MHz	156.7875-156.8215 MARITIME MOBILE (distress and calling) 5.111 5.226		MARITIME MOBILE
MHz	156.8125-156.8375	156.8125-156.8375	
	MARITIME MOBILE Mobile-satellite (Earth-to-space) 5.111 5.226 5.228	MARITIME MOBILE MOBILE-SATELLITE (Earth-to-space) 5.111 5.226 5.228	

MHz	156.8375-161.9375 FIXED MOBILE except aeronautical mobile 5.226	156.8375-161.9375 FIXED MOBILE 5.226	
MHz	161.9375-161.9625 FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226	161.9375-161.9625 FIXED MOBILE Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226	
MHz	161.9625-161.9875 FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B	161.9625-161.9875 AERONAUTICAL MOBILE (OR) MARITIME MOBILE MOBILE-SATELLITE (Earth-to-space) 5.228C 5.228D	
MHz	161.9875-162.0125 FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226 5.229	161.9875-162.0125 FIXED MOBILE Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226	
MHz	162.0125-162.0375 FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F	162.0125-162.0375 AERONAUTICAL MOBILE (OR) MARITIME MOBILE MOBILE-SATELLITE (Earth-to-space)	

	5.226 5.228A 5.228B 5.229	5.228C 5.228D	
MHz	162.0375-174 FIXED MOBILE except aeronautical mobile 5.226 5.229	162.0375-174 FIXED MOBILE 5.226 5.230 5.231	MOBILE
MHz	174-223 BROADCASTING 5.235 5.237 5.243	174-216 BROADCASTING Fixed Mobile	174-230 Radiolocation
MHz		216-220 FIXED MARITIME MOBILE Radiolocation 5.241 5.242	
MHz		220-225 AMATEUR	
MHz		223-230 BROADCASTING Fixed	
MHz		MOBILE Radiolocation 5.241	
MHz		225-235 FIXED	
MHz		230-235 FIXED MOBILE 5.247 5.251 5.252	
MHz	235-267 FIXED MOBILE 5.111.5.252 5.254 5.256 5.256A		235-328.6 FIXED MOBILE Radiolocation

MHz	267-272 FIXED MOBILE Space operation (space-to-Earth) 5.254 5.257	Mobile satellite
MHz	272-273 SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	
MHz	273-312 FIXED MOBILE 5.254	
MHz	312-315 FIXED MOBILE Mobile-satellite (Earth-to-space) 5.254 5.255	
MHz	315-322 FIXED MOBILE 5.254	
MHz	322-328.6 FIXED MOBILE RADIO ASTRONOMY 5.149	
MHz	328.6-335.4 AERONAUTICAL RADIONAVIGATION	

	5.259	
MHz	335.4-387 FIXED MOBILE 5.254	335.4-399.9 FIXED MOBILE Mobile satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255
MHz	387-390 FIXED MOBILE Mobile satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255	
MHz	390-399.9 FIXED MOBILE 5.254	
MHz	399.9-400.05 MOBILE-SATELLITE (Earth-to-space) 5.209 5.220	
MHz	400.05-400.15 STANDARD FREQUENCY AND TIME SIGNAL- SATELLITE (400.1 MHz) 5.261 5.262	
MHz	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) 5.262 5.264	400.15-401 MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209
MHz	401-402 METEOROLOGICAL AIDS	401-403 FIXED

	SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) MOBILE except aeronautical mobile
MHz	402-403 METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	
MHz	403-406 METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile 5.265	403-406 FIXED MOBILE except aeronautical mobile
MHz	406-406.1 MOBILE-SATELLITE (Earth-to-space) 5. 265 5.266 5.267	
MHz	406.1-410 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.265	406.1-410 FIXED MOBILE except aeronautical mobile Radiolocation
MHz	410-420 FIXED MOBILE except aeronautical mobile	410-420 FIXED MOBILE

	SPACE RESEARCH (space-to-space) 5.268		
MHz	420-430 FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271		420-430 FIXED MOBILE RADIOLOCATION
MHz	430-432 AMATEUR RADIOLOCATION 5.271 5.274 5.275 5.276 5.277	430-432 RADIOLOCATION Amateur 5.271 5.276 5.277 5.278 5.279	430-440 FIXED MOBILE RADIOLOCATION
MHz	432-438 AMATEUR RADIOLOCATION Earth exploration satellite (active) 5.279A 5.138 5.271 5.276 5.277 5.280 5.281 5.282	432-438 RADIOLOCATION Amateur Earth exploration satellite (active) 5.279A 5.271 5.276 5.278 5.279 5.281 5.282	
MHz	438-440 AMATEUR RADIOLOCATION 5.271 5.274 5.275 5.276 5.277 5.283	438-440 RADIOLOCATION Amateur 5.271 5.276 5.278 5.270	
MHz	440-450 FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271 5.284 5.285 5.286		440-450 FIXED MOBILE RADIOLOCATION
MHz	450-455 FIXED MOBILE 5.286A		

	5.209 5.271 5.286A 5.286B 5.286C 5.286D 5.286E		
MHz	455-456 FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E	455-456 FIXED MOBILE 5.286AA MOBILE-SATELLITE (Earth-to-space) 5.209 5.286A 5.286B 5.286C	
MHz	456-459 FIXED MOBILE 5.286AA 5.271 5.287 5.288		
MHz	459-460 FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E	459-460 FIXED MOBILE 5.286AA MOBILE-SATELLITE (Earth-to-space) 5.209 5.286A 5.286B 5.286C	
MHz	460-470 FIXED MOBILE Meteorological-Satellite (space-to-Earth) 5.287 5.288 5.289 5.290		FIXED
MHz	470-694 BROADCASTING 5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.311A 5.312	470-512 BROADCASTING Fixed Mobile 5.292 5.293 5.295	512-608
MHz		512-608	

MHz		BROADCASTING 5.295 5.297	BROADCASTING
		608-614 RADIO ASTRONOMY Mobile-satellite except aeronautical mobile- satellite (Earth-to-space)	
MHz		614-698 BROADCASTING	614-782 BROADCASTING
MHz	694-790 MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING	Fixed Mobile 5.293 5.308 5.308A 5.309 5.311A	
MHz	5.300 5.311A 5.312	698-806	
MHz	790-862 FIXED MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING	MOBILE 5.317A BROADCASTING Fixed 5.293 5.309 5.311A	790-862 MOBILE
MHz	5.312 5.319	806-890 FIXED	
MHz	862-890 FIXED	MOBILE 5.317A BROADCASTING	862-880 FIXED
MHz	MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING 5.322 5.319 5.323	5.317 5.318	880-915 MOBILE
MHz	890-942	890-902	

MHz	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 Radiolocation 5.323	FIXED MOBILE except aeronautical mobile 5.317A Radiolocation 5.318 5.325 902-928 FIXED Amateur Mobile except aeronautical mobile 5.325A Radiolocation 5.150 5.325 5.326	
		928-942 FIXED MOBILE except aeronautical mobile 5.317A Radiolocation 5.325	925-960 MOBILE
MHz	942-960 FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.332 5.323	942-960 FIXED MOBILE 5.317A	
MHz	960-1164 AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL RADIONAVIGATION 5.328 5.328AA		
MHz	1164-1215 AERONAUTICAL RADIONAVIGATION 5.328		1164-1215 AERONAUTICAL RADIONAVIGATION 5.328

	RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.328A		
MHz	1215-1240 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332		1215-1240 RADIOLOCATION
MHz	1240-1300 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328A 5.329 5.329A SPACE RESEARCH (active) Amateur 5.2825.330 5.331 5.332 5.335 5.335A		1240-1300 RADIOLOCATION
MHz	1300-1350 RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 RADIONAVIGATION SATELLITE (Earth-to-space) 5.149 5.337A		1300-1350 RADIOLOCATION
MHz	1350-1400 FIXED MOBILE RADIOLOCATION 5.149 5.338 5.338A 5.339	1350-1400 RADIOLOCATION 5.149 5.334 5.339	1350-1375 Radiolocation 1375-1400 FIXED MOBILE
MHz	1400-1427 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY		

	SPACE RESEARCH (passive) 5.340 5.341		
MHz	1427-1429 SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.341A 5.341B 5.341C 5.338A 5.341		1427-1429 SPACE OPERATION (Earth-to-space) FIXED MOBILE
MHz	1429-1452 FIXED MOBILE except aeronautical mobile 5.341A 5.338A 5.341 5.342	1429-1452 FIXED MOBILE 5.341A 5.341B 5.343 5.338A 5.341	1429-1452 FIXED MOBILE
MHz	1452-1492 FIXED MOBILE except aeronautical mobile 5.346 BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5.342 5.345	1452-1492 FIXED MOBILE 5.341B 5.343 5.346A BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5.344 5.345	
MHz	1492-1518 FIXED MOBILE except aeronautical mobile 5.341A 5.341 5.342	1492-1518 FIXED MOBILE 5.341B 5.343 5.341 5.344	
MHz	1518-1525 FIXED MOBILE except aeronautical mobile 5.341A MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A	1518-1525 FIXED MOBILE 5.343 MOBILE-SATELLITE (space-to-Earth) 5.348	

	5.348B 5.351A 5.341 5.342	5.348A 5.348B 5.351A 5.341 5.344	
MHz	1525-1530 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A Earth exploration-satellite Fixed Mobile except aeronautical mobile 5.341 5.342 5.350 5.351 5.352A 5.354	1525-1530 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A Earth exploration-satellite Fixed Mobile 5.343 5.341 5.351 5.354	
MHz	1530-1535 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A Earth exploration-satellite Fixed Mobile except aeronautical mobile 5.341 5.342 5.350 5.351 5.354	1530-1535 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A Earth exploration-satellite Fixed Mobile 5.343 5.341 5.351 5.354	
MHz	1535-1559 MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.341 5.351 5.353A 5.354 5.355 5.356 5.357 5.357A 5.359 5.362A		
MHz	1559-1610 AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.208B 5.328B 5.329A 5.341		
MHz	1610-1610.6	1610-1610.6	

	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.371 5.372	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION RADIODETERMINATION-SATELLITE (Earth-to-space) 5.341 5.364 5.366 5.367 5.368 5.370 5.372	
MHz	1610.6-1613.8 MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.371 5.372	1610.6-1613.8 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 5.370 5.372	1610.6-1613.8 MOBILE-SATELLITE (Earth-to-space) 5.351A
MHz	1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile satellite (space-to-Earth) 5.208B 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION RADIODETERMINATION-SATELLITE (Earth-to-space) Mobile satellite (space-to-Earth) 5.208B 5.341 5.364 5.365 5.366 5.367 5.368 5.370 5.372	1616-1626.5 MOBILE-SATELLITE
MHz	1626.5-1660 MOBILE-SATELLITE (Earth-to-space) 5.351A 5.341 5.351 5.353A 5.354 5.355 5.357A 5.359 5.362A 5.374 5.375 5.376		

MHz	1660-1660.5 MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.362A 5.376A	
MHz	1660.5-1668 RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A	
MHz	1668-1668.4 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 5.379 5.379A	
MHz	1688.4-1670 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	
MHz	1670-1675 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE	

	5.341 5.379D 5.379E 5.380A		
MHz	1675-1690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL- SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341		
MHz	1690-1700 METEOROLOGICAL AIDS METEOROLOGICAL- SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 5.289 5.341 5.382	1690-1700 METEOROLOGICAL AIDS METEOROLOGICAL- SATELLITE (space-to-Earth) 5.289 5.341 5.381	
MHz	1700-1710 FIXED METEOROLOGICAL- SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341		
MHz	1710-1930 FIXED MOBILE 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.386 5.387 5.388		MOBILE
MHz	1930-1970 FIXED MOBILE 5.388A 5.388B 5.388	1930-1970 FIXED MOBILE 5.388A 5.388B Mobile-satellite (Earth-to-space) 5.388	
MHz	1970-1980		

	FIXED MOBILE 5.388A 5.388B 5.388		
MHz	1980-2010 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B 5.389F		
MHz	2010-2025 FIXED MOBILE 5.388A 5.388B 5.388		FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.388 5.389C 5.389D 5.389E
MHz	2025-2110 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		2025-2110 MOBILE SPACE OPERATION (Earth-to-space) (space-to-space)
MHz	2110-2120 FIXED MOBILE 5.388A 5.388B SPACE RESEARCH (deep space) (Earth-to-space) 5.388		
MHz	2120-2160 FIXED MOBILE 5.388A 5.388B	2120-2160 FIXED MOBILE 5.388A 5.388B	

	5.388	Mobile-satellite (space-to-Earth) 5.388	
MHz	2160-2170 FIXED MOBILE 5.388A 5.388B 5.388	2160-2170 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.388 5.389C 5.389E	
MHz	2170-2200 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A 5.389F		
MHz	2200-2290 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		2200-2290 MOBILE
MHz	2290-2300 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)		
MHz	2300-2450 FIXED MOBILE 5.384A Amateur Radiolocation	2300-2450 FIXED MOBILE 5.384A RADIOLOCATION Amateur	
			2400-2500 ISM band according to RR No.

	5.150 5.282 5.395	5.150 5.282 5.393 5.394 5.396	5.150
MHz	2450-2483.5 FIXED MOBILE Radiolocation 5.150	2450-2483.5 FIXED MOBILE RADIOLOCATION 5.150	
MHz	2483.5-2500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIODETERMINATION-SATELLITE (space-to-Earth) 5.398 Radiolocation 5.398A 5.150 5.399 5.401 5.402	2483.5-2500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIOLOCATION RADIODETERMINATION-SATELLITE (space-to-Earth) 5.398 5.398 5.150 5.5.402	
MHz	2500-2520 FIXED 5.410 MOBILE except aeronautical mobile 5.384A 5.412	2500-2520 FIXED 5.410 FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A	2500-2570 FIXED
MHz	2520-2655 FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5413 5.416 5.339 5.412 5.418B 5.418C	2520-2655 FIXED 5.410 FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5413 5.416	

		5.339 5.418B 5.418C	
MHz	2655-2670 FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	2655-2670 FIXED 5.410 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149	
MHz	2670-2690 FIXED 5.410 MOBILE except aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	2670-2690 FIXED 5.410 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.208B 5.415 MOBILE except aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149	
MHz	2690-2700 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.422		

MHz	2700-2900 AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424		2700-2900 Radiolocation
MHz	2900-3100 RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427		2900-3100 RADIOLOCATION 5.424A
MHz	3100-3300 RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.149 5.428		3100-3300 RADIOLOCATION
MHz	3300-3400 RADIOLOCATION 5.149 5.429 5.429A 5.429B 5.430	3300-3400 RADIOLOCATION Amateur Fixed Mobile 5.149 5.429C 5.429D	3300-3400 RADIOLOCATION
MHz	3400-3600 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.403A Radiolocation 5.431	3400-3500 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.413A 5.413B Amateur Radiolocation 5.433 5.282	3400-3600 FIXED
MHz		3500-3600 FIXED	

		FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.431B Radiolocation 5.433	
MHz	3600-4200 FIXED FIXED-SATELLITE (space-to-Earth) Mobile	3600-3700 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.434 Radiolocation 5.433	
MHz		3700-4200 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile	
MHz	4200-4400 AERONAUTICAL MOBILE (R) 5.436 AERONAUTICAL RADIONAVIGATION 5.438 5.437 5.439 5.440		
MHz	4400-4500 FIXED MOBILE 5.440A	4400-4500 FIXED MOBILE 5.440A	
MHz	4500-4800 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE 5.440A	4500-4800 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE	
MHz	4800-4990 FIXED	4800-4990 FIXED	

	MOBILE 5.442 Radio astronomy 5.149 5.339 5.443	MOBILE 5.442
MHz	4990-5000 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) 5.149	4990-5000 FIXED MOBILE
MHz	5000-5010 AERONAUTICAL MOBILE-SATELLITE (R) 5.443A AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-space)	
MHz	5010-5030 AERONAUTICAL MOBILE-SATELLITE (R) 5.443A AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.443B	
MHz	5030-5091 AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION 5.444	
MHz	5091-5150 FIXED-SATELLITE (Earth-to-space) 5.444A AERONAUTICAL MOBILE (R) 5.443B AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION 5.444	5091-5150 AERONAUTICAL MOBILE (R) 5.443B

MHz	5150-5250 FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B AERONAUTICAL RADIONAVIGATION 5.446 5.446C 5.447 5.447B 5.447C	
MHz	5250-5255 EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH 5.447D 5.447E 5.448 5.448A	5250-5255 MOBILE except aeronautical mobile RADIOLOCATION
MHz	5255-5350 EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH (active) 5.447E 5.448 5.448A	5255-5350 RADIOLOCATION
MHz	5350-5460 EARTH EXPLORATION-SATELLITE (active) 5.448B RADIOLOCATION 5.448D AERONAUTICAL RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448C	5350-5460 AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D
MHz	5460-5470 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION 5.448D RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448B	5460-5470 RADIOLOCATION 5.448D RADIONAVIGATION 5.449

MHz	5470-5570 EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION MARITIME RADIONAVIGATION SPACE RESEARCH (active) 5.448B 5.450 5.451		5470-5570 MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION MARITIME RADIONAVIGATION
MHz	5570-5650 MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION 5.450 5.451 5.452		5570-5650 RADIOLOCATION
MHz	5650-5725 MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION Amateur Space research (deep space) 5.282 5.451 5.453 5.454 5.455		5650-5725 RADIOLOCATION
MHz	5725-5830 FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455	5725-5830 RADIOLOCATION Amateur 5.150 5.453 5.455	5725-5875 ISM band (RR FN 5.150) 5725-5850 RADIOLOCATION
MHz	5830-5850 FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-satellite (space-to-Earth)	5830-5850 RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.453 5.455	

	5.150 5.451 5.453 5.455		
MHz	5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.50	5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Amateur Radiolocation 5.150	5850-5925 FIXED
MHz	5925-6700 FIXED 5.457 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B MOBILE 5.457C 5.149 5.440 5.458		
MHz	6700-7075 FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE 5.458 5.458A 5.458B		
MHz	7075-7145 FIXED MOBILE 5.458 5.459		7125-7425 FIXED 7075-7145 FIXED
MHz	7145-7190 FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) 5.458 5.459		
MHz	7190-7235		

MHz	EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A 5.460B FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458 5.459 7235-7250 EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A FIXED MOBILE 5.458	
MHz	7250-7300 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 5.461	7250-7300 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth)
MHz	7300-7375 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461	7300-7375 FIXED-SATELLITE (space-to-Earth)
MHz	7375-7450 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	7425-7725 FIXED 7375-7450 FIXED-SATELLITE (space-to-Earth)
MHz	7450-7550 FIXED	7425-7725 FIXED

	<p>FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth)</p> <p>MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB 5.461A</p>	<p>7450-7550 FIXED-SATELLITE (space-to-Earth)</p>
MHz	<p>7550-7750</p> <p>FIXED FIXED-SATELLITE (space-to-Earth)</p> <p>MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB</p>	<p>7425-7725 FIXED</p> <p>7550-7750 FIXED-SATELLITE (space-to-Earth)</p>
MHz	<p>7750-7900</p> <p>FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile</p>	
MHz	<p>7900-8025</p> <p>FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.461</p>	<p>7900-7975 FIXED LAND MOBILE</p> <p>7900-8025 FIXED-SATELLITE (Earth-to-space) MOBILE SATELLITE (Earth-to-space)</p>
MHz	<p>8025-8175</p> <p>EARTH EXPLORATION-SATELLITE (space-to-Earth)</p> <p>FIXED FIXED-SATELLITE (Earth-to-space)</p> <p>MOBILE 5.463 5.462A</p>	<p>8025-8175 FIXED FIXED-SATELLITE (Earth-to-space)</p> <p>MOBILE 5.463 MOBILE SATELLITE (Earth-to-space)</p>

MHz	8175-8215 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	8175-8215 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 MOBILE SATELLITE (Earth-to-space)
MHz	8215-8400 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	8215-8400 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 MOBILE SATELLITE (Earth-to-space)
MHz	8400-8500 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.465 5.466	8400-8500 FIXED
MHz	8500-8550 RADIOLOCATION 5.468 5.469	8500-8550 RADIOLOCATION
MHz	8550-8650 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469 5.469A	8550-8650 RADIOLOCATION
MHz	8650-8750 RADIOLOCATION	8650-8750 RADIOLOCATION

	5.468 5.469	
MHz	8750-8850 RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 5.471	8750-8850 RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470
MHz	8850-9000 RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473	8850-9000 RADIOLOCATION MARITIME RADIONAVIGATION 5.472
MHz	9000-9200 RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 5.471 5.473A	9000-9200 RADIOLOCATION
MHz	9200-9300 EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474 5.474D	9200-9300 RADIOLOCATION
MHz	9300-9500 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.427 5.474 5.475 5.475A 5.475B 5.476A	9300-9500 RADIOLOCATION
MHz	9500-9800 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION	9500-9800 RADIOLOCATION

	SPACE RESEARCH (active) 5.476A		
MHz	9800-9900 RADIOLOCATION Earth exploration-satellite (active) Fixed Space research (active) 5.477 5.478 5.478A 5.478B		9800-9900 RADIOLOCATION
MHz	9900-10000 EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Fixed 5.474D 5.477 5.478 5.470		9900-10000 RADIOLOCATION
GHz	10-10.4 EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.474D 5.479	10-10.4 EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Amateur 5.474D 5.479 5.480	10-10.4 FIXED MOBILE RADIOLOCATION
GHz	10.4-10.45 FIXED MOBILE RADIOLOCATION Amateur	RADIOLOCATION Amateur 5.480	10.4-10.45 FIXED MOBILE RADIOLOCATION
GHz	10.45-10.5 RADIOLOCATION Amateur		10.45-10.475 MOBILE RADIOLOCATION

	Amateur- satellite 5.481		10.475-10.5 Radiolocation
GHz	10.5-10.55 FIXED MOBILE Radiolocation	10.5-10.55 FIXED MOBILE RADIOLOCATION	10.5-10.55 Radiolocation
GHz	10.55-10.6 FIXED MOBILE except aeronautical mobile Radiolocation		10.55-10.6 Radiolocation
GHz	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		
GHz	10.68-10.7 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.483		
GHz	10.7-10.95 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	10.7-10.95 FIXED FIXED-SATELLITE (space-to- Earth) 5.441 MOBILE except aeronautical mobile	10.7-10.95 FIXED
GHz	10.95-11.2	10.95-11.2	

	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to- Earth) 5.484A 5.484B MOBILE except aeronautical mobile	
GHz	11.2-11.45 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	11.2-11.45 FIXED FIXED-SATELLITE (space-to- Earth) 5.441 MOBILE except aeronautical mobile	
GHz	11.45-11.7 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	11.45-11.7 FIXED FIXED-SATELLITE (space-to- Earth) 5.484A 5.484B MOBILE except aeronautical mobile	11.45-11.7 MOBILE except aeronautical mobile
GHz	11.7-12.5 FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492 5.487 5.487A	11.7-12.1 FIXED 5.486 FIXED-SATELLITE (space-to- Earth) 5.484A 5.484B 5.488 Mobile except aeronautical mobile 5.485 12.1-12.2 FIXED-SATELLITE (space-to- Earth) 5.484A 5.484B 5.488 5.485 5.489 12.2-12.7 FIXED MOBILE except aeronautical	11.7-12.5 Mobile except aeronautical mobile

GHz	12.5-12.75 FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.494 5.495 5.496	mobile BROADCASTING BROADCASTING-SATELLITE 5.492 5.487A 5.488 5.490	12.5-12.75 Radiolocation
		12.7-12.75 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE except aeronautical mobile	
GHz	12.75-13.25 FIXED FIXED-SATELLITE (Earth-to-space) 5.441 MOBILE Space research (deep space) (space-to-Earth)		12.75-13.25 Radiolocation
GHz	13.25-13.4 EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A 5.499		
GHz	13.4-13.65 EARTH EXPLORATION-SATELLITE (active) FIXED-SATELLITE (space-to-Earth) 5.449A 5.449B RADIOLOCATION SPACE RESEARCH 5.449C 5.449D	13.4-13.65 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.449C 5.449D Standard frequency and time signal-satellite (Earth-to-space)	13.4-13.65 RADIOLOCATION

	Standard frequency and time signal-satellite (Earth-to-space) 5.499 5.449E 5.500 5.501 5.501B	5.499 5.500 5.501 5.501B	
GHz	13.65-13.75 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A Standard frequency and time signal-satellite (Earth-to-space) 5.499 5.500 5.501 5.501B		13.65-13.75 RADIOLOCATION
GHz	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 5.499 5.500 5.501 5.502 5.503		13.75-14 RADIOLOCATION
GHz	14-14.25 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.504C 5.506A Space research 5.504A 5.505		
GHz	14.25-14.3 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.508A Space research 5.504A 5.505 5.508		
GHz	14.3-14.4	14.3-14.4	

	<p>FIXED</p> <p>FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B</p> <p>FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B</p> <p>Mobile-satellite (Earth-to-space) 5.506A</p> <p>MOBILE except aeronautical mobile</p> <p>Radionavigation-satellite 5.504A</p> <p>Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A</p> <p>Radionavigation-satellite 5.504A</p>	
GHz	<p>14.4-14.47</p> <p>FIXED</p> <p>FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B</p> <p>MOBILE except aeronautical mobile</p> <p>Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A</p> <p>Space research (space-to-Earth) 5.504A</p>	
GHz	<p>14.47-14.5</p> <p>FIXED</p> <p>FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B</p> <p>MOBILE except aeronautical mobile</p> <p>Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A</p> <p>Radio astronomy 5.149 5.504A</p>	
GHz	<p>14.5-14.75</p> <p>FIXED</p> <p>FIXED-SATELLITE (Earth-to-space) 5.509B 5.509C 5.509D 5.509E 5.509F 5.510</p>	<p>14.5-14.75</p> <p>FIXED</p> <p>MOBILE</p>

	MOBILE Space research 5.509G	
GHz	14.75-14.8 FIXED FIXED-SATELLITE (Earth-to-space) 5.510 MOBILE Space research 5.509G	14.75-14.8 FIXED MOBILE FIXED-SATELLITE (Earth-to-space) 5.510
GHz	14.8-15.35 FIXED MOBILE Space research 5.339	14.8-15.23 FIXED MOBILE
GHz	15.35-15.4 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.511	
GHz	15.4-15.43 RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	
GHz	15.43-15.63 FIXED-SATELLITE (Earth-to-space) 5.511A RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511C	
GHz	15.63-15.7 RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	
GHz	15.7-16.6	15.7-16.6

	RADIOLOCATION 5.512 5.513		RADIOLOCATION
GHz	16.6-17.1 RADIOLOCATION Space research (deep space) (Earth-to-space) 5.512 5.513		16.6-17.1 RADIOLOCATION
GHz	17.1-17.2 RADIOLOCATION 5.512 5.513		17.1-17.2 RADIOLOCATION
GHz	17.2-17.3 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.512 5.513 5.513A		17.2-17.3 MOBILE RADIOLOCATION
GHz	17.3-17.7 FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A 5.516B Radiolocation 5.514	17.3-17.7 FIXED-SATELLITE (Earth-to-space) 5.516 BROADCASTING-SATELLITE Radiolocation 5.514 5.515	17.3-17.7 Radiolocation
GHz	17.7-18.1 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A Earth-to-space) 5.516 MOBILE	17.7-17.8 FIXED FIXED-SATELLITE (space-to-Earth) 5.517 (Earth-to-space) 5.516 BROADCASTING-SATELLITE Mobile 5.515	
		17.8-18.1 FIXED	

		FIXED-SATELLITE (space-to-Earth) 5.484A Earth-to-space) 5.516 5.519	
GHz	18.1-18.4 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B (Earth-to-space) 5.520 MOBILE 5.519 5.521		
GHz	18.4-18.6 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B MOBILE		
GHz	18.6-18.8 EARTH EXPLORATION- SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.522B MOBILE except aeronautical mobile Space research (passive) 5.522A 5.522C	18.6-18.8 EARTH EXPLORATION- SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.522B MOBILE except aeronautical mobile SPACE RESEARCH (passive) 5.522A	
GHz	18.8-19.3 FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.523A MOBILE	18.8-19.3 FIXED	
GHz	19.3-19.7 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.523B 5.523C		

	5.523D 5.523E MOBILE		
GHz	19.7-20.1 FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A Mobile-satellite (space-to-Earth) 5.524	19.7-20.1 FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528 5.529	
GHz	20.1-20.2 FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528		
GHz	20.2-21.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) 5.524		20.2-21.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth)
GHz	21.2-21.4 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)		
GHz	21.4-22 FIXED MOBILE BROADCASTING-SATELLITE 5.208B 5.530A 5.530B 5.530D	21.4-22 FIXED MOBILE 5.5530A	

GHz	22-22.21 FIXED MOBILE except aeronautical mobile 5.149	
GHz	22.21-22.5 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.532	
GHz GHz	22.5-22.55 FIXED MOBILE 22.55-23.15 FIXED INTER-SATELLITE 5.338A MOBILE SPACE RESEARCH (Earth-to-space) 5.532A 5.149	
GHz	23.15-23.55 FIXED INTER-SATELLITE 5.338A MOBILE	
GHz	23.55-23.6 FIXED MOBILE	
GHz	23.6-24 EARTH EXPLORATION-SATELLITE (passive)	

	RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340		
GHz	24-24.05 AMATEUR AMATEUR-SATELLITE 5.150		
GHz	24.05-24.25 RADIOLOCATION Amateur Earth exploration-satellite (active) 5.150		24.05-24.25 ISM band
GHz	24.25-24.45 FIXED	24.25-24.45 RADIONAVIGATION	24.25-24.45 FIXED
GHz	24.45-24.65 FIXED INTER-SATELLITE	24.45-24.65 INTER-SATELLITE RADIONAVIGATION 5.533	24.45-24.65 FIXED
GHz	24.65-24.75 FIXED FIXED-SATELLITE (Earth-to-space) 5.532B INTER-SATELLITE	24.65-24.75 INTER-SATELLITE RADIOLOCATION- SATELLITE (Earth-to-space)	
GHz	24.75-25.25 FIXED FIXED-SATELLITE (Earth-to-space) 5.532B	24.75-25.25 FIXED-SATELLITE (Earth-to-space) 5.535	
GHz	25.25-25.5 FIXED		25.25-25.5 INTER-SATELLITE 5.536

	INTER-SATELLITE 5.536 MOBILE Standard frequency and time signal-satellite (Earth-to-space)		
GHz	25.5-27 EARTH EXPLORATION-SATELLITE (space-to Earth) 5.536B FIXED INTER-SATELLITE 5.536 MOBILE Standard frequency and time signal-satellite (Earth-to-space) 5.536A		25.5-27 INTER-SATELLITE 5.536 26.5-27 FIXED MOBILE
GHz	27-27.5 FIXED INTER-SATELLITE 5.536 MOBILE	27-27.5 FIXED FIXED-SATELLITE (Earth-to-space) INTER-SATELLITE 5.536 5.537 MOBILE	27-27.5 FIXED INTER-SATELLITE 5.536 MOBILE
GHz	27.5-28.5 FIXED 5.537A FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 MOBILE 5.538 5.540		
GHz	28.5-29.1 FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.523A 5.539 MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540		
GHz	29.1-29.5 FIXED		

	FIXED-SATELLITE (Earth-to-space) 5.516B 5.523C 5.523E 5.535A 5.539 5.541A MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540		
GHz	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	29.5-29.9 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 5.525 5.526 5.527 5.529 5.540	
GHz	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		
GHz	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	30-31 FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE-SATELLITE (Earth-to-space)	
GHz	31-31.3 FIXED MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research 5.544 5.545		

	5.149	
GHz	31.3-31.5 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
GHz	<div> 31.5-31.8 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical 5.149 5.546 </div> <div> 31.5-31.8 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 </div>	
GHz	31.8-32 FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547B 5.548	
GHz	32-32.3 FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547C 5.548	32-32.3 FIXED 5.547A
GHz	32.3-33 FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.547D 5.548	
GHz	33-33.4	

	FIXED 5.547A RADIONAVIGATION 5.547 5.547E	
GHz	33.4-34.2 RADIOLOCATION 5.549	33.4-34.2 RADIOLOCATION
GHz	34.2-34.7 RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) 5.549	34.2-34.7 RADIOLOCATION
GHz	34.7-35.2 RADIOLOCATION Space research 5.550 5.549	34.7-35.2 RADIOLOCATION
GHz	35.2-35.5 METEOROLOGICAL AIDS RADIOLOCATION 5.549	35.2-35.5 RADIOLOCATION
GHz	35.5-36 METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549 5.549A	35.5-36 RADIOLOCATION
GHz	36-37 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	36-37 MOBILE SPACE RESEARCH (passive)

	5.149 5.550A	
GHz	37-37.5 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.547	
GHz	37.5-38 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	
GHz	38-39.5 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Earth exploration-satellite (space-to-Earth) 5.547	
GHz	39.5-40 FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	39.5-40 FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth)
GHz	40-40.5 EARTH EXPLORATION-SATELLITE (Earth-to-space)	40-40.5 FIXED

	<p>FIXED</p> <p>FIXED-SATELLITE (space-to-Earth) 5.516B</p> <p>MOBILE</p> <p>MOBILE-SATELLITE (space-to-Earth)</p> <p>SPACE RESEARCH (Earth-to-space)</p> <p>Earth exploration-satellite (space-to-Earth)</p>	<p>FIXED-SATELLITE (space-to-Earth) 5.516B</p> <p>MOBILE</p> <p>MOBILE-SATELLITE (space-to-Earth)</p>
GHz	<p>40.5-41</p> <p>FIXED</p> <p>FIXED-SATELLITE (space-to-Earth)</p> <p>BROADCASTING</p> <p>BROADCASTING-SATELLITE</p> <p>Mobile</p> <p>5.547</p>	<p>40.5-41</p> <p>FIXED</p> <p>FIXED-SATELLITE (space-to-Earth) 5.516B</p> <p>BROADCASTING</p> <p>BROADCASTING-SATELLITE</p> <p>Mobile</p> <p>Mobile-satellite (space-to-Earth)</p> <p>5.547</p>
GHz	<p>41-42.5</p> <p>FIXED</p> <p>FIXED-SATELLITE (space-to-Earth) 5.516B</p> <p>BROADCASTING</p> <p>BROADCASTING-SATELLITE</p> <p>Mobile</p> <p>5.547 5.551F 5.551H 5.551I</p>	
GHz	<p>42.5-43.5</p> <p>FIXED</p> <p>FIXED-SATELLITE (Earth-to-space) 5.552</p> <p>MOBILE except aeronautical mobile</p> <p>RADIO ASTRONOMY</p> <p>5.149 5.547</p>	

GHz	43.5-47 MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554		43.5-45.5 MOBILE 5.553 MOBILE-SATELLITE
GHz	47-47.2 AMATEUR AMATEUR-SATELLITE		
GHz	47.2-47.5 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.552A		
GHz	47.5-47.9 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B 5.554A MOBILE 5.552A	47.5-47.9 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE	
GHz	47.9-48.2 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.552A		
GHz	48.2-48.54 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B 5.554A 5.555B	48.2-50.2 FIXED FIXED-SATELLITE (Earth-to-space) 5.516B 5.338A 5.552	

GHz	MOBILE	MOBILE	
	48.54-49.44 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.149 5.340 5.555	5.149 5.340 5.555	
GHz	49.44-50.2 FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE		
GHz	50.2-50.4 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340		
GHz	50.4-51.4 FIXED FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE Mobile-satellite (Earth-to-space)	50.4-51.4 FIXED FIXED-SATELLITE (Earth-to-space) 5.338A Mobile-satellite (Earth-to-space)	
GHz	51.4-52.6 FIXED 5.338A MOBILE 5.547 5.556		
GHz	52.6-54.25 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive)		

	5.340 5.556	
GHz	54.25-55.78 EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive) 5.556B	
GHz	55.78-56.9 EARTH EXPLORATION-SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	
GHz	56.9-57 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	
GHz	57-58.2 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	
GHz	58.2-59 EARTH EXPLORATION-SATELLITE (passive)	

	FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	
GHz	59-59.3 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	59-59.3 RADIOLOCATION 5.559
GHz	59.3-64 FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	
GHz	64-65 FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	
GHz	65-66 EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH (passive) 5.547	

GHz	66-71 INTER-SATELLITE MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	
GHz	71-74 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	71-74 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth)
GHz	74-76 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.561	
GHz	76-77.5 RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	
GHz	77.5-78	

	AMATEUR AMATEUR-SATELLITE RADIOLOCATION Radio astronomy Space research (space-to-Earth) 5.149	
GHz	78-79 RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) 5.149 5.560	78-79 RADIOLOCATION
GHz	79-81 RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	79-81 RADIOLOCATION
GHz	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	81-84 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space)

GHz	84-86 FIXED 5.338A FIXED-SATELLITE (Earth-to-space) 5.561B MOBILE RADIO ASTRONOMY 5.149	
GHz	86-92 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
GHz	92-94 FIXED 5.338A MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	92-94 RADIOLOCATION
GHz	94-94.1 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	94-94.1 RADIOLOCATION
GHz	94.1-95 FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	94.1-95 RADIOLOCATION

GHz	95-100 FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	
GHz	100-102 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	
GHz	102-105 FIXED MOBILE RADIO ASTRONOMY 5.149 5.341	
GHz	105-109.5 FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	
GHz	109.5-111.8 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	

GHz	111.8-114.25 FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	
GHz	114.25-116 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	
GHz	116-119.98 EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341	
GHz	119.98-122.25 EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.138 5.341	
GHz	122.25-123 FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138	
GHz	123-130 FIXED-SATELLITE (space-to-Earth)	

	MOBILE-SATELLITE (space-to-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio astronomy 5.562D 5.149 5.554	
GHz	130-134 EARTH EXPLORATION-SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.149 5.562A	
GHz	134-136 AMATEUR AMATEUR-SATELLITE Radio astronomy	
GHz	136-141 RADIO ASTRONOMY RADIO ASTRONOMY Amateur Amateur-satellite 5.149	
GHz	141-148.5 FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	
GHz	148.5-151.5	

	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
GHz	151.5-155.5 FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	
GHz	155.5-158.5 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.562F 5.562G	
GHz	158.5-164 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	
GHz	164-167 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
GHz	167-174.5 FIXED	

	FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE 5.558 5.149 5.562D	
GHz	174.5-174.8 FIXED INTER-SATELLITE MOBILE 5.558	
GHz	174.8-182 EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	
GHz	182-185 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
GHz	185-190 EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	
GHz	190-191.8 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	
GHz	191.8-200 FIXED INTER-SATELLITE MOBILE 5.558	

	MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.341 5.554	