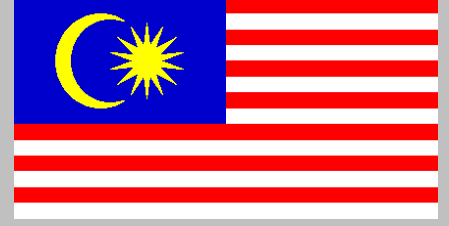
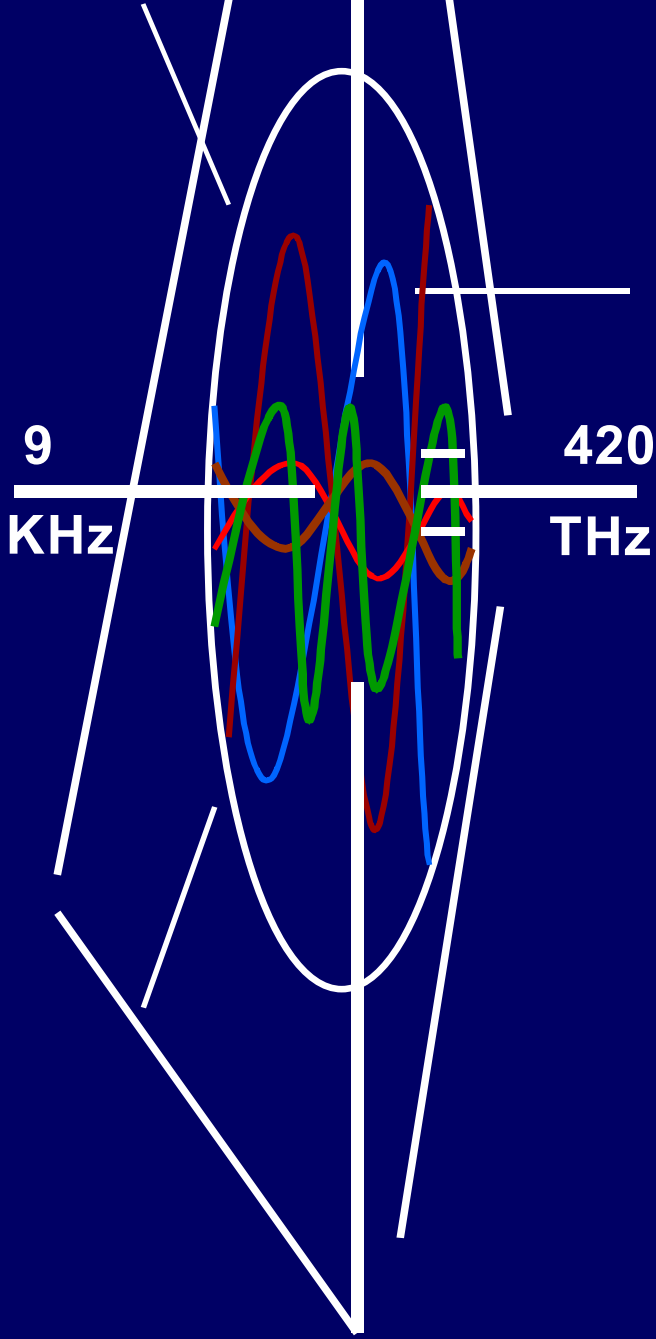


SPECTRUM PLAN



SURUHANJAYA KOMUNIKASI DAN MULTIMEDIA MALAYSIA
(MALAYSIAN COMMUNICATIONS & MULTIMEDIA COMMISSION)

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JANUARY 2002

1st EDITION

INTRODUCTION

The Malaysian Government recognizes the pervasive role of telephony and information technology in the economic and social development of the country. Consequently, communications and multimedia have been positioned as strategic industries for overall development.

To facilitate the above, previously separate administrative Ministries and regulatory bodies have been converged into a new regulatory framework under the purview of the Ministry of Energy, Communications and Multimedia. The rationale behind this convergence was to encourage a more efficient and effective manner of regulating the rapidly evolving environment of the information or knowledge age.

In Malaysia, the Communications and Multimedia Act (CMA) 1998 (“Act”) is the main legislation that regulates the converging communications and multimedia industries. The Act also sets out the national policy objectives for the development of the said industries. These are as follows:

- To establish Malaysia as a global hub
- To promote a civil / society that is information-based;
- To nurture local content and culture;
- To regulate for long-term benefit of the end user;
- To promote consumer confidence in the new sector;
- To ensure equitable provision of affordable services;
- To create a robust applications environment;
- To facilitate the efficient allocation of resources;
- To develop sector capabilities; and
- To provide secure and safe networking.

From a regulatory perspective, the Malaysian Communications and Multimedia Commission (“Commission”) is the body that regulates the communications and multimedia industries in Malaysia. The powers, which have been given to the Commission to enable it to carry out its task, are set out in the Act as well as in the Malaysian Communications and Multimedia Commission Act 1998, the legislation that provided for its formation.

The Commission has the overall responsibility for managing radio frequency spectrum under the Act. Part of this responsibility includes the task of developing a spectrum plan in respect to all or any part of the spectrum. Further details of the processes involved in developing a spectrum plan may be found in the Communications and Multimedia (Spectrum) Regulations 2000 issued under the Act.

In line with the powers accorded to it, the Commission is pleased to present herein the first edition of the Spectrum Plan, developed in full compliance to the provisions of the CMA 1998.

This plan will provide a guide on how the spectrum is currently used in Malaysia and how we plan to develop it further in the near future. The technological convergence of telecommunications, broadcasting and information technology has meant that management of the spectrum has become an even more complex issue. The challenge before us is to manage this finite resource in the best manner possible and to ensure that it is utilised efficiently to fulfil society's needs and the demands of technology.

Copies of the Spectrum Plan and any amendments thereto will be made available at the Commission's office and at the Commission's website. The Commission may be contacted at the address below:

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Facsimile: +603-2694 0908
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CITATION AND COMMENCEMENT

In accordance with the Communications and Multimedia Act (CMA) 1998, the Malaysian Communications and Multimedia Commission have developed this Spectrum Plan.

Section 172 (1) states that *The Commission may develop a spectrum plan in respect to any part or the entire spectrum.*

Citation

This Malaysian Spectrum Plan may be cited as the Spectrum Plan.

Commencement

This Spectrum Plan commences on the 1st January 2002.

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The background is a solid teal color. On the left side, there are several white concentric circles of varying radii, partially cut off by the edge. On the right side, there is a single vertical white line. In the bottom right corner, there are more white concentric circles, also partially cut off.

CHAPTER 1

General Information

Malaysian Spectrum Plan
Malaysian Spectrum Plan

PART A – GENERAL

1.1 Background

The Spectrum Plan divides the spectrum in Malaysia into a number of frequency bands and specifies the general purposes for which the bands may be used. This process is referred to as the allocation of frequency bands to radio communication services.

This chapter of the document provides general information on the development and application of the Spectrum Plan, and is provided for informative purposes only.

The International Telecommunications Union ("ITU"), a United Nations organisation, is responsible for regulating the international use of the radio spectrum. The ITU Radio Regulations, for example, contain the international frequency allocation table ("ITU Allocation Table"). This table is important in that it forms the global framework for regional and national spectrum planning.

One of the key features of the ITU Allocation Table is that it sets out the frequency bands that have been allocated to services and divides the world into three distinctive regions. The chart below illustrates the aforesaid division whilst the write-up beneath it lists out the countries that make up the relevant regions. Malaysia falls within the parameter of Region 3 in the ITU Allocation Table.

Malaysia is a signatory to the Constitution and Convention of the ITU. The ITU Radio Regulations mentioned above are revised at the ITU World Radiocommunications Conferences, which are held every two years. The structure of Malaysia's Spectrum Plan is based on the ITU Allocation Table contained in the ITU Radio Regulations. For easy reference, the ITU Allocation Table has been reproduced in the Spectrum Plan together with the relevant accompanying notes.

The Malaysian allocations are listed in that part of the Spectrum Plan that sets out the Malaysian Table of Frequency Allocations ("Malaysian Table"). Accompanying footnotes have been included, where necessary, to assist in the understanding of matters which are relevant to Region 3.

From the Malaysian Table, it is apparent that the table allocates the electromagnetic spectrum between 9 kHz and 420 THz. It should be noted that although the Malaysian Table is generally aligned with the ITU requirements for Region 3, some differences do exist. This is because, where necessary, variations have been incorporated to reflect Malaysian domestic requirements. However, any variation undertaken is subject to the conditions contained in the ITU Radio Regulations that the associated radio installations do not cause harmful interference to the radio services or communications of other ITU members that operate in accordance with the provisions of the Radio Regulations.

The Malaysian variations may also be subject to any constraints imposed by Malaysian footnotes in Part D, Chapter 2 of this document.

To a large extent, the Spectrum Plan follows closely the definitions reflected in Article 1 of the ITU Radio Regulations. This was done mainly for purposes of consistency. Having said this, there are again some variations that are inserted to reflect matters that are particular to our local environment.

At this stage, we wish to point out that information contained in the Malaysian Table and in the accompanying information or footnotes may be revised from time to time. Such revisions, more often than not, would be due to changes in the ITU Allocation Table resulting from either a WRC or a Regional Administrative Radio Conference (RARC). In such circumstances, it is likely that the Spectrum Plan will be revised in order to incorporate these revisions. The ITU resolutions relevant to Malaysia are attached in the appendix of this document.

The ITU has specific definitions for terms and services used in its Radio Regulations. These may be found in Article 1 of the ITU Regulations. In most instances the corresponding definitions contained in the Spectrum Plan reflect the intent of the ITU definitions, although in some cases they have been re-structured to align with Malaysian requirements.

PART B - GEOGRAPHIC REGIONS

1.2 Explanation of the Regional Chart

The chart below divides the world into three regions. These are as follows:

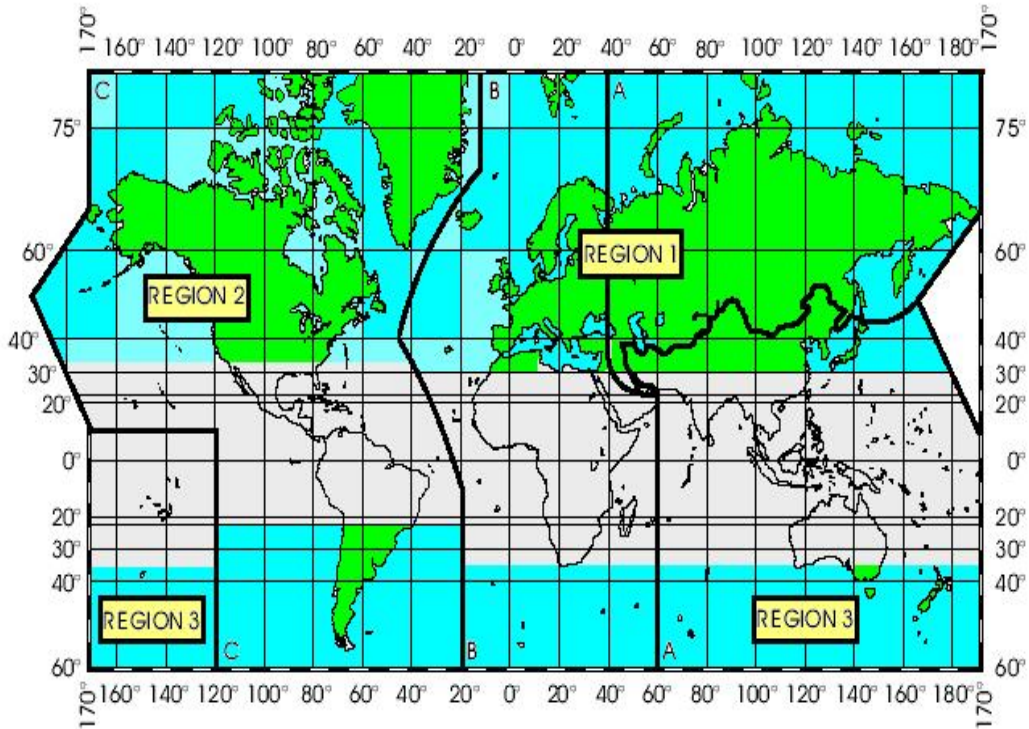


Figure 1: Map identifying Region 1, Region 2, and Region 3, as defined in paragraph 2.104(b), and the Tropical Zone (shaded area), as defined in paragraph 2.104(c)(4).

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

- Region 2 includes the area limited on the east by line B and on the west by line C; and
- Region 3 includes the area limited on the east by line C and on the west by line A, except any of the territory of Armenia, Azerbaijan, Georgia, Kazakhstan, Mongolia, Uzbekistan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, Turkey and Ukraine and the area to the north of Russian Federation. It also includes that part of the territory of the Islamic Republic of Iran lying outside of those limits.

A more complete description of where the abovementioned lines A, B and C would appear on a map can be obtained by referring to Nos. 5.6 to 5.9 of the ITU Radio Regulations.

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

The Tropical zone, as defined in Nos. 5.16 to 5.21 of the ITU Radio Regulations, is represented by the shaded part of the chart, and consists of:

- The whole of that area in Region 2 between the Tropics of Cancer and Capricorn; and
- The whole of that area in Region 1 and 3 contained between the parallel 30° north and 35° south with the addition of:
 - i. The area contained between the meridians 40° east and 80° east of Greenwich and the parallels 30° north and 40° north; and
 - ii. That part of Libya north of parallel 30° north

In Region 2, the Tropical Zone may be extended to parallel 33° north, subject to special agreements between the countries concerned in that Region.

PART C - THE TABLE OF FREQUENCY ALLOCATIONS

1.3 Identifying Frequency Bands

In interpreting the Malaysian Table, which is set out in Chapter 2 of the Spectrum Plan, the following should be noted:

- The Table covers the radio frequency spectrum from 3 kHz to 420 THz, which has been divided into frequency bands within which certain designated radiocommunication services may operate.
- Frequency bands are shown in increasing frequency order from 3 kHz to 420 THz.
- The first Table (on the left hand side of the page) indicates a set of frequency bands that reflects the provisions of the ITU Radio Regulations in respect to allocation of frequency bands to radiocommunication services worldwide. These have been reproduced for information only.
- The adjacent Table that sets out those same frequency bands, on the other hand, describes the Malaysian allocation of frequency bands to radiocommunication services.

1.4 Primary and Secondary Services

Where the Table indicates that a band is allocated to more than one service, either on a worldwide or regional basis, such services are listed in the following order:

- a) Services printed in upper case letters only (example: FIXED) are referred to as “primary” services.
- b) Services printed in normal characters or lower case letters (save and except for the first letter which will be capitalized) (example: Mobile) are referred as “secondary” services.

Please note that some bands may have more than one primary service, as well as one or more secondary services. The words ‘primary’ and ‘secondary’ used in Malaysian Table are for purposes of clarity and will not be reflected in any assignments issued by the Commission.

It must be noted that the operation of primary services are prioritised. Operators of secondary services must ensure that no harmful interference is caused to any of the primary services. Furthermore, operators of secondary services cannot claim harmful interference from any of the primary services to which frequencies have been assigned or may be assigned to at a later date. Operators of secondary services may, however, claim protection from harmful interference caused by other secondary services (see Chapter 2 Ref 2.8)

1.5 Additional Allocations

Where a band is shown in a footnote of the Table as “also allocated” to one or more services in an area or country within a Region (e.g. Malaysia), this is in addition to the allocation within the region said shown in the Table.

If the footnote does not include any restriction on the services concerned (for example, allocation only on a secondary service basis), apart from the restriction to operate only in a particular area or country, stations of those services have equal status with stations of other primary services to which the band is allocated in the Table, but only within that area or country.

1.6 Alternative Allocations

Where a band is shown in a footnote of the Table as “allocated” to one or more services in an area or country within a Region (e.g. Malaysia), this is an alternative allocation that replaces, in that area or country, the allocation shown in the Table.

If the footnote does not include any restriction on the services concerned (for example, allocation only on a secondary service basis), apart from the restriction to operate only in a particular area or country, stations of those services have equal status with stations of other primary services to which the band is allocated in the Table, but only within that area or country.

1.7 Headings and Footnotes

The heading of the international portion of this Table includes three columns, each of which corresponds to one of the ITU Regions. Where an allocation occupies the entire width of the ITU Table or of only one or two of the three columns, this indicates a worldwide allocation or a Regional allocation, respectively.

The frequency band referred to in each allocation is indicated in the left-hand top corner of the part of the Table concerned.

The footnote references, which appear in the Table below the allocated service or services, apply to the band, which may have multiple services.

The footnote references, which appear to the right of the name of a service, are applicable only to that particular service, which may operate in multiple bands.

1.8 Spectrum Management in Malaysia

The Spectrum Plan defines the allocation of frequency bands to the various types of services. It is therefore the first document that must be referred to in the planning and implementation of radio services in Malaysia. However, other documents may be prepared by the Commission to broaden the conditions by which these services are deployed in order to promote efficient spectrum management in the Malaysian radio environment. All other documentation will be subordinate to the Spectrum plan and will adhere to the information detailed therein. The Commission may from time to time issue the following documents: -

1.8.1 Standard Radio System Plans (SRSP)

As part of the above-mentioned provisions, Standard Radio System Plans (SRSP) may be prepared by the Commission to provide information on the minimum technical requirements for the efficient use of allocated frequency bands. The main use of SRSP's is in the design and specification of radio systems and equipment and in the evaluation of technical applications for new radio facilities or modification to radio systems.

The structure and extent of SRSPs will differ according to the type of radio systems across different frequency bands. In general, the SRSPs will provide information on the equipment characteristics and minimum specifications, frequency channelling and coordination initiatives required in order to ensure efficient and interference free deployment of radio systems.

New and existing users must comply with the relevant SRSP in order to receive proper licensing (as defined under CMA 98 licensing framework), and frequency assignment (either Spectrum Assignment or Apparatus Assignment).

1.8.2 Radio Performance Specification (RPS)

All radio apparatus must ensure full compliance to the relevant RPS. The RPS will set out the minimum specifications for the operation of such apparatus.

1.8.3 Conversion Plan

The Commission may deem it necessary to convert apparatus assignments to spectrum assignments in order to further promote efficient use of the national spectrum. The apparatus assignments considered as suitable for conversion to spectrum assignments will be detailed out in a Conversion plan that will be prepared by the Commission. This plan will include a timetable and procedures to be followed for the conversion process. (Please refer to Chapter 4 for Marketing Plan).

1.8.4 Marketing Plan

As stated in the Act and accompanying regulation, after the determination (under 176 of the CMA 1998) that spectrum is to be reallocated for a spectrum assignment, the Commission will prepare a marketing plan. The marketing plan will set out the methods, procedures and timetable to be followed for issuing the spectrum assignment. It will define the frequency bands involved and the conditions that will be applicable to the spectrum assignment.

1.9 Categories of Assignments

The CMA 1998 provides for three types of assignment that confer the rights to use the spectrum. These are: -

- Spectrum assignment;
- Apparatus assignment; and
- Class assignment.

1.9.1 Spectrum Assignment

A spectrum assignment confers the assignee the right to use one or more specified frequency bands for any purpose consistent with the assignment conditions. This effectively allows the holder to use the assigned spectrum without specific technology requirements other than those that are stipulated within the assignment conditions.

The conditions that may be imposed by the Commission on a spectrum assignment include the standard conditions set out under the spectrum regulations, which applies to all types of assignments, and conditions for a spectrum assignment as set out in the spectrum regulations. The Commission may impose further conditions that are relevant to a particular spectrum assignment and defines these conditions in the Applicant Information Package (AIP).

The fees for a spectrum assignment are divided into an annual fee component, which is for the maintenance of the spectrum, and a price component that is set either by auction, tender, fixed price or a combination decided upon by the Commission. The validity period of spectrum assignment is 20 years or a specified lesser period.

1.9.2 Apparatus Assignment

An apparatus assignment authorises a person to use or operate an apparatus of a specified type using specified frequency bands under specified conditions. The conditions that may be prescribed for an apparatus assignment include the standard that are set out in the Spectrum Regulations that applies to all types of assignments and the conditions for an Apparatus Assignment as set out in the Spectrum Regulations.

The fees that are applicable to an apparatus assignment comprise a fixed and variable element. The fixed element is determined by equipment or apparatus type and is depicted in the First Schedule, Table A in the spectrum regulations. The variable element is depicted in Table B and defines the fees that are applicable for three spectrum locations in an ascending structure based on size of bandwidth used.

The validity period for an apparatus assignment is five years or a specified lesser period.

1.9.3 Class Assignment

A class assignment authorises the use by any person of a device with a specified frequency band for a specified purpose.

No fees are required to be paid by persons subject to a class assignment. There is no validity period for class assignment and the class assignment is valid until cancelled by the Commission.

The Commission has issued a Notification of Issuance of Class Assignments ("Notification") in the Gazette on 1 April 2000. The devices that are subject to class assignments are used for the following: -

- Citizen band communications device
- Cellular mobile access device
- Leased channel radio access device
- Spread spectrum device
- Trunked radio access device.

The frequency and conditions applicable to the class assignments have been specified in the Notification.

1.10 Exemption Order

In addition to the above, the Minister has also issued the Communications and Multimedia (Spectrum) (Exemption) Order 2000 (“Order”). This exemption order details out the devices, equipment or systems that are exempted from any form of assignment. These are: -

- Remote controlled consumer devices,
- Cordless telephones,
- Medical and biological telemetry device
- Security devices
- Wireless microphone.

The Order also lists the relevant frequency bands and the conditions applicable to those devices, equipment or systems.



CHAPTER 2

Malaysian Table of Frequency Allocations

Malaysian Spectrum Plan
Malaysian Spectrum Plan

PART A – PRELIMINARY INFORMATION

2.1 Definitions

In the Spectrum Plan, unless the contrary intention appears, the following definitions apply:

“Act” means the Malaysian Communications and Multimedia Act 1998;

“administration” means any Government department or service responsible for discharging the obligations undertaken in the Constitution of the International Telecommunication Union, in the Convention of the International Telecommunication Union and in the Administrative Regulations (CS 1002);

“aeronautical mobile-satellite service” means a mobile-satellite service in which a mobile earth station is located on board an aircraft or a survival craft, a life boat or life craft;

“aeronautical mobile service” means a mobile service between an aeronautical station and aircraft station, or between aircraft stations in which a survival craft station may participate or in which an emergency position indicating radio beacon may also participate on designated distress and emergency frequencies;

“aeronautical radionavigation service” means a radionavigation service intended for the benefit and for the safe operation of aircraft;

“amateur radio service” means a radiocommunications service in which a station is used for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, by duly authorised persons who are interested in radio technique solely with a personal aim and without any pecuniary interest;

“amateur-satellite service” means a radiocommunications service using a space station on earth satellites for the same purposes as those of the amateur radio service;

“broadcasting satellite service” means a radiocommunications service in which signals transmitted or re-transmitted by space stations are intended for direct reception by the general public or a section of the general public;

“broadcasting service” means a content applications service in which content is transmitted by means of radiocommunications and intended for direct reception by the general public or a section of the general public;

“coordinated universal time (UTC)” means a time scale, based on the second (SI), as defined in ITU-R Recommendation ITU-R TF. 460-4;

“cellular mobile service” means a mobile service between a cellular radio base station and cellular mobile access device;

“emergency position indicating radiobeacon” means a radiolocation station, the emissions of which are intended to facilitate search and rescue operations;

“earth exploration-satellite service” means 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 air-borne or earth-based platforms, such information may be distributed to earth stations within the system concerned, platform interrogation may be included;

“fixed-satellite service” means a radiocommunications service between earth stations at a given position, and when one or more satellites are used, the given position may be a specified fixed point or any fixed point within a specified area and includes satellite-to-satellite links which may also be operated in the inter-satellite service and feeder links for other space services;

“fixed service” means a radiocommunications service between specified fixed points;

“harmful interference” means interference which endangers or seriously degrades, obstructs or repeatedly interrupts the functioning of a radionavigation service or one or more safety services operating in accordance with these Regulations;

“inter-satellite service” means a radiocommunications service providing links between artificial earth stations;

“industrial, scientific and medical (ISM) Applications” means operation of equipment or appliances designed to generate, and use locally, radiofrequency energy for industrial, scientific, medical, domestic or similar purposes, excluding applications in the field of telecommunications;

“land mobile satellite service” means a mobile satellite service in which mobile earth stations are located on land;

“maritime mobile service” means a mobile service between a coast station and a ship station, or between ship stations, or between associated on-board stations and includes a survival craft station and emergency position indicating radiobeacon stations;

“maritime mobile-satellite service” means a mobile-satellite service in which mobile earth stations are located on board vessels and includes a survival craft station and emergency position indicating radiobeacon stations;

“meteorological-satellite service” means an earth exploration-satellite service for meteorological purposes;

“mobile service” means a radiocommunications service between a mobile station and land station, or between mobile stations;

“mobile satellite service” means a radiocommunications 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.

“radio” means a general term applied to the use of radio waves;

“radio waves or Hertzian Waves” means electromagnetic waves of frequencies arbitrarily lower than 3000 GHz, propagated in space without artificial guides;

“radiocommunication” means communication by means of radio waves;

“radiocommunications services” means any radiocommunications-based network service;

“radiodetermination service” means a radiocommunications service for the purpose of radio determination;

“radiodetermination station” means a station used for the purpose of radio determination;

“radiolocation service” means a radiodetermination service used for the purpose of radiolocation;

“radionavigation service” means a service for the purpose of navigation including the purpose of announcing obstruction warnings;

“radio direction-finding” means radiodetermination using the reception of radio waves for the purpose of determining the direction of a station or object;

“radio astronomy” means astronomy based on the reception of radio waves of cosmic origin;

“radio astronomy service” means a radiocommunication service involving the use of radio astronomy;

“safety service” means any radiocommunications service where the permanent or temporary, with the ability to meet emergency relief communications requirements for the safeguarding of human life and/or property ;

“space service” means a radiocommunications service using a space station or any other stations located beyond, or intended to go beyond, or which has been beyond, the major portion of the Earth’s atmosphere;

“space radiocommunication” means any radiocommunication involving the use of one or more space stations or the use of one or more reflecting satellites or other objects in space;

“space operation service” means a radiocommunication service concerned exclusively with the operation of spacecraft, in particular space tracking, space telemetry and space telecommand;

“standard frequency and time signal service” means a radiocommunication service for scientific, technical and other purposes, providing the transmission of specified frequencies, time signals, or both, of stated high precision, intended for general reception;

“standard frequency and time signal-satellite service” means a radiocommunication service using space stations on earth satellites for the same purpose as those of the standard frequency and time signal service. This service may also include feeder links necessary for its operation;

“space research service” means a radiocommunication service in which spacecraft or other objects in space are used for scientific or technological research purposes;

2.2 Division of Spectrum Plan Into Frequency Bands

- (1) The Spectrum Plan is divided into frequency bands for both the ITU and the Malaysian Tables.

2.3 How Reference is made in the Table to Services

- (1) Words in the Malaysian Table that are in upper case refer to primary service of the kind described by those words.
- (2) Words in the Malaysian Table that are in lower case refer to a secondary service of the kind described by those words.

2.4 Condition that Applies to Certain Services

If;

- (1) A frequency band is used for the purposes of a service in accordance with this Spectrum Plan; and
- (2) The ITU Radio Regulations do not provide for the frequency band to be used by that service.

Then the requirements for the coordination and notification of services by administrations apply to that use of the frequency band under this Spectrum Plan.

2.5 Use of Frequency Bands – General

- (1) Unless the contrary intention appears in clause 2.9, a frequency band or part of a frequency band specified in the Malaysian Table may be used for the purposes of one or more of the services that are specified in the Table in respect to the frequency band, if:
 - (a) The service is permitted by a frequency band plan that is applicable to the frequency band or part of a frequency band; or
 - (b) The frequency band or part of a frequency band is not covered by a frequency band plan.
- (2) If a reference to a service in the Malaysian Table is immediately followed by a reference in parentheses to a particular mode of operation of the service, the reference is taken to be a reference to the operation of the service only in that mode.

2.6 Use of Frequency Bands – Spectrum, Apparatus and Class Assignment

- (1) A frequency band may be used for a service that:
 - (a) Is operating in accordance with spectrum, apparatus, class assignment and exemption order; and
 - (b) Is not specified in the Malaysian Table in respect of the frequency bands.
- (2) A transmitter to which a class assignment applies may use a frequency band specified in the class assignment for the purposes of a service that is not specified in the Malaysian Table in respect of the frequency band.

2.7 Harmful Interference – General

- (1) If use of a frequency band by a service is subject to the requirement under this Spectrum Plan that the use does not cause harmful interference to another service, the first mentioned service may not claim protection from harmful interference caused by the second mentioned service.
- (2) If use of a frequency band by a service is subject to the requirement under this Spectrum Plan that the service may not claim protection from harmful interference caused by another service, the first mentioned service may not cause harmful interference to the second mentioned service.
- (3) If the frequency band is used otherwise than in accordance with the Radio Regulations by a service, the use of the frequency band by the service must not cause harmful interference to any station outside Malaysia operating in accordance with the Radio Regulations.
- (4) If a frequency band is used otherwise than in accordance with the Radio Regulations by a service, the use of the frequency band by the service must not cause harmful interference to transmitter or radiocommunications receiver aboard foreign aircraft, foreign satellites or foreign vessels that are operating in accordance with the Radio Regulations.

2.8 Harmful Interference – Primary and Secondary Services

This section applies to a secondary service that uses a frequency band.

- (1) The secondary service must not cause harmful interference to a primary service using the frequency band, including a primary service that starts to use the frequency band after the secondary service starts.
- (2) The secondary service must not cause harmful interference to any aircraft, foreign satellites or vessels that are operating in accordance with the Radio Regulations.
- (3) The secondary service cannot claim protection from harmful interference caused by a primary service using the frequency band, including a primary service that starts to use the frequency band after the secondary service starts.
- (4) The secondary service may claim protection from harmful interference caused by another secondary service that :
 - a) is using the frequency band; and
 - b) was licensed after the first-mentioned secondary service.

2.9 Interpretation of the Table

- (1) For the purpose of this Spectrum Plan, a frequency band is identified by the range of numbers that:
 - (a) Is specified in a cell in the Malaysian Table; and
 - (b) Immediately precedes the first reference in the cell to a service.
- (2) The range of numbers that identifies a frequency band is taken:
 - (a) To be expressed in kilohertz (kHz), megahertz (MHz) , gigahertz (GHz) or terahertz (THz), as the case
 - (b) requires; and To include the higher, but not lower, number.

If reference to the service in a cell in the Malaysian Table is followed immediately by one, or more than one alphanumeric symbol that relates to that service, the operation of that service is subject to the conditions or restrictions specified. A symbol preceded by “MLA” refers to the applicable Malaysian condition is defined in the Malaysian footnotes.

3.0 Revocation of Previous Table of Frequency Allocations

The Table of Frequency Allocations made on November 1995 is revoked.

PART B – TABLE OF NATIONAL FREQUENCY ALLOCATION

See page 22



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
Below 9	(NOT ALLOCATED) 5.53 5.54		
9 – 14	RADIONAVIGATION		
14 - 19.95	FIXED MARITIME MOBILE 5.57 5.55 5.56		
19.95 - 20.05	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)		
20.05 - 70	FIXED MARITIME MOBILE 5.57 5.56 5.58		



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
Below 9	(NOT ALLOCATED) 5.53 5.54 MLA1 MLA2	MLA1: Users of frequencies below 9 kHz shall ensure that no harmful interference is caused to the services to which the bands above 9 kHz are allocated. MLA2: Scientific researchers using frequencies below 9 kHz are urged to advise the Commission in order that such research may be afforded all practicable protection from harmful interference.
9 – 14	RADIONAVIGATION	For Radionavigation.
14 - 19.95	FIXED MARITIME MOBILE 5.57 5.56	For public correspondence in the Maritime Mobile Services
19.95 - 20.05	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	Standard Frequency and Time Signal Applications
20.05 - 70	FIXED MARITIME MOBILE 5.57 5.56	For public correspondence in the Maritime Mobile Services



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
70 – 72	RADIONAVIGATION 5.60	FIXED MARITIME MOBILE 5.57 MARITIME RADIONAVIGATION 5.60 Radiolocation	RADIONAVIGATION 5.60 Fixed Maritime Mobile 5.57 5.59
72 – 84	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60 5.56		FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60
84 – 86	RADIONAVIGATION 5.60		RADIONAVIGATION 5.60 Fixed Maritime Mobile 5.57 5.59
86 – 90	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.56	5.61	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60
90 – 110		RADIONAVIGATION 5.62 Fixed 5.64	



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
70 – 72	RADIONAVIGATION 5.60 Fixed Maritime Mobile 5.57	For Radionavigation
72 – 84	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60	Public correspondence in the Maritime Mobile Services
84 – 86	RADIONAVIGATION 5.60 Fixed Maritime Mobile 5.57	For Radionavigation
86 – 90	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60	Public correspondence in the Maritime Mobile Services
90 – 110	RADIONAVIGATION 5.62 Fixed 5.64	For Radionavigation



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
110-112	FIXED MARITIME MOBILE RADIONAVIGATION 5.64	FIXED MARITIME MOBILE MARITIME RADIO-NAVIGATION 5.60 Radiolocation	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64
112-115	RADIONAVIGATION 5.60		RADIONAVIGATION 5.60
115-117.6	RADIONAVIGATION 5.60 Fixed Maritime Mobile 5.64 5.66		Fixed Maritime Mobile 5.64 5.65
117.6-126	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64		FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64
126-129	RADIONAVIGATION 5.60		RADIONAVIGATION 5.60 Fixed Maritime Mobile 5.64 5.65
129-130	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	5.61 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
110-112	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	Public correspondence in the Maritime Mobile Services
112-117.6	RADIONAVIGATION 5.60 Fixed Maritime Mobile 5.64	For Radionavigation
117.6-126	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64 MLA27	Public correspondence in the Maritime Mobile Services MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia Low Power Device in the frequency 125 kHz
126-129	RADIONAVIGATION 5.60 Fixed Maritime Mobile 5.64	For Radionavigation
129-130	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	Public correspondence in the Maritime Mobile Services



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
130-148.5	FIXED MARITIME MOBILE 5.64 5.67	FIXED MARITIME MOBILE 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.64
148.5-160	BROADCASTING	FIXED	FIXED
160-190			Aeronautical Radionavigation
190-200		AERONAUTICAL RADIONAVIGATION	
200-255	BROADCASTING AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION
255-275		Aeronautical Mobile	Aeronautical Mobile
275-283.5		AERONAUTICAL RADIONAVIGATION Aeronautical Mobile	
283.5-285	MARITIME RADIONAVIGATION (radiobeacons) 5.73 AERONAUTICAL RADIONAVIGATION	Maritime Radionavigation (radiobeacons)	
285-315	5.72 5.74	MARITIME RADIONAVIGATION (radiobeacons) 5.73 AERONAUTICAL RADIONAVIGATION	



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
130-160	FIXED MARITIME MOBILE RADIONAVIGATION 5.64	Public correspondence in the Maritime Mobile Services for frequencies 130 - 148 kHz
160-190	FIXED Aeronautical Radionavigation	Bands allocated to Aeronautical Non Directional Beacon (NDB)
190-200	AERONAUTICAL RADIONAVIGATION	Aeronautical Radionavigation Land Station
200-285	AERONAUTICAL RADIONAVIGATION Aeronautical Mobile	Bands allocated to Aeronautical Non Directional Beacon (NDB).
285-315	MARITIME RADIONAVIGATION (radiobeacons) 5.73 AERONAUTICAL RADIONAVIGATION	Bands allocated to: <ol style="list-style-type: none"> 1. Radiobeacons in the Maritime Radio Service 2. Frequency Bands 283.5 – 325 KHz allocated to DGNSS (radiolocation mobile station) 3. Aeronautical Non Directional Beacon (NDB).



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
315-325	AERONAUTICAL RADIONAVIGATION Maritime Radionavigation (Radiobeacons) 5.73 5.72 5.75	MARITIME RADIONAVIGATION (Radiobeacons) 5.73 Aeronautical Radionavigation	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (Radiobeacons) 5.73
325-335	AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION Aeronautical Mobile Maritime Radionavigation (Radiobeacons)	AERONAUTICAL RADIONAVIGATION Aeronautical Mobile
335-405	5.72	AERONAUTICAL RADIONAVIGATION Aeronautical Mobile	
405-415	RADIONAVIGATION 5.76 5.72	RADIONAVIGATION 5.76 Aeronautical Mobile	
415-435	MARITIME MOBILE 5.79 AERONAUTICAL RADIONAVIGATION 5.72	MARITIME MOBILE 5.79 5.79A Aeronautical Radionavigation 5.80	
435-495	MARITIME MOBILE 5.79 5.79A Aeronautical Radionavigation 5.72 5.82	5.77 5.78 5.82	
495-505	MOBILE (distress and calling) 5.83		



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
315-325	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (Radiobeacons) 5.73	Bands allocated to: 1. Radiobeacons in the Maritime Radio Service 2. Frequency Bands 283.5 - 325 kHz allocated to DGSS (radiolocation mobile station) 3. Aeronautical (Non Directional Beacon (NDB).
325-405	AERONAUTICAL RADIONAVIGATION Aeronautical mobile	Bands allocated to Radiobeacons and Aeronautical NDB
405-415	RADIONAVIGATION 5.76 Aeronautical Mobile	Bands allocated to: 1. Radiobeacons 2. Aeronautical NDB
415-495	MARITIME MOBILE 5.79 5.79A Aeronautical Radionavigation 5.82	Bands allocated to: 1. Radiobeacons 2. Aeronautical NDB
495-505	MOBILE (distress and calling) 5.83 MLA25	MLA25: Use of frequencies in the band 490 - 510 kHz must be such as to provide full protection for distress and safety communications on 500 kHz.



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
505-510	MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION	MARITIME MOBILE 5.79	MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION Aeronautical Mobile Land Mobile
510-525	5.72	MOBILE 5.79A 5.84 AERONAUTICAL RADIONAVIGATION	5.81
525-526.5		BROADCASTING 5.86	
526.5-535	BROADCASTING	AERONAUTICAL RADIONAVIGATION	BROADCASTING Mobile 5.88
535-1605	5.87 5.87A	BROADCASTING	BROADCASTING



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
505-526.5	MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION Aeronautical Mobile Land Mobile	Bands allocated to: 1. Aeronautical NDB 2. Public correspondence in the Maritime Mobile Service and DGPS
526.5-535	BROADCASTING Mobile	Bands 526.5 - 1606.5 kHz are currently used for HF Broadcasting. Reserved for Digital Broadcasting.
535-1606.5	BROADCASTING	Bands 526.5 - 1606.5 kHz are currently used for HF Broadcasting. Reserved for Digital Broadcasting.



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
1605-1606.5		BROADCASTING 5.89	
1606.5-1625	MARITIME MOBILE 5.90 FIXED LAND MOBILE 5.92	5.90	FIXED MOBILE RADIOLOCATION RADIONAVIGATION
1625-1635	RADIOLOCATION 5.93	BROADCASTING 5.89 FIXED MOBILE Radiolocation	
1635-1705		5.90	
1705-1800	MARITIME MOBILE 5.90 FIXED LAND MOBILE 5.92 5.96	FIXED MOBILE RADIOLOCATION AERONAUTICAL RADIONAVIGATION	5.91



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
1606.5-1800	FIXED MLA27 MOBILE MLA27 RADIOLOCATION RADIONAVIGATION	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia Used mainly for Coast Station Communications



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
1800-1810	RADIOLOCATION 5.93	AMATEUR	AMATEUR FIXED MOBILE except aeronautical mobile RADIONAVIGATION
1810-1850	AMATEUR 5.98 5.99 5.100 5.101		Radiolocation
1850-2000	FIXED MOBILE except aeronautical mobile 5.92 5.96 5.103	AMATEUR FIXED MOBILE except aeronautical mobile RADIOLOCATION RADIONAVIGATION 5.102	5.97
2000-2025	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED MOBILE	FIXED MOBILE
2025-2045	FIXED MOBILE except aeronautical mobile (R) Meteorological Aids 5.104 5.92 5.103		
2045-2065			



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
<p>1800-2000</p>	<p>AMATEUR FIXED MOBILE except aeronautical mobile RADIONAVIGATION Radiolocation</p> <p>5.97</p>	<p>Used for Communications in the Mobile Service as well as for Amateur Services.</p>
<p>2000-2065</p>	<p>FIXED MOBILE</p>	<p>Used for Land Mobile stations in the Mobile Service</p>



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
2045-2065	MARITIME MOBILE FIXED LAND MOBILE 5.92		
2065-2107		MARITIME MOBILE 5.105	
2107-2160		5.106	
2160-2170	RADIOLOCATION 5.93 5.107	FIXED MOBILE	
2170-2173.5	MARITIME MOBILE		
2173.5-2190.5	MOBILE (distress and calling) 5.108 5.109 5.110 5.111		
2190.5-2194	MARITIME MOBILE		
2194-2300	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.112	FIXED MOBILE 5.112	
2300-2495	FIXED MOBILE except aeronautical mobile (R)	FIXED MOBILE BROADCASTING 5.113	
2495-2498	BROADCASTING 5.113 5.103	STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)	
2498-2501	STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)		



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
2065-2107	MARITIME MOBILE 5.106 MLA3	MLA3: Provided no harmful interference is caused to stations of the Maritime Mobile Service, the frequencies between 2065 - 2107 kHz may be used by stations of the Fixed Service communicating only within Malaysia's national borders and with a mean power not exceeding 50 W.
2107-2170	FIXED MOBILE	Used for Land Mobile stations communication in the Mobile Service
2170-2173.5	MARITIME MOBILE	Public correspondence in the Maritime Mobile Service
2173.5-2190.5	MOBILE (distress and calling) 5.108 5.109 5.110 5.111	Used for distress and calling (2182 kHz)
2190.5-2194	MARITIME MOBILE	Public correspondence in the Maritime Mobile Services
2194-2300	FIXED MOBILE	Used for Land Fixed and Land Mobile stations in the Fixed and Mobile Services respectively
2300-2495	FIXED MOBILE BROADCASTING 5.113	Part of this band may be used for Digital Broadcasting
2495-2501	STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)	Standard frequency and Time Signal applications



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
2501-2502	STANDARD FREQUENCY AND TIME SIGNAL Space Research		
2502-2505	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.114	STANDARD FREQUENCY AND TIME SIGNAL	
2505-2625		FIXED MOBILE	
2625-2650	MARITIME MOBILE MARITIME RADIONAVIGATION 5.92		
2650-2850	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103		
2850-3025	AERONAUTICAL MOBILE (R) 5.111 5.115		
3025-3155	AERONAUTICAL MOBILE (OR)		
3155-3200	FIXED MOBILE except aeronautical mobile (R) 5.116 5.117		
3200-3230	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116		



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
2501-2502	STANDARD FREQUENCY AND TIME SIGNAL Space Research	Standard frequency and Time Signal applications
2502-2505	STANDARD FREQUENCY AND TIME SIGNAL	Standard frequency and Time Signal applications
2505-2850	FIXED MOBILE	Used for Land Fixed and Land Mobile stations in the Fixed and Mobile services respectively
2850-3025	AERONAUTICAL MOBILE (R) 5.111 5.115	Used for Air to Ground and Ground to Air communications
3025-3155	AERONAUTICAL MOBILE (OR) MLA4 MLA26	MLA4: For exclusive use of the Government of Malaysia. MLA26: For exclusive use of the Government of Malaysia and in relation to Appendix 26 of the ITU Radio Regulations.
3155-3200	FIXED MOBILE except aeronautical mobile (R) 5.116	Used for Land Fixed and Land Mobile stations in the Fixed and Mobile services respectively
3200-3230	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	Part of the band Reserved for Digital Broadcasting and sharing with Fixed and Mobile Services



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
3230-3400	FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116 5.118		
3400-3500	AERONAUTICAL MOBILE (R)		
3500-3750	AMATEUR FIXED MOBILE except aeronautical mobile	AMATEUR 5.119	AMATEUR FIXED MOBILE
3750-3800	5.92	AMATEUR FIXED MOBILE except aeronautical mobile (R)	
3800-3900	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE		
3900-3950	AERONAUTICAL MOBILE (OR) 5.123		AERONAUTICAL MOBILE BROADCASTING
3950-4000	FIXED BROADCASTING	5.122 5.125	FIXED BROADCASTING 5.126
4000-4063	FIXED MARITIME MOBILE 5.127 5.126		



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
3230-3400	FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116	Part of the band Reserved for Digital Broadcasting and sharing with Fixed and Mobile Services
3400-3500	AERONAUTICAL MOBILE (R)	Used for Air to Ground and Ground to Air communications
3500-3900	AMATEUR 5.120 FIXED MOBILE	Used for Land Fixed and Land Mobile stations and may also be used for future Amateur Service.
3900-3950	AERONAUTICAL MOBILE BROADCASTING	Bands allocated to Aeronautical HF communication. Part of the band reserved for Digital Broadcasting.
3950-4000	FIXED BROADCASTING 5.126	Land station communication. Part of the band reserved for Digital Broadcasting.
4000-4063	FIXED MARITIME MOBILE 5.127 5.126	Fixed station used for provision of services related to aircraft flight safety. Also used for Public Correspondence in the Maritime Mobile Services



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
4063-4438	MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128 5.129		
4438-4650	FIXED MOBILE except aeronautical mobile (R)		FIXED MOBILE except aeronautical mobile
4650-4700	AERONAUTICAL MOBILE (R)		
4700-4750	AERONAUTICAL MOBILE (OR)		
4750-4850	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 5.113	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113	FIXED BROADCASTING 5.113 Land Mobile
4850-4995	FIXED LAND MOBILE BROADCASTING 5.113		
4995-5003	STANDARD FREQUENCY AND TIME SIGNAL (5000 kHz)		
5003-5005	STANDARD FREQUENCY AND TIME SIGNAL Space Research		
5005-5060	FIXED BROADCASTING 5.113		
5060-5250	FIXED Mobile except aeronautical mobile 5.133		
5250-5450	FIXED MOBILE except aeronautical mobile		



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
4063-4438	MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.129	NAVTEX usage and Digital Selective Calling (DSC)
4438-4650	FIXED MOBILE except aeronautical mobile	Used for Land Fixed and Land Mobile stations in the Fixed and Mobile Services respectively
4650-4700	AERONAUTICAL MOBILE (R)	Used for Air to Ground and Ground to Air communications
4700-4750	AERONAUTICAL MOBILE (OR) MLA26 MLA4	MLA4: For exclusive use of the Government of Malaysia. MLA26: For exclusive use of the Government of Malaysia and in relation to Appendix 26 of the ITU Radio Regulations.
4750-4850	FIXED BROADCASTING 5.113 Land Mobile	HF Broadcasting Reserved for Digital Broadcasting
4850-4995	FIXED LAND MOBILE BROADCASTING 5.113	HF Broadcasting Reserved for Digital Broadcasting
4995-5003	STANDARD FREQUENCY AND TIME SIGNAL (5000 kHz)	Standard frequency and Time Signal applications
5003-5005	STANDARD FREQUENCY AND TIME SIGNAL Space Research	Standard frequency and Time Signal applications
5005-5060	FIXED BROADCASTING 5.113	HF Broadcasting Reserved for Digital Broadcasting
5060-5250	FIXED Mobile except aeronautical mobile	Used for Land Fixed and Land Mobile stations in the Fixed and Mobile Services respectively
5250-5450	FIXED MOBILE except aeronautical mobile	Used for Land Fixed and Land Mobile stations in the Fixed and Mobile Services respectively



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
5450-5480	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	AERONAUTICAL MOBILE (R)	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE
5480-5680	AERONAUTICAL MOBILE (R) 5.111 5.115		
5680-5730	AERONAUTICAL MOBILE (OR) 5.111 5.115		
5730-5900	FIXED LAND MOBILE	FIXED MOBILE except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)
5900-5950	BROADCASTING 5.134 5.136		
5950-6200	BROADCASTING		
6200-6525	MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137		
6525-6685	AERONAUTICAL MOBILE (R)		
6685-6765	AERONAUTICAL MOBILE (OR)		
6765-7000	FIXED Land Mobile 5.139 .138		
7000-7100	AMATEUR AMATEUR – SATELLITE 5.140 5.141		



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
5450-5480	FIXED AERONAUTICAL MOBILE (OR) MOBILE	Used for Aeronautical Mobile station and for Land Fixed and Land Mobile stations in the Fixed and Mobile Services
5480-5680	AERONAUTICAL MOBILE (R) 5.111 5.115	Air to Ground and Ground to Air communications
5680-5730	AERONAUTICAL MOBILE (OR) 5.111 5.115 MLA26	MLA26: For exclusive use of the Government of Malaysia and in relation to Appendix 26 of the ITU Radio Regulations.
5730-5900	FIXED Mobile except aeronautical mobile (R)	Used for Fixed stations
5900-5950	BROADCASTING 5.134 5.136	HF Broadcasting Reserved for Digital Broadcasting
5950-6200	BROADCASTING	HF Broadcasting Reserved for Digital Broadcasting
6200-6525	MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137 MLA5	MLA5: Provided no harmful interference is caused to stations of the Maritime Mobile Service, frequencies in the band 6200 - 6213.5 kHz and 6220.5 - 6525 kHz may be used exceptionally by stations in the Fixed service, communicating only within Malaysia's national borders and with a mean power not exceeding 50 W.
6525-6685	AERONAUTICAL MOBILE (R)	Air to Ground and Ground to Air communications
6685-6765	AERONAUTICAL MOBILE (OR) MLA26 MLA4	MLA4: For exclusive use of the Government of Malaysia. MLA26: For exclusive use of the Government of Malaysia and in relation to Appendix 26 of the ITU Radio Regulations.
6765-7000	FIXED Land Mobile 5.138	Used for Fixed stations
7000-7100	AMATEUR AMATEUR – SATELLITE	For Amateur Use



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
7100-7300	BROADCASTING	AMATEUR 5.142	BROADCASTING
7300-7350	BROADCASTING 5.134 5.143		
7350-8100	FIXED Land Mobile 5.144		
8100-8195	FIXED MARITIME MOBILE		
8195-8815	MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111		
8815-8965	AERONAUTICAL MOBILE (R)		
8965-9040	AERONAUTICAL MOBILE (OR)		
9040-9400	FIXED		
9400-9500	BROADCASTING 5.134 5.146		
9500-9900	BROADCASTING 5.147		
9900-9995	FIXED		
9995-10003	STANDARD FREQUENCY AND TIME SIGNAL (10000 kHz) 5.111		



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
7100-7300	BROADCASTING	HF Broadcasting Reserved for Digital Broadcasting
7300-7350	BROADCASTING 5.134 5.143	HF Broadcasting Reserved for Digital Broadcasting
7350-8100	FIXED Land Mobile 5.144	Used for Fixed service
8100-8195	FIXED MARITIME MOBILE	Used for ship communication
8195-8815	MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111	Used for ship communication
8815-8965	AERONAUTICAL MOBILE (R)	Air to Ground and Ground to Air communications
8965-9040	AERONAUTICAL MOBILE (OR) MLA4 MLA26	MLA4: For exclusive use of the Government of Malaysia. MLA26: For exclusive use of the Government of Malaysia and in relation to Appendix 26 of the ITU Radio Regulations.
9040-9400	FIXED	Used for Fixed service
9400-9500	BROADCASTING 5.134 5.135 5.146	HF Broadcasting Reserved for Digital Broadcasting
9500-9900	BROADCASTING 5.147 MLA6	MLA6: Provided no harmful interference is caused to the broadcasting service, frequencies in the bands 9775-9900 kHz, 11650-11700 kHz and 11975-12050 kHz may be caused by stations in the Fixed service communicating only within Malaysia's national borders, and with a total radiated power not exceeding 24 dBW.
9900-9995	FIXED	Used for Fixed service
9995-10003	STANDARD FREQUENCY AND TIME SIGNAL (10000 kHz) 5.111	Standard frequency and Time Signal applications



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
10003-10005	STANDARD FREQUENCY AND TIME SIGNAL Space Research 5.111		
10005-10100	AERONAUTICAL MOBILE (R) 5.111		
10100-10150	FIXED Amateur		
10150-11175	FIXED Mobile except aeronautical mobile (R)		
11175-11275	AERONAUTICAL MOBILE (OR)		
11275-11400	AERONAUTICAL MOBILE (R)		
11400-11600	FIXED		
11600-11650	BROADCASTING 5.134 5.146		
11650-12050	BROADCASTING 5.147		
12050-12100	BROADCASTING 5.134 5.146		
12100-12230	FIXED		
12230-13200	MARITIME MOBILE 5.109 5.110 5.132 5.145		
13200-13260	AERONAUTICAL MOBILE (OR)		
13260-13360	AERONAUTICAL MOBILE (R)		
13360-13410	FIXED RADIO ASTRONOMY 5.149		



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
10003-10005	STANDARD FREQUENCY AND TIME SIGNAL Space Research 5.111	Standard frequency and Time Signal applications
10005-10100	AERONAUTICAL MOBILE (R) 5.111	Air to Ground and Ground to Air communications
10100-10150	FIXED Amateur	Used for Fixed service
10150-11175	FIXED Mobile except aeronautical mobile (R)	Used for Fixed service
11175-11275	AERONAUTICAL MOBILE (OR) MLA4 MLA26	MLA4: For exclusive use of the Government of Malaysia. MLA26: For exclusive use of the Government of Malaysia and in relation to Appendix 26 of the ITU Radio Regulations.
11275-11400	AERONAUTICAL MOBILE (R)	Air to Ground and Ground to Air communications
11400-11600	FIXED	Used for Fixed service
11600-11650	BROADCASTING 5.134 5.146	HF Broadcasting Reserved for Digital Broadcasting
11650-12050	BROADCASTING 5.147 MLA6	MLA6: Provided no harmful interference is caused to the broadcasting service, frequencies in the bands 9775-9900 kHz, 11650-11700 kHz and 11975-12050 kHz may be caused by stations in the Fixed service communicating only within Malaysia's national borders, and with a total radiated power not exceeding 24 dBW.
12050-12100	BROADCASTING 5.134 5.146	HF Broadcasting Reserved for Digital Broadcasting
12100-12230	FIXED	Used for Fixed service
12230-13200	MARITIME MOBILE 5.109 5.110 5.132 5.145	Public correspondence in the Maritime Mobile Service
13200-13260	AERONAUTICAL MOBILE (OR) MLA4 MLA26	MLA4: For exclusive use of the Government of Malaysia. MLA26: For exclusive use of the Government of Malaysia and in relation to Appendix 26 of the ITU Radio Regulations.
13260-13360	AERONAUTICAL MOBILE (R)	Air to Ground and Ground to Air communications
13360-13410	FIXED RADIO ASTRONOMY 5.149	Land Fixed station application



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
13410-13570	FIXED Mobile except aeronautical mobile (R) 5.150		
13570-13600	BROADCASTING 5.134 5.151		
13600-13800	BROADCASTING		
13800-13870	BROADCASTING 5.134 5.151		
13870-14000	FIXED Mobile except aeronautical mobile (R)		
14000-14250	AMATEUR AMATEUR-SATELLITE		
14250-14350	AMATEUR 5.152		
14350-14990	FIXED Mobile except aeronautical mobile (R)		
14990-15005	STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz) 5.111		
15005-15010	STANDARD FREQUENCY AND TIME SIGNAL Space Research		
15010-15100	AERONAUTICAL MOBILE (OR)		
15100-15600	BROADCASTING		



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
13410-13570	FIXED Mobile except aeronautical mobile (R) 5.150 MLA28	Used for Fixed Service MLA28: Band is used for Industrial, Scientific and Medical (ISM) purposes.
13570-13600	BROADCASTING 5.134 5.151	Reserved for Digital Broadcasting
13600-13800	BROADCASTING	Reserved for Digital Broadcasting
13800-13870	BROADCASTING 5.134 5.151	Reserved for Digital Broadcasting
13870-14000	FIXED Mobile except aeronautical mobile (R)	Used for Fixed Service
14000-14250	AMATEUR AMATEUR-SATELLITE	For Amateur Use
14250-14350	AMATEUR 5.152	For Amateur Use
14350-14990	FIXED Mobile except aeronautical mobile (R)	Used for Fixed Service
14990-15005	STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz) 5.111	Standard frequency and Time Signal applications
15005-15010	STANDARD FREQUENCY AND TIME SIGNAL Space Research	Standard frequency and Time Signal applications
15010-15100	AERONAUTICAL MOBILE (OR) MLA4 MLA26	MLA4: For exclusive use of the Government of Malaysia. MLA26: For exclusive use of the Government of Malaysia and in relation to Appendix 26 of the ITU Radio Regulations.
15100-15600	BROADCASTING	HF Broadcasting Reserved for Digital Broadcasting



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
15600-15800	BROADCASTING 5.134 5.146		
15800-16360	FIXED 5.153		
16360-17410	MARITIME MOBILE 5.109 5.110 5.132 5.145		
17410-17480	FIXED		
17480-17550	BROADCASTING 5.134 5.146		
17550-17900	BROADCASTING		
17900-17970	AERONAUTICAL MOBILE (R)		
17970-18030	AERONAUTICAL MOBILE (OR)		
18030-18052	FIXED		
18052-18068	FIXED Space Research		
18068-18168	AMATEUR AMATEUR-SATELLITE 5.154		
18168-18780	FIXED Mobile except aeronautical mobile		
18780-18900	MARITIME MOBILE		
18900-19020	BROADCASTING 5.134 5.146		
19020-19680	FIXED		
19680-19800	MARITIME MOBILE 5.132		



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
15600-15800	BROADCASTING 5.134 5.146	HF Broadcasting Reserved for Digital Broadcasting
15800-16360	FIXED 5.153	Used for Fixed Service
16360-17410	MARITIME MOBILE 5.109 5.110 5.132 5.145	DSC and Public Correspondence for Maritime Mobile Service
17410-17480	FIXED	Used for Fixed Service
17480-17550	BROADCASTING 5.134 5.146	Reserved for Digital Broadcasting
17550-17900	BROADCASTING	Reserved for Digital Broadcasting
17900-17970	AERONAUTICAL MOBILE (R)	Air to Ground and Ground to Air communications
17970-18030	AERONAUTICAL MOBILE (OR) MLA4 MLA26	MLA4: For exclusive use of the Government of Malaysia. MLA26: For exclusive use of the Government of Malaysia and in relation to Appendix 26 of the ITU Radio Regulations.
18030-18052	FIXED	Used for Fixed Service
18052-18068	FIXED Space Research	Used for Fixed Service
18068-18168	AMATEUR AMATEUR-SATELLITE 5.154	For Amateur Use
18168-18780	FIXED Mobile except aeronautical mobile	Used for Fixed Service
18780-18900	MARITIME MOBILE	Public correspondence in the Maritime Mobile Service
18900-19020	BROADCASTING 5.134 5.146	Reserved for Digital Broadcasting
19020-19680	FIXED	Used for Fixed Service
19680-19800	MARITIME MOBILE 5.132	Public correspondence in the Maritime Mobile Service



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
19800-19990	FIXED		
19990-19995	STANDARD FREQUENCY AND TIME SIGNAL Space Research 5.111		
19995-20010	STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz) 5.111		
20010-21000	FIXED Mobile		
21000-21450	AMATEUR AMATEUR-SATELLITE		
21450-21850	BROADCASTING		
21850-21870	FIXED 5.155A 5.155		
21870-21924	FIXED 5.155B		
21924-22000	AERONAUTICAL MOBILE (R)		
22000-22855	MARITIME MOBILE 5.132 5.156		
22855-23000	FIXED 5.156		
23000-23200	FIXED Mobile except aeronautical mobile (R) 5.156		
23200-23350	AERONAUTICAL MOBILE (OR) FIXED 5.156A		



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
19800-19990	FIXED	Used for Fixed Service
19990-19995	STANDARD FREQUENCY AND TIME SIGNAL Space Research 5.111	Standard frequency and Time Signal applications
19995-20010	STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz) 5.111	Standard frequency and Time Signal applications
20010-21000	FIXED Mobile	Used for Fixed Service
21000-21450	AMATEUR AMATEUR-SATELLITE	For Amateur Use
21450-21850	BROADCASTING	Reserved for Digital Broadcasting
21850-21870	FIXED 5.155 5.155A	Used for Fixed Service
21870-21924	FIXED 5.155B	Used for Fixed Service
21924-22000	AERONAUTICAL MOBILE (R)	Air to Ground and Ground to Air communications
22000-22855	MARITIME MOBILE 5.132 5.156	Public correspondence in the Maritime Mobile Service
22855-23000	FIXED 5.156	Used for Fixed Service
23000-23200	FIXED Mobile except aeronautical mobile (R) 5.156	Used for Fixed Service
23200-23350	AERONAUTICAL MOBILE (OR) FIXED 5.156A	Air to Ground and Ground to Air Communications



Frequency Band (kHz)	ITU Allocation		
	Region1	Region2	Region 3
23350-24000	FIXED MOBILE except aeronautical mobile 5.157		
24000-24890	FIXED LAND MOBILE		
24890-24990	AMATEUR AMATEUR-SATELLITE		
24990-25005	STANDARD FREQUENCY AND TIME SIGNAL (25000 kHz)		
25005-25010	STANDARD FREQUENCY AND TIME SIGNAL Space Research		
25010-25070	FIXED MOBILE except aeronautical mobile		
25070-25210	MARITIME MOBILE		
25210-25550	FIXED MOBILE except aeronautical mobile		
25550-25670	RADIO ASTRONOMY 5.149		
25670-26100	BROADCASTING		
26100-26175	MARITIME MOBILE 5.132		
26175-27500	FIXED MOBILE except aeronautical mobile 5.150		



Frequency Band (kHz)	Malaysian Allocation	Notes/Future use
23350-24000	FIXED MOBILE except aeronautical mobile 5.157	Used for Fixed and Mobile Services.
24000-24890	FIXED LAND MOBILE	Used for Fixed and Mobile Services.
24890-24990	AMATEUR AMATEUR-SATELLITE	For Amateur Use
24990-25005	STANDARD FREQUENCY AND TIME SIGNAL (25000 kHz)	Standard frequency and Time Signal applications
25005-25010	STANDARD FREQUENCY AND TIME SIGNAL Space Research	Standard frequency and Time Signal applications
25010-25070	FIXED MOBILE except aeronautical mobile	Used for Fixed and Mobile Services.
25070-25210	MARITIME MOBILE	Public correspondence in the Maritime Mobile Service
25210-25550	FIXED MOBILE except aeronautical mobile	Used for Fixed and Mobile Services.
25550-25670	RADIO ASTRONOMY 5.149	For Radio Astronomy use
25670-26100	BROADCASTING	Reserved for Digital Broadcasting
26100-26175	MARITIME MOBILE 5.132	Public Correspondence in the maritime mobile services
26175-27500	FIXED MOBILE except aeronautical mobile 5.150 MLA27 MLA28	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA28: Band is used for Industrial, Scientific and Medical (ISM) purposes



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
27.5-28		METEOROLOGICAL AIDS FIXED MOBILE	
28-29.7		AMATEUR AMATEUR-SATELLITE	
29.7-30.005		FIXED MOBILE	
30.005-30.01		SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	
30.01-37.5		FIXED MOBILE	
37.5-38.25		FIXED MOBILE Radio Astronomy 5.149	
38.25-39.986		FIXED MOBILE	
39-8.986-40.02		FIXED MOBILE Space Research	
40.02-40.98		FIXED MOBILE 5.150	



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
27.5-28	METEOROLOGICAL AIDS FIXED MLA27 MOBILE MLA27	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia.
28-29.7	AMATEUR AMATEUR-SATELLITE MLA27	For Amateur Use MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia.
29.7-30.005	FIXED MOBILE	Used for Fixed and Mobile Services.
30.005-30.01	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	Used for Fixed and Mobile Services.
30.01-37.5	FIXED MOBILE MLA4	MLA4: For exclusive use of the Government of Malaysia.
37.5-38.25	FIXED MOBILE Radio Astronomy 5.149	Used for Fixed and Mobile Services.
38.25-39.986	FIXED MOBILE	Used for Fixed and Mobile Services.
39.986-40.02	FIXED MOBILE Space Research	Used for Fixed and Mobile Services.
40.02-40.98	FIXED MOBILE 5.150 MLA27 MLA28	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA28: Band is used for Industrial, Scientific and Medical (ISM) purposes



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
40.98-41.015		FIXED MOBILE Space Research 5.160 5.161	
41.015-44		FIXED MOBILE 5.160 5.161	
44-47		FIXED MOBILE 5.162 5.162A	
47-50	BROADCASTING	FIXED MOBILE	FIXED MOBILE BROADCASTING 5.162A
50-54		AMATEUR 5.162A 5.166 5.167 5.168 5.170	
54-68		BROADCASTING Fixed Mobile 5.172	FIXED MOBILE BROADCASTING 5.162A



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
40.98-41.015	FIXED MOBILE Space Research	Used for Fixed and Mobile Services.
41.015-44	FIXED MOBILE MLA4	MLA4: For exclusive use of the Government of Malaysia.
44-47	FIXED MOBILE MLA4 MLA27	MLA4: For exclusive use of the Government of Malaysia. MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia.
47-50	FIXED MLA4 MLA27 MOBILE MLA4 MLA27 BROADCASTING MLA7 5.162A	MLA4: For exclusive use of the Government of Malaysia. MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA7: Provided no harmful interference to the broadcasting service, the frequencies between 47 MHz and 68 MHz may be used by stations of the fixed and mobile services communicating only within Malaysia's national borders. All existing Broadcasting services to be vacated by 2005
50-54	FIXED MLA4 MOBILE MLA4 BROADCASTING 5.167 5.162A MLA7	MLA4: For exclusive use of the Government of Malaysia. MLA7: Provided no harmful interference to the broadcasting service, the frequencies between 47 MHz and 68 MHz may be used by stations of the fixed and mobile services communicating only within Malaysia's national borders All existing Broadcasting services to be vacated by 2005
54-68	FIXED MLA4 MOBILE MLA4 BROADCASTING 5.162A MLA7	MLA4: For exclusive use of the Government of Malaysia. MLA7: Provided no harmful interference to the broadcasting service, the frequencies between 47 MHz and 68 MHz may be used by stations of the fixed and mobile services communicating only within Malaysia's national borders All existing Broadcasting services to be vacated by 2005



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
68-72	FIXED MOBILE except aeronautical mobile	BROADCASTING Fixed Mobile 5.173	FIXED MOBILE 5.149 5.176 5.179
72-73		FIXED MOBILE	
73-74.6		RADIO ASTRONOMY 5.178	
74.6-74.8		5.149 5.174 5.175 5.177 5.179 FIXED MOBILE	
74.8-75.2	AERONAUTICAL RADIONAVIGATION 5.180 5.181		



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
68-74.8	FIXED MOBILE 5.149 5.176 5.179 MLA8	MLA8: Frequency band 70 - 72 MHz is allocated for civilian use and 72.8 - 74.8 MHz is for exclusive use of the Government of Malaysia.
74.8-75.2	AERONAUTICAL RADIONAVIGATION 5.180 5.181	Bands assigned to Instrument Landing System (ILS) Marker Beacon (75 MHz)



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
75.2-75.4	FIXED MOBILE except aeronautical mobile 5.175 5.179 5.184 5.187	FIXED MOBILE 5.179	
75.4-76		FIXED MOBILE	FIXED MOBILE 5.182 5.183 5.188
76-87		BROADCASTING Fixed Mobile 5.185	
87-87.5			
87.5-88	BROADCASTING 5.190	FIXED MOBILE BROADCASTING	
88-100		BROADCASTING	
100-108	BROADCASTING 5.192 5.194		
108-117.975	AERONAUTICAL RADIONAVIGATION 5.197		
117.975-137	AERONAUTICAL MOBILE (R) 5.111 5.198 5.199 5.200 5.201 5.202 5.203 5.203A 5.203B		



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
75.2-75.4	FIXED MLA4 MOBILE MLA4 MLA9	MLA4: For exclusive use of the Government of Malaysia. MLA9: Frequency Bands between 75.2 MHz and 78 MHz are assigned to the Government of Malaysia. The transmitter power of the stations shall not exceed 5 W.
75.4-87	FIXED MLA4 MOBILE MLA4 MLA9	MLA4: For exclusive use of the Government of Malaysia. MLA9: Frequency Bands between 75.2 MHz and 78 MHz are assigned to the Government of Malaysia. The transmitter power of the stations shall not exceed 5 W.
87-100	FIXED MLA10 MOBILE MLA10 BROADCASTING	The bands between 87.5 MHz to 108 MHz are allocated for FM Radio Broadcasting MLA10: Suppressed
100-108	BROADCASTING	The bands between 87.5 MHz to 108 MHz are allocated for FM Radio Broadcasting
108-117.975	AERONAUTICAL RADIONAVIGATION	Bands assigned to ILS Localizer / VOR
117.975-137	AERONAUTICAL MOBILE (R) 5.111 5.198 5.199 5.200 5.202 5.203 5.203A 5.203B	Air to Ground and Ground to Air communications



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
137-137.025		SPACE OPERATION (space-to-Earth) METEROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	
137.025-137.175		SPACE OPERATION (space-To-Earth) METEROLOGICAL-SATELLITE (space-To-Earth) SPACE RESEARCH (space-To-Earth) Fixed Mobile-Satellite (space-To-Earth) 5.208A 5.209 Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	
137.175-137.825		SPACE OPERATION (space-to-Earth) METEROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	
137.825-138		SPACE OPERATION (space-To-Earth) METEROLOGICAL-SATELLITE (space-To-Earth) SPACE RESEARCH (space-To-Earth) Fixed Mobile-Satellite (space-To-Earth) 5.208A 5.209 Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
137-137.025	SPACE OPERATION (space-to-Earth) METEROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.209 SPACE RESEARCH (space-to-Earth) FIXED MOBILE except aeronautical mobile (R) 5.204 5.208	Bands 137 to 138 MHz may be allocated for LEO Satellite
137.025-137.175	SPACE OPERATION (Space-To-Earth) METEROLOGICAL-SATELLITE (Space-To-Earth) SPACE RESEARCH (Space-To-Earth) FIXED MOBILE except aeronautical mobile (R) Mobile-Satellite (Space-To-Earth) 5.208A 5.209 5.204 5.208	Bands 137 to 138 MHz may be allocated for LEO Satellite
137.175-137.825	SPACE OPERATION (space-to-Earth) METEROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.209 SPACE RESEARCH (space-to-Earth) FIXED MOBILE except aeronautical mobile (R) 5.204 5.208	Bands 137 to 138 MHz may be allocated for LEO Satellite The band 137.56 MHz is allocated to Mobile Satellite services.
137.825-138	SPACE OPERATION (Space-To-Earth) METEROLOGICAL-SATELLITE (Space-To-Earth) SPACE RESEARCH (space-To-Earth) FIXED MOBILE except aeronautical mobile (R) Mobile-Satellite (space-To-Earth) 5.208A 5.209 5.204 5.208	Bands 137 to 138 MHz may be allocated for LEO Satellite



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
138-143.6	AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	FIXED MOBILE RADIOLOCATION Space Research (space-to-Earth)	FIXED MOBILE Space Research (space-to-Earth) 5.207 5.213
143.6-143.65	AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space-to-Earth) 5.211 5.212 5.214	FIXED MOBILE SPACE RESEARCH (space-to-Earth) RADIOLOCATION	FIXED MOBILE SPACE RESEARCH (space-to-Earth) 5.207 5.213
143.65-144	AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	FIXED MOBILE RADIOLOCATION Space Research (space-to-Earth)	FIXED MOBILE Space Research (space-to-Earth) 5.207 5.213
144-146	AMATEUR AMATEUR-SATELLITE 5.216		
146-148	FIXED MOBILE except aeronautical mobile (R)	AMATEUR 5.217	AMATEUR FIXED MOBILE 5.217



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
138-143.6	FIXED MLA11 MOBILE MLA11 Space Research (space-to-Earth)	MLA11: Frequency band between 141 MHz and 142.6 MHz is assigned for private network for fixed and mobile services.
143.6-143.65	FIXED MOBILE SPACE RESEARCH (space-to-Earth)	
143.65-144	FIXED MOBILE Space Research (space-to-Earth)	
144-146	AMATEUR 5.210 AMATEUR-SATELLITE MLA12	MLA12: The frequency band between 144 MHz and 148 MHz is restricted to the amateur service.
146-148	AMATEUR FIXED MOBILE MLA12	MLA12: The frequency band between 144 MHz and 148 MHz is restricted to the amateur service. Part of the Bands are also shared between Fixed and Mobile Services



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
148-149.9	FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219 5.221	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219 5.221	
149.9-150.05		MOBILE-SATELLITE (Earth-to-space) 5.209 5.224A RADIONAVIGATION-SATELLITE 5.224B 5.220 5.222 5.223	
150.05-153	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	FIXED MOBILE	
153-154	FIXED MOBILE except aeronautical mobile (R) Meteorological Aids		
154-156.7625	FIXED MOBILE except aeronautical mobile (R) 5.226 5.227	5.225 5.226 5.227	
156.7625-156.8375		MARITIME MOBILE (distress and calling) 5.111 5.226	



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
148-149.9	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219 5.221	Bands are shared between Mobile Satellite, Fixed and Mobile Services
149.9-150.05	MOBILE-SATELLITE (Earth-to-space) 5.209 5.224A RADIONAVIGATION-SATELLITE 5.224B 5.220 5.222 5.223	Part of the band assigned to Mobile Satellite Services
150.05-156.7625	FIXED MOBILE 5.226 5.227	The band between 156.025 MHz to 162.025 MHz is used exclusively for Maritime Mobile Services. See Appendix S18.
156.7625-156.8375	MARITIME MOBILE (Distress and Calling) 5.111 5.226	The band between 156.025 to 162.025 MHz is used exclusively for Maritime Mobile Services. See Appendix S18. The Frequency of 156.8 MHz is exclusively for Distress and Calling



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
156.8375-174	FIXED MOBILE except aeronautical mobile 5.226 5.229	FIXED MOBILE 5.226 5.230 5.231 5.232	
174-216	BROADCASTING 5.235 5.237 5.243	BROADCASTING Fixed Mobile 5.234	FIXED MOBILE BROADCASTING
216-220		FIXED MARITIME MOBILE Radiolocation 5.241 5.242	
220-223		AMATEUR FIXED MOBILE Radiolocation 5.241	5.233 5.238 5.240 5.245
223-225	BROADCASTING		FIXED
225-230	Fixed Mobile 5.243 5.246 5.247	FIXED MOBILE	MOBILE BROADCASTING AERONAUTICAL RADIONAVIGATION Radiolocation 5.250
230-235	FIXED MOBILE 5.247 5.251 5.252		FIXED MOBILE AERONAUTICAL - RADIONAVIGATION 5.250



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
156.8375-174	FIXED MOBILE 5.226 MLA27	The band between 156.025 to 162.025 MHz is used exclusively for Maritime Mobile Services. See Appendix S18. MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia.
174-223	FIXED MLA13 MOBILE MLA13 MLA27 BROADCASTING MLA31	MLA13: Fixed and mobile services operating in the band between 174 MHz and 230 MHz shall not cause harmful interference to the broadcasting service. MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA31: The frequency band 174 to 230 MHz is planned for Digital Audio Broadcast (DAB) service. SRSP Ref: 520a
223-230	FIXED MLA4 MLA27 MOBILE MLA4 MLA27 BROADCASTING MLA31 AERONAUTICAL - RADIONAVIGATION MLA4 Radiolocation MLA14	MLA4: For exclusive use of the Government of Malaysia. MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA31: The frequency band 174 - 230 MHz is planned for Digital Audio Broadcast (DAB) service. MLA14: Frequency band between 225 to 235 MHz is assigned to the Government of Malaysia; and stations in any service in this band shall not cause harmful interference to stations of the broadcasting service.
230-235	FIXED MLA4 MOBILE MLA4 AERONAUTICAL - RADIONAVIGATION MLA4	MLA4: For exclusive use of the Government of Malaysia. MLA14: Frequency band between 225 to 235 MHz is assigned to the Government of Malaysia; and stations in any service in this band shall not cause harmful interference to stations of the broadcasting service.



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
235-267		FIXED MOBILE 5.111 5.199 5.252 5.254 5.256	
267-272		FIXED MOBILE Space Operation (space-to-Earth) 5.254 5.257	
272-273		SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	
273-312		FIXED MOBILE 5.254	
312-315		FIXED MOBILE Mobile-Satellite (Earth-to-space) 5.254 5.255	
315-322		FIXED MOBILE 5.254	
322-328.6		FIXED MOBILE RADIO ASTRONOMY 5.149	
328.6-335.4		AERONAUTICAL RADIONAVIGATION 5.258 5.259	



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
235-267	FIXED MOBILE 5.111 5.199 5.254 5.256 MLA4	Bands shared between Fixed and Mobile Services MLA4: For exclusive use of the Government of Malaysia.
267-272	FIXED MLA4 MOBILE MLA4 Space Operation (space-to-Earth) 5.254 5.257	MLA4: For exclusive use of the Government of Malaysia.
272-273	SPACE OPERATION (space-to-Earth) FIXED MLA4 MOBILE MLA4 5.254	MLA4: For exclusive use of the Government of Malaysia.
273-312	FIXED MOBILE 5.254 MLA4 MLA27	MLA4: For exclusive use of the Government of Malaysia. MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. The frequency band 279 to 281 MHz is allocated for paging service.
312-315	FIXED MLA27 MOBILE MLA27 Mobile-Satellite (Earth-to-space) 5.254 5.255 MLA4	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA4: For exclusive use of the Government of Malaysia.
315-322	FIXED MOBILE 5.254 MLA4 MLA27	MLA4: For exclusive use of the Government of Malaysia. MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia.
322-328.6	FIXED MLA4 MOBILE MLA4 RADIO ASTRONOMY 5.149	MLA4: For exclusive use of the Government of Malaysia.
328.6-335.4	AERONAUTICAL – RADIONAVIGATION 5.258	Bands assigned to ILS



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
335.4-387		FIXED MOBILE 5.254	
387-390		FIXED MOBILE Mobile-Satellite (space-to-Earth) 5.208A 5.254 5.255	
390-399.9		FIXED MOBILE 5.254	
399.9-400.05		MOBILE-SATELLITE (Earth-to-space) 5.209 5.224A RADIONAVIGATION-SATELLITE 5.222 5.260 5.224B 5.220	
400.05-400.15		STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 5.261 5.262	
400.15-401		METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.209 SPACE RESEARCH (space-to-Earth) 5.263 Space Operation (space-to-Earth) 5.262 5.264	
401-402		EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (Earth-to-space) SPACE OPERATION (space-to-Earth) Fixed Mobile except aeronautical mobile	



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
335.4-387	FIXED MLA4 MOBILE MLA4 5.254 MLA37	MLA4: For exclusive use of the Government of Malaysia. MLA37: The frequency band 380 to 400 MHz is allocated for Digital Trunk Radio service.
387-390	FIXED MLA4 MOBILE MLA4 Mobile-Satellite (space-to-Earth) 5.208A 5.254 5.255 MLA37	MLA4: For exclusive use of the Government of Malaysia. MLA37: The frequency band 380 to 400 MHz is allocated for Digital Trunk Radio service. SRSP Ref: 519M
390-399.9	FIXED MLA4 MOBILE MLA4 5.254 MLA37	MLA4: For exclusive use of the Government of Malaysia. MLA37: The frequency band 380 to 400 MHz is allocated for the Digital Trunk Radio service.
399.9-400.05	MOBILE-SATELLITE (Earth-to-space) 5.209 5.224A RADIONAVIGATION-SATELLITE 5.222 5.260 5.220 5.224B	Bands allocated to Mobile Satellite Services
400.05-400.15	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) FIXED MOBILE 5.261 5.262	Standard frequency and Time Signal applications Shared with fixed and mobile services.
400.15-401	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.209 SPACE RESEARCH (space-to-Earth) 5.263 FIXED MOBILE Space Operation (space-to-Earth) 5.262 5.264	Bands for Mobile Satellite and MET-Satellite Services. Protection of 401-406 MHz band should be ensured for MET-AIDS.
401-402	EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (Earth-to-space) SPACE OPERATION (space-to-Earth) Fixed Mobile except aeronautical mobile	Protection of MET-AIDS systems should be assured.



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
402-403		EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	
403-406		METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile	
406-406.1		MOBILE-SATELLITE (Earth-to-space) 5.266 5.267	
406.1-410		FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	
410-420		FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) 5.268	
420-430		FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271	



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
402-403	EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	Protection of MET-AIDS systems should be assured.
403-406	METEOROLOGICAL AIDS Fixed MLA27 Mobile except aeronautical mobile MLA27	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. Bands 405.725 MHz, 405.8 MHz and 405.85 MHz allocated to Scada and telemetry
406-406.1	MOBILE-SATELLITE (Earth-to-space) 5.266 5.267	Bands allocated to Mobile Satellite Services (Low power Satellite Emergency Position Indicating Radiobeacons).
406.1-410	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	Bands allocated to Mobile services
410-420	FIXED MLA27 MOBILE except aeronautical mobile MLA27 SPACE RESEARCH (space-to-space) 5.268	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. Possibility of allocation of bands 410 to 430 MHz for Digital Trunk Radio Service (DTRS) Existing Fixed Services to be vacated
420-430	FIXED MOBILE except aeronautical mobile Radiolocation	Bands allocated to Digital Trunk Radio Service (DTRS).



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
430-440	AMATEUR RADIOLOCATION 5.138 5.271 5.272 5.273 5.274 5.275 5.276 5.277 5.280 5.281 5.282 5.283	RADIOLOCATION Amateur 5.271 5.276 5.277 5.278 5.279 5.281 5.282	
440-450	FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271 5.284 5.285 5.286		
450-455	FIXED MOBILE 5.209 5.271 5.286 5.286A 5.286B 5.286C 5.286D 5.286E		
455-456	FIXED MOBILE 5.209 5.271 5.286A 5.286B 5.286C 5.286E	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.209 5.286A 5.286B 5.286C	FIXED MOBILE 5.209 5.271 5.286A 5.286B 5.286C 5.286E
456-459	FIXED MOBILE 5.271 5.287 5.288		
459-460	FIXED MOBILE 5.209 5.271 5.286A 5.286B 5.286C 5.286E	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.209 5.286A 5.286B 5.286C	FIXED MOBILE 5.209 5.271 5.286A 5.286B 5.286C 5.286E
460-470	FIXED MOBILE Meteorological-Satellite (space-to-Earth) 5.287 5.288 5.289 5.290		



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
430-435	RADIOLOCATION FIXED MLA27 MOBILE except aeronautical mobile Amateur 5.276 5.282	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. Reserved for Radiolocation
435-438	RADIOLOCATION FIXED Amateur 5.276 5.282 MLA27	Portion of the band used for Point to Multipoint data & telemetry MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia
438-440	RADIOLOCATION FIXED MOBILE except aeronautical mobile Amateur 5.276	Portion of the band used for Point to Multipoint data and telemetry
440-450	FIXED MOBILE except aeronautical mobile Radiolocation 5.286	Bands shared between Fixed and Mobile services
450-455	FIXED MLA27 MOBILE 5.209 5.286 5.286A MLA29	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA29: Portion of the band is sub-allocated for the various cellular phone services in Malaysia: ATUR 450, (E-TAC) 900, (AMPS/D.AMPS) 800, GSM 900 and GSM 1800 (previously known as PCN). All analogue services to be vacated by 2005.
455-456	FIXED MLA27 MOBILE 5.209 5.286A MLA29	MLA27: Portion of the band may be used for Low MLA29: Portion of the band is sub-allocated for the various cellular phone services in Malaysia: ATUR 450, (E-TAC) 900, (AMPS/D.AMPS) 800, GSM 900 and GSM 1800 (previously known as PCN). All analogue services to be vacated by 2005.
456-459	FIXED MLA27 MOBILE 5.287 MLA29 MLA30	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA29: Portion of the band is sub-allocated for the various cellular phone services in Malaysia: ATUR 450, (E-TAC) 900, (AMPS/D.AMPS) 800, GSM 900 and GSM 1800 (previously known as PCN). All analogue services to be vacated by 2005. MLA30: Portion of these bands 456.00MHz to 459.00MHz and 460.00MHz to 470.00MHz are used for walkie-talkie (point-to-point)
459-460	FIXED MLA27 MOBILE 5.209 5.286A MLA29	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA29: Portion of the band is sub-allocated for the various cellular phone services in Malaysia: ATUR 450, (E-TAC) 900, (AMPS/D.AMPS) 800, GSM 900 and GSM 1800 (previously known as PCN). All analogue services to be vacated by 2005.
460-470	FIXED MLA27 MOBILE Meteorological-Satellite (space-to-Earth) 5.287 5.289 MLA29 MLA30	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA29: Portion of the band is sub-allocated for the various cellular phone services in Malaysia: ATUR 450, (E-TAC) 900, (AMPS/D.AMPS) 800, GSM 900 and GSM 1800 (previously known as PCN). All analogue services to be vacated by 2005. MLA30 Portion of these bands 456.00MHz to 459.00MHz and 460.00MHz to 470.00MHz are used for walkie-talkie (point-to-point)



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
470-512	BROADCASTING 5.149 5.294 5.296 5.300 5.302 5.304 5.306 5.311 5.312 5.291A	BROADCASTING Fixed Mobile 5.292 5.293	FIXED MOBILE BROADCASTING 5.291 5.298
512-585		BROADCASTING	
585-608		5.297	FIXED
608-610		RADIO ASTRONOMY Mobile-Satellite except aeronautical mobile- satellite (Earth-to-space)	MOBILE BROADCASTING RADIONAVIGATION 5.149 5.305 5.306 5.307
610-614			FIXED
614-790		BROADCASTING	MOBILE 5.317A
790-806	FIXED BROADCASTING 5.312 5.314 5.315 5.316 5.319 5.321	Fixed Mobile 5.293 5.309 5.311	BROADCASTING
806-862		FIXED	
862-890	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.319 5.323	MOBILE 5.317A BROADCASTING 5.317 5.318	5.149 5.305 5.306 5.307 5.311 5.320

Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
470-585	FIXED MLA27 MOBILE BROADCASTING MLA32 MLA33 MLA16	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA32: The frequency band 510 - 798 MHz is planned for Digital Terrestrial Television Broadcasting (DTTB) service. All Analogue Terrestrial Broadcasting Services to be phased out by 2015 MLA16: The bands 470MHz – 510 MHz is allocated for Mobile services. MLA33: The frequency band 470 - 518 MHz is allocated for Digital Mobile Service. SRSP Ref: 511M , 521 Part of the band from 470 – 510 MHz for mobile use All analogue services to be vacated by 2005
585-608	FIXED MOBILE BROADCASTING MLA32 RADIONAVIGATION 5.149	MLA32: The frequency band 510 - 798 MHz is planned for Digital Terrestrial Television Broadcasting (DTTB) service. All Analogue Terrestrial Broadcasting Services to be phased out by 2015. SRSP Ref: 521
608-610	FIXED MOBILE BROADCASTING MLA32 RADIONAVIGATION Radioastronomy 5.306 5.149	MLA32: The frequency band 510 - 798 MHz is planned for Digital Terrestrial Television Broadcasting (DTTB) service. All Analogue Terrestrial Broadcasting Services to be phased out by 2015. SRSP Ref: 521
610-614	FIXED MOBILE BROADCASTING MLA32 Radioastronomy 5.306 5.149 5.317A	MLA32: The frequency band 510 - 798 MHz is planned for Digital Terrestrial Television Broadcasting (DTTB) service. All Analogue Terrestrial Broadcasting Services to be phased out by 2015. SRSP Ref: 521
614-806	FIXED MOBILE BROADCASTING MLA32 5.149 5.311 5.317A	MLA32: The frequency band 510 - 798 MHz is planned for Digital Terrestrial Television Broadcasting (DTTB) service. All Analogue Terrestrial Broadcasting Services to be phased out by 2015. The band from 798 – 806 MHz for mobile use SRSP Ref: 521
806-890	FIXED MLA27 MOBILE BROADCASTING 5.149 5.320 5.317A	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. Bands 806 to 821 MHz and 851 to 866 MHz are allocated for Trunk Radio Services (TRS). May be used to accommodate digital trunk radio. Further possibility of allocating bands 870 to 876 MHz to digital trunk radio. All analogue services to be vacated by 2005. Frequency Spectrum 806 to 960 MHz may be used for IMT 2000 extension band SRSP Ref: 502M , 504.1



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
890-902	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 Radiolocation	FIXED MOBILE except aeronautical mobile 5.317A Radiolocation 5.318 5.325	FIXED MOBILE 5.317A BROADCASTING Radiolocation
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	
	5.323	5.325	5.327
942-960	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.323	FIXED MOBILE 5.317A	FIXED MOBILE 5.317A BROADCASTING 5.320
960-1215	AERONAUTICAL RADIONAVIGATION		
	5.328 5.328A		
1215-1240	RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.329 5.329A EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active)		
	5.329 5.330 5.331 5.332 5.329A		

Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
890-942	FIXED MLA27 MOBILE MLA27 BROADCASTING 5.317A Radiolocation MLA29	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA29: Portion of the band is sub-allocated for mobile services Radio paging systems in the band 929 – 932 MHz Frequency Spectrum 806 to 960 MHz may be used for IMT 2000 extension band
942-960	FIXED MLA27 MOBILE MLA27 5.317A BROADCASTING 5.320 MLA29	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA29: Portion of the band is sub-allocated for mobile services Frequency Spectrum 806 - 960 MHz may be used for IMT 2000 extension band
960-1215	AERONAUTICAL RADIONAVIGATION 5.328 5.328A	Bands 1164 - 1215 MHz may be allocated for SNS (Down-link) Bands allocated to DME/SSR
1215-1240	RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.329 5.329A EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) 5.330 5.331 5.332	Bands 1215 - 1300 MHz may be allocated for SNS (Down-link) Bands allocated to Radar Use



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
1240-1260		RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.329 5.329A EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) Amateur 5.330 5.331 5.332 5.334 5.335	
1260-1300		RADIOLOCATION EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIONAVIGATION SATELLITE (space-to-Earth) (space-to-space) 5.329 5.329A Amateur 5.282 5.330 5.331 5.334 5.335 5.335A	
1300-1350		AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION SATELLITE (Earth-to-space) 5.149 5.337A	
1350-1400	FIXED MOBILE RADIOLOCATION 5.149 5.338 5.339	RADIOLOCATION 5.149 5.334 5.339	
1400-1427		EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	
1427-1429		SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.341	
1429-1452	FIXED MOBILE except aeronautical mobile 5.341 5.342	FIXED MOBILE 5.343 5.341	



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
1240-1260	RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.329 5.329A EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) Amateur 5.330 5.331 5.332 5.334	Bands allocated to Radar Use.
1260-1300	RADIOLOCATION EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIONAVIGATION SATELLITE (space-to-Earth) (space-to-space) 5.329 5.329A Amateur 5.330 5.331 5.334 5.335 5.335A 5.282	Bands allocated to Radar Use.
1300-1350	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION SATELLITE (Earth-to-space) 5.149 5.337A	Bands 1300 - 1350 MHz may be allocated for SNS (Up-link)
1350-1370	RADIOLOCATION 5.149 5.339	Bands allocated to Radar Use.
1370-1400	RADIOLOCATION Space Research (passive) Earth Exploration-Satellite (passive) 5.149 5.339	Bands allocated to Radar. SRSP Ref: 510
1400-1427	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 MLA4	MLA4: For exclusive use of the Government of Malaysia.
1427-1429	SPACE OPERATION (Earth-to-space) MLA21 FIXED MOBILE except aeronautical mobile 5.341	MLA21: The space operation service in the band 1,427MHz to 1,429MHz is for telecommand.
1429-1452	FIXED MLA17 MOBILE 5.341	MLA17: The fixed service in the bands 1,429MHz to 1,452 MHz and 8,400MHz to 8,500MHz is for civil use only.

Frequency Band (MHz)	ITU Allocation
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	Region1	Region2	Region 3
1452-1492	FIXED MOBILE except aeronautical mobile BROADCASTING 5.345 5.347 BROADCASTING-SATELLITE 5.345 5.347 5.341 5.342	FIXED MOBILE 5.343 BROADCASTING 5.345 5.347 BROADCASTING-SATELLITE 5.345 5.347 5.341 5.344	
1492-1525	FIXED MOBILE except aeronautical mobile 5.341 5.342	FIXED MOBILE 5.343 MOBILE-SATELLITE (space-to-Earth) 5.348A 5.341 5.344 5.348	FIXED MOBILE 5.341 5.348A
1525-1530	SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.351A Earth Exploration-Satellite Mobile except aeronautical mobile 5.349 5.341 5.342 5.350 5.351 5.352A 5.354	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.351A Earth Exploration-Satellite Fixed Mobile 5.343 5.341 5.351 5.354	SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.351A Earth Exploration-Satellite Mobile 5.349 5.341 5.351 5.352A 5.354

Frequency	Malaysian Allocation	Notes/Future use
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Band (MHz)		
<p>1452-1492</p>	<p>FIXED</p> <p>MOBILE</p> <p>BROADCASTING 5.345</p> <p>BROADCASTING-SATELLITE 5.345 MLA34</p> <p>5.341</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>Reserved for Digital Audio Broadcasting (DAB)</p> <p>Existing Fixed services to be vacated</p> <p>SRSP Ref: 520b</p>
<p>1492-1525</p>	<p>FIXED</p> <p>MOBILE</p> <p>5.341 5.348A</p>	<p>Reserved for Mobile Services</p>
<p>1525-1530</p>	<p>SPACE OPERATION MLA18 (space-to-Earth)</p> <p>FIXED</p> <p>MOBILE-SATELLITE (space-to-Earth) 5.351A MLA34</p> <p>Earth Exploration-Satellite</p> <p>Mobile</p> <p>5.341 5.351 5.354</p>	<p>MLA18: The space operation service in the band between 1,525MHz to 1,535MHz is solely used for telemetering.</p> <p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p>



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
1530-1535	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.351A 5.353A Earth Exploration-Satellite Fixed Mobile except aeronautical mobile	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.351A 5.353A Earth Exploration-Satellite Fixed Mobile 5.343	
	5.341 5.342 5.351 5.354	5.341 5.351 5.354	
1535-1559		MOBILE-SATELLITE (space-to-Earth) 5.351A	
		5.341 5.351 5.353A 5.354 5.355 5.356 5.357A 5.359 5.357 5.362A	
1559-1610		AERONAUTICAL RADIONAVIGATION RADIONAVIGATION – SATELLITE (space-to-earth)(space-to-space) 5.329A	
		5.341 5.362B 5.362C 5.363	



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
1530-1535	SPACE OPERATION (space-to-Earth) MLA18 MOBILE-SATELLITE (space-to-Earth) 5.351A 5.353A MLA20 MLA34 Earth Exploration-Satellite Fixed Mobile 5.341 5.351 5.354	MLA18: The space operation service in the band between 1,525MHz to 1,535MHz is solely used for telemetering. MLA34: The Frequency Bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
1535-1559	MOBILE-SATELLITE (space-to-Earth) MLA34 5.341 5.351 5.353A 5.354 5.355 5.356 5.357 5.357A 5.359 5.362A	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
1559-1610	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION – SATELLITE (space-to-earth)(space-to-space) 5.329A 5.341 5.362B 5.362C 5.363	Bands allocated to GPS



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
1610-1610.6	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341 5.355 5.359 5.363 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	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Radiodetermination- Satellite (Earth-to-space) 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.372
1610.6-1613.8	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.355 5.359 5.363 5.364 5.366 5.367 5.368 5.369 5.371 5.372	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) 5.149 5.341 5.364 5.366 5.367 5.368 5.370 5.372	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION Radiodetermination- Satellite (Earth-to-space) 5.149 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.372
1613.8-1626.5	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-Satellite (space-to-Earth) 5.341 5.355 5.359 5.363 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) Mobile-Satellite (space-to-Earth) 5.341 5.364 5.365 5.366 5.367 5.368 5.370 5.372	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-Satellite (space-to-Earth) Radiodetermination- Satellite (Earth-to-space) 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369 5.372



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
1610-1610.6	MOBILE-SATELLITE (Earth-to-space) MLA34 5.351A AERONAUTICAL RADIONAVIGATION Radiodetermination-Satellite (Earth-to-space) 5.341 5.364 5.366 5.367 5.368 5.372	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
1610.6-1613.8	MOBILE-SATELLITE (Earth-to-space) MLA34 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	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
1613.8-1626.5	MOBILE-SATELLITE (Earth-to-space) MLA34 AERONAUTICAL RADIONAVIGATION Mobile-Satellite (space-to-Earth) Radiodetermination-Satellite (Earth-to-space) 5.341 5.364 5.365 5.366 5.367 5.368	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
1626.5-1656.5	MOBILE-SATELLITE (Earth-to-space) MLA34 5.351A 5.341 5.351 5.353A 5.354 5.355 5.357A 5.359 5.362A 5.375 5.376	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
1656.5-1660	MOBILE-SATELLITE (Earth-to-space) 5.351A MLA34 5.341 5.351 5.354 5.362B 5.374	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
1660-1660.5	MOBILE-SATELLITE (Earth-to-space) MLA34 RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.362A 5.376A	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
1660.5-1668.4	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379A MLA19	MLA19 The band between 1,660.5MHz to 1,690MHz is restricted for the use to the Government of Malaysia, may be permitted for the fixed and mobile except aeronautical mobile services. Sharing between Fixed and Mobile Services.



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
1668.4-1670	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY		
	5.149 5.341		
1670-1675	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE 5.380		
	5.341		



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
1668.4-1670	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.341 MLA19	MLA19: The band between 1,660.5MHz to 1,690MHz is restricted for the use to the Government of Malaysia, may be permitted for the fixed and mobile except aeronautical mobile services. Meteorological Aids Utilisation.
1670-1675	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE 5.380 5.341 MLA19	MLA19: The band between 1,660.5MHz to 1,690MHz is restricted for the use to the Government of Malaysia, may be permitted for the fixed and mobile except aeronautical mobile services.



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
1675 - 1690	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 MOBILE-SATELLITE (Earth-to-space) 5.341 5.377	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341
1690 - 1700	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) FIXED MOBILE except aeronautical mobile 5.289 5.341 5.382	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (Earth-to-space) 5.289 5.341 5.377 5.381	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) 5.289 5.341 5.381
1700 - 1710	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 5.289 5.341 5.377	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341 5.384
1710 - 1930	FIXED MOBILE 5.380 5.384A 5.388A 5.149 5.341 5.385 5.386 5.387 5.388		



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
1675 - 1690	<p>METEOROLOGICAL AIDS</p> <p>FIXED</p> <p>METEOROLOGICAL-SATELLITE (space-to-Earth)</p> <p>MOBILE except aeronautical mobile</p> <p>5.341 MLA19</p>	<p>Metrological-Satellite Utilisation</p> <p>MLA19: The band between 1,660.5MHz to 1,690MHz is restricted for the use to the Government of Malaysia, may be permitted for the fixed and mobile except aeronautical mobile services.</p>
1690 - 1700	<p>METEOROLOGICAL AIDS</p> <p>METEOROLOGICAL-SATELLITE (space-to-Earth)</p> <p>FIXED</p> <p>MOBILE except aeronautical mobile</p> <p>5.289 5.341 5.381 MLA39</p>	<p>MLA39: The frequency bands 1697.8 - 1699.2 MHz, 1705.08 - 1708.2 MHz, 2201.95 - 2210 MHz, 2221 - 2234 MHz and 7952 - 8500 MHz are allocated for Earth Exploration-Satellite service.</p>
1700 - 1710	<p>FIXED</p> <p>METEOROLOGICAL-SATELLITE (space-to-Earth)</p> <p>MOBILE except aeronautical mobile</p> <p>5.289 5.341 MLA39</p>	<p>MLA39: The frequency bands 1697.8 - 1699.2 MHz, 1705.08 - 1708.2 MHz, 2201.95 - 2210 MHz, 2221 - 2234 MHz and 7952 - 8500 MHz are allocated for Earth Exploration-Satellite service.</p> <p>Bands 1710 - 1785 MHz used by GSM 1800 [previously known as Personal Communications Networks (PCN)]</p>
1710 - 1930	<p>FIXED</p> <p>MOBILE 5.380,MLA40 5.384A 5.388A</p> <p>5.149 5.341 5.385 5.388</p>	<p>Bands 1710 - 1785 MHz and 1785 - 1880 MHz used by GSM 1800 [previously known as Personal Communications Networks (PCN)]</p> <p>The Bands 1885 – 2025 MHz is allocated for use by IMT 2000 terrestrial components</p> <p>Bands below 1885 MHz may be allocated as IMT 2000 extension bands in the future</p> <p>Bands 1880 - 1900 MHz are allocated for IMT DECT</p> <p>MLA40: The frequency band 1885 – 2025 Mhz and 2110 – 2200 Mhz is allocated for International Mobile Telecommunications Services (IMT 2000) in Malaysia SRSP Ref: 508M, 524M</p>



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
1930-1970	FIXED MOBILE 5.388A 5.388	FIXED MOBILE 5.388A Mobile-Satellite (Earth-to-space) 5.388	FIXED MOBILE 5.388A 5.388
1970-1980	FIXED MOBILE 5.388A 5.388		
1980-2010	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B 5.389F		
2010-2025	FIXED MOBILE 5.388A 5.388	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.388 5.389C 5.389D 5.389E 5.390	FIXED MOBILE 5.388A 5.388
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		



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
1930-1970	FIXED MOBILE 5.388A, MLA40 5.388	Bands 1885 to 1980 MHz are allocated for IMT 2000 Terrestrial components MLA40: The frequency band 1885 – 2025 MHz and 2110 – 2200 MHz are allocated for International Mobile Telecommunications Services (IMT 2000) in Malaysia
1970-1980	FIXED MOBILE 5.388A MLA20, MLA40 5.388	. Bands 1885 to 1980 are allocated for IMT 2000 Terrestrial components MLA40: The frequency band 1885 – 1980 MHz and 2110 – 2200 MHz is allocated for International Mobile Telecommunications Services (IMT 2000) in Malaysia
1980-2010	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A MLA34,MLA40 5.388 5.389A 5.389B	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Bands 1980 to 2010 MHz are allocated for IMT 2000 Satellite components MLA40: The frequency band 1885 – 2025 MHz and 2110 – 2200 MHz is allocated for International Mobile Telecommunications Services (IMT 2000) in Malaysia
2010-2025	FIXED MOBILE 5.388A 5.388 MLA40	Bands 2010 to 2025 MHz are allocated for IMT 2000 Terrestrial components MLA40: The frequency band 1885 – 2025 MHz and 2110 – 2200 MHz is allocated for International Mobile Telecommunications Services (IMT 2000) in Malaysia SRSP Ref: 524M
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	Earth Exploration Satellite (EES) sharing with Fixed and Mobile Services.



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
2110-2120	FIXED MOBILE 5.388A SPACE RESEARCH (deep space) (Earth-to-space) 5.388		
2120-2160	FIXED MOBILE 5.388A 5.388	FIXED MOBILE 5.388A Mobile-Satellite (space-to-Earth) 5.388	FIXED MOBILE 5.388A 5.388
2160-2170	FIXED MOBILE 5.388A 5.388 5.392A	FIXED MOBILE 5.388A MOBILE-SATELLITE (space-to-Earth) 5.388 5.389C 5.389D 5.389E 5.390	FIXED MOBILE 5.388A 5.388
2170-2200	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A 5.389F 5.392A		
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		



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
2110-2120	FIXED MOBILE MLA40 5.388A SPACE RESEARCH (deep space) (Earth-to-space) 5.388	Bands 2110 - 2170 MHz are allocated for IMT 2000 Terrestrial components. MLA40: The frequency band 1885 – 2025 MHz and 2110 – 2200 Mhz is allocated for International Mobile Telecommunications Services (IMT 2000) in Malaysia
2120-2160	FIXED MOBILE 5.388A MLA40 5.388	Bands 2110 - 2170 MHz are allocated for IMT 2000 Terrestrial components. MLA40: The frequency band 1885 – 2025 MHz and 2110 – 2200 MHz is allocated for International Mobile Telecommunications Services (IMT 2000) in Malaysia
2160-2170	FIXED MOBILE 5.388A MLA40 5.388	Bands 2110 - 2170 MHz are allocated for IMT 2000 Terrestrial components. MLA40: The frequency band 1885 – 2025 MHz and 2110 – 2200 MHz are allocated for International Mobile Telecommunications Services (IMT 2000) in Malaysia
2170-2200	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A MLA34, MLA40 5.388 5.389A	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Bands 2170 - 2200 MHz are allocated for IMT 2000 Satellite components MLA40: The frequency band 1885- 2025MHz and 2110 - 2200 MHz are allocated for International Mobile Telecommunications Services (IMT 2000) in Malaysia.
2200-2290	SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) MLA39 FIXED MOBILE 5.391 SPACE RESEARCH (space-to-Earth) (space-to-space) 5.392	MLA39: The frequency bands 1697.8 - 1699.2 MHz, 1705.08 - 1708.2 MHz, 2201.95 - 2210 MHz, 2221 - 2234 MHz and 7952 - 8500 MHz are allocated for Earth Exploration-Satellite service.



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
2290-2300	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)		
2300-2450	FIXED MOBILE Amateur Radiolocation 5.150 5.282 5.395	FIXED MOBILE RADIOLOCATION Amateur 5.150 5.282 5.393 5.394 5.396	
2450-2483.5	FIXED MOBILE Radiolocation 5.150 5.397	FIXED MOBILE RADIOLOCATION 5.150 5.394	
2483.5-2500	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A Radiolocation 5.150 5.371 5.397 5.398 5.399 5.400 5.402	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) 5.351A RADIOLOCATION Radiodetermination-Satellite (space-to-Earth) 5.398 5.150 5.400 5.402



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
2290-2300	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	
2300-2450	FIXED MOBILE RADIOLOCATION Amateur 5.150 5.282 5.396 MLA27 MLA28 MLA34	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA28: Band is used for Industrial, Scientific and Medical (ISM) purposes. MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
2450-2483.5	FIXED MOBILE RADIOLOCATION 5.150 MLA27 MLA28	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA28: Band is used for Industrial, Scientific and Medical (ISM) purposes.
2483.5-2500	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A MLA34 RADIOLOCATION Radiodetermination-Satellite (space-to-Earth) 5.398 5.150 5.402 MLA28	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information MLA28: Band is used for Industrial, Scientific and Medical (ISM) purposes



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
2500-2520	FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE 5.351A (space-to-earth) 5.403 5.405 5.4075.412 5.414	FIXED 5.409 5.411 FIXED SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (space-to-earth) 5.403 5.351A 5.404 5.407 5.414 5.415A	
2520-2535	FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416	FIXED 5.409 5.411 FIXED SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416	FIXED 5.409 5.411 FIXED SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.403 5.415A
2535-2655	5.339 5.403 5.405 5.412 5.418 5.418B 5.418C	5.339 5.403 5.418B 5.418C	FIXED 5.409 5.411 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.339 5.418 5.418A 5.418B 5.418C



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
2500-2520	FIXED 5.409 5.411 MLA38 FIXED SATELLITE (space-to-Earth) 5.415 MLA34 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (space-to-earth) 5.351A 5.403 MLA34 5.404 5.407 5.414 5.415A	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in the Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>MLA38: The frequency band 2504 – 2688 MHz is planned for IMT 2000 extension band</p> <p>SRSP Ref: 523</p>
2520-2535	FIXED 5.409 5.411 MLA38 FIXED SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING- SATELLITE 5.413 5.416 5.403 5.415A	<p>MLA38: The frequency band 2504 – 2688 MHz is planned for IMT 2000 extension band</p> <p>SRSP Ref: 523</p>
2535-2655	FIXED 5.409 5.411 MLA38 MOBILE except aeronautical mobile 5.384A BROADCASTING SATELLITE 5.413 5.416 MLA34 5.339 5.418 5.418A 5.418B 5.418C	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>MLA38: The frequency band 2504 – 2688 MHz is planned for IMT 2000 extension band</p> <p>SRSP Ref: 523</p>



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
2655-2670	FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A BROADCASTING SATELLITE 5.413 5.416 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive)	FIXED 5.409 5.411 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)	FIXED 5.409 5.411 FIXED-SATELLITE (Earth-to-space) 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 5.412 5.420	5.149 5.420	5.149 5.420
2670-2690	FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-to-space) 5.351A Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive)	FIXED 5.409 5.411 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-to-space) 5.351A Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive)	FIXED 5.409 5.411 FIXED-SATELLITE (Earth-to-space) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-to-space) 5.351A Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive)
	5.149 5.419 5.420	5.149 5.419 5.420	5.149 5.419 5.420 5.420A



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
2655-2670	FIXED 5.409 5.411 MLA38 FIXED-SATELLITE (Earth-to-space) 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 5.420	MLA38: The frequency band 2504 – 2688 MHz is planned for IMT 2000 extension band SRSP Ref: 523
2670-2690	FIXED 5.409 5.411 MLA38 FIXED-SATELLITE (Earth-to-space) 5.415 MLA34 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-to-space) 5.351A MLA34 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive)	MLA38: The frequency band 2504 – 2688 MHz is planned for IMT 2000 extension band MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information SRSP Ref: 523
	5.149 5.419 5.420	



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
2690-2700	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.421 5.422		
2700-2900	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424		
2900-3100	RADIONAVIGATION 5.426 Radiolocation 5.425 5.427		
3100-3300	RADIOLOCATION Earth Exploration-Satellite (active) Space Research (active) 5.149 5.428		
3300-3400	RADIOLOCATION 5.149 5.429 5.430	RADIOLOCATION Amateur Fixed Mobile 5.149 5.430	RADIOLOCATION Amateur 5.149 5.429



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
2690-2700	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) FIXED MOBILE except aeronautical mobile 5.340 5.422	Reserved for EES
2700-2900	AERONAUTICAL RADIONAVIGATION 5.337 MLA4 Radiolocation 5.423 MLA4	MLA4: For exclusive use of the Government of Malaysia. Applicable to radar.
2900-3100	RADIONAVIGATION 5.426 Radiolocation MLA4 5.425 5.427 MLA4	MLA4: For exclusive use of the Government of Malaysia. Applicable to radar.
3100-3300	RADIOLOCATION MLA4 Earth Exploration-Satellite (active) Space Research (active) 5.149 MLA4	MLA4: For exclusive use of the Government of Malaysia. Applicable to radar.
3300-3400	RADIOLOCATION MLA4 FIXED MOBILE Amateur 5.149 5.429 MLA4	MLA4: For exclusive use of the Government of Malaysia. Marked for Special Events. Also Applicable to radar.



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
3400-3500	FIXED FIXED SATELLITE (space-to-Earth) Mobile Radiolocation	FIXED FIXED SATELLITE (space-to-Earth) Amateur Mobile Radiolocation 5.433 5.282 5.432	
3500-3600	5.431	FIXED FIXED-SATELLITE (space-to-Earth)	
3600-3700	FIXED FIXED-SATELLITE (space-to-Earth) Mobile	MOBILE except aeronautical mobile Radiolocation 5.433 5.435	
3700-4200		FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile	
4200-4400		AERONAUTICAL RADIONAVIGATION 5.438 5.439 5.440	
4400-4500		FIXED MOBILE	
4500-4800		FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE	



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
3400-3500	FIXED MLA35 FIXED SATELLITE (space-to-Earth) MLA34 Amateur Mobile Radiolocation 5.433 5.282	<p>MLA35: The frequency bands 3400 - 3700 MHz, 10000 - 10700 MHz is allocated for Fixed Wireless Access (FWA) service.</p> <p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>SRSP Ref: 507a</p>
3500-3700	FIXED MLA35 FIXED-SATELLITE (space-to-Earth) MLA34 MOBILE except aeronautical mobile Radiolocation 5.433	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>MLA35: The frequency bands 3400 - 3700 MHz, 10000 - 10700 MHz is allocated for Fixed Wireless Access (FWA) service.</p> <p>Existing Radiolocation to be vacated (1985) SRSP Ref: 507a</p>
3700-4200	FIXED FIXED-SATELLITE (space-to-Earth) MLA34 MOBILE except aeronautical mobile	<p>For Satellite downlink & sharing with fixed stations</p> <p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p>
4200-4400	AERONAUTICAL RADIONAVIGATION 5.438 5.440	<p>For Aeronautical Service.</p>
4400-4500	FIXED MOBILE	<p>Bands to be shared between Fixed and Mobile Services.</p>
4500-4800	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE	<p>For sharing between Fixed and Mobile Services.</p>



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
4800-4990	FIXED MOBILE 5.442 Radio Astronomy 5.149 5.339 5.443		
4990-5000	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space Research (passive) 5.149		
5000-5150	AERONAUTICAL RADIONAVIGATION 5.367 5.443A 5.443B 5.444 5.444A		
5150-5250	AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (Earth-to-space) 5.447A 5.446 5.447 5.447B 5.447C		
5250-5255	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D 5.448 5.448A		
5255-5350	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.448 5.448A		
5350-5460	AERONAUTICAL RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) 5.448B Radiolocation		
5460-5470	RADIONAVIGATION 5.449 Radiolocation		
5470-5650	MARITIME RADIONAVIGATION Radiolocation 5.450 5.451 5.452		
5650-5725	RADIOLOCATION Amateur Space Research (deep space) 5.282 5.451 5.453 5.454 5.455		

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Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
4800-4990	FIXED MOBILE 5.442 Radio Astronomy 5.149 5.339	For sharing between Fixed and Mobile Services.
4990-5000	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space Research (passive) 5.149	For sharing between Fixed and Mobile Services.
5000-5150	AERONAUTICAL RADIONAVIGATION 5.367 5.443A 5.443B 5.444 5.444A MLA34	Bands 5000 - 5010 MHz may be allocated for SNS and MLS (Up-link) Bands 5010 - 5030 MHz may be allocated for SNS and MLS (Down-link) MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
5150-5250	AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE SERVICE (Earth-to-space) 5.447A MLA34 5.446 5.447B 5.447C	Bands 5150 - 5350 MHz may be used by Hiperlan or other wireless application. MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
5250-5255	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D 5.448A	Bands 5250 - 5350 MHz may be used by Hiperlan or other wireless application.
5255-5350	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.448A	Bands 5250 - 5350 MHz may be used by Hiperlan or other wireless application.
5350-5460	AERONAUTICAL RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) 5.448B Radiolocation	Applicable to radar.
5460-5470	RADIONAVIGATION 5.449 Radiolocation MLA4	MLA4: For exclusive use of the Government of Malaysia. Applicable to radar.
5470-5650	MARITIME RADIONAVIGATION Radiolocation MLA4 5.452	MLA4: For exclusive use of the Government of Malaysia. For Special Events.
5650-5725	RADIOLOCATION FIXED MOBILE Amateur Space Research (deep space) 5.282 5.453	For Special Events.



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
5725-5830	FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455 4.456	RADIOLOCATION Amateur 5.150 5.453 5.455	
5830-5850	FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.451 5.453 5.455 4.456	RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.453 5.455	
5850-5925	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.150	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Amateur Radiolocation 5.150	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Radiolocation 5.150
5925-6700	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.149 5.440 5.458		
6700-7075	FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth)5.441 MOBILE 5.458 5.458A 5.458B 5.458C		
7075-7250	FIXED MOBILE 5.458 5.459 5.460		
7250-7300	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 5.461		

MALAYSIAN DRAFT SPECTRUM PLAN



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
5725-5830	RADIOLOCATION FIXED MOBILE Amateur 5.150 5.453 MLA27 MLA28	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA28: Band is used for Industrial, Scientific and Medical (ISM) purposes Marked for Special Events
5830-5850	RADIOLOCATION FIXED MOBILE Amateur Amateur-satellite (space-to-Earth) 5.150 5.453 MLA27 MLA28	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA28: Band is used for Industrial, Scientific and Medical (ISM) purposes. Marked for Special Events
5850-5925	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Radiolocation 5.150 MLA27 MLA28	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia. MLA28: Band is used for Industrial, Scientific and Medical (ISM) purposes
5925-6700	FIXED FIXED-SATELLITE (Earth-to-space) MLA34 MOBILE 5.149 5.440 5.458	Bands 5925 to 6425 MHz may be allocated for ESV MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information SRSP Ref: 510 , 512 Part of band allocated for Satellite uplink. Part of band also allocated for Fixed Service.
6700-7075	FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MLA34 MOBILE 5.458 5.458A 5.458B 5.458C	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information (For satellite downlink) SRSP Ref: 513
7075-7250	FIXED MOBILE 5.458 5.460 MLA22	MLA22: The fixed service in the band 7,075MHz to 7,250MHz is may be allocated to the Government of Malaysia on a restricted basis. SRSP Ref: 513
7250-7300	FIXED FIXED-SATELLITE (space-to-Earth) MLA34 MOBILE 5.461	Existing Portable OB link. MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information (For Satellite Downlink). SRSP Ref: 514



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
7300-7450	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461		
7450-7550	FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461A		
7550-7750	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile		
7750-7850	FIXED MOBILE except aeronautical mobile METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B		
7850-7900	FIXED MOBILE except aeronautical mobile		
7900-8025	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.461		
8025-8175	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A		



Frequency Band (MHz)	National	Notes/Future use
7300-7450	FIXED FIXED-SATELLITE (space-to-Earth) MLA34 MOBILE except aeronautical mobile 5.461	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information SRSP Ref: 514 , 515
7450-7550	FIXED FIXED-SATELLITE (space-to-Earth) MLA34 METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461A	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information SRSP Ref: 515
7550-7750	FIXED FIXED-SATELLITE (space-to-Earth) MLA34 MOBILE except aeronautical mobile	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information SRSP Ref: 515
7750-7850	FIXED MOBILE except aeronautical mobile METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B	Allocated for Fixed use SRSP Ref: 516
7850-7900	FIXED MOBILE except aeronautical mobile	Allocated for Fixed use SRSP Ref: 516
7900-8025	FIXED FIXED-SATELLITE (Earth-to-space) MLA34 MLA39 MOBILE 5.461	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information MLA39: The frequency bands 1697.8 - 1699.2 MHz, 1705.08 - 1708.2 MHz, 2201.95 - 2210 MHz, 2221 - 2234 MHz and 7952 - 8500 MHz are allocated for Earth Exploration-Satellite service. SRSP Ref: 516
8025-8175	EARTH EXPLORATION-SATELLITE (space-to-Earth) MLA39 FIXED FIXED-SATELLITE (Earth-to-space) MLA34 MOBILE 5.463 5.462A	MLA39: The frequency bands 1697.8 - 1699.2 MHz, 1705.08 - 1708.2 MHz, 2201.95 - 2210 MHz, 2221 - 2234 MHz and 7952 - 8500 MHz are allocated for Earth Exploration-Satellite service MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information SRSP Ref: 516



Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
8175-8215		EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	
8215-8400		EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	
8400-8500		FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.465 5.466 5.467	
8500-8550		RADIOLOCATION 5.468 5.469	
8550-8650		RADIOLOCATION SPACE RESEARCH (active) EARTH EXPLORATION-SATELLITE (active) 5.468 5.469 5.469A	
8650-8750		RADIOLOCATION 5.468 5.469	



Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
8175-8215	EARTH EXPLORATION-SATELLITE (space-to-Earth) MLA39 FIXED FIXED-SATELLITE (Earth-to-space) MLA34 METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	MLA39: The frequency bands 1697.8 - 1699.2 MHz, 1705.08 - 1708.2 MHz, 2201.95 - 2210 MHz, 2221 - 2234 MHz and 7952 - 8500 MHz are allocated for Earth Exploration-Satellite service MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information SRSP Ref: 516
8215-8400	EARTH EXPLORATION-SATELLITE (space-to-Earth) MLA39 FIXED FIXED-SATELLITE (Earth-to-space) MLA34 MOBILE 5.463 5.462A	MLA39: The frequency bands 1697.8 - 1699.2 MHz, 1705.08 - 1708.2 MHz, 2201.95 - 2210 MHz, 2221 - 2234 MHz and 7952 - 8500 MHz are allocated for Earth Exploration-Satellite service MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information SRSP Ref: 516 , 517
8400-8500	FIXED MLA17 MOBILE except aeronautical mobile Space Research (space-to-Earth) 5.465 5.466 MLA39	MLA17: The fixed service in the bands 1,429MHz to 1,452 MHz and 8,400MHz to 8,500MHz is for civil use only. MLA39: The frequency bands 1697.8 - 1699.2 MHz, 1705.08 - 1708.2 MHz, 2201.95 - 2210 MHz, 2221 - 2234 MHz and 7952 - 8500 MHz are allocated for Earth Exploration-Satellite service SRSP Ref: 517
8500-8550	RADIOLOCATION 5.468	Reserved for Special Events.
8550-8650	RADIOLOCATION SPACE RESEARCH (active) EARTH EXPLORATION-SATELLITE (active) 5.468 5.469A	Bands allocated for EES.
8650-8750	RADIOLOCATION 5.468	Bands allocated for Radiolocation

Frequency Band (MHz)	ITU Allocation		
	Region1	Region2	Region 3
8750-8850		RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 5.471	
8850-9000		RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473	
9000-9200		AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.471	
9200-9300		RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474	
9300-9500		RADIONAVIGATION 5.476 Radiolocation 5.427 5.474 5.475	
9500-9800		RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) EARTH EXPLORATION-SATELLITE (active) 5.476A	
9800-10000		RADIOLOCATION Fixed 5.477 5.478 5.479	

Frequency Band (MHz)	Malaysian Allocation	Notes/Future use
8750-8850	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470	Bands allocated for Doppler ARNS service
8850-9000	RADIOLOCATION MARITIME RADIONAVIGATION 5.472	Bands allocated for Maritime and Radiolocation
9000-9200	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation	For Aeronautical use.
9200-9300	RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.474	Bands allocated for Maritime and Radiolocation
9300-9500	RADIONAVIGATION 5.476 Radiolocation 5.427 5.474 5.475	Bands allocated for Radionavigation
9500-9800	RADIOLOCATION MLA4 RADIONAVIGATION SPACE RESEARCH (active) EARTH EXPLORATION-SATELLITE (active) 5.476A	MLA4: For exclusive use of the Government of Malaysia. Bands allocated for Radar, sharing with EES.
9800-10000	RADIOLOCATION MLA4 FIXED 5.477 5.479	MLA4: For exclusive use of the Government of Malaysia. Bands allocated for Radar Use, sharing with Fixed.



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
10-10.45	FIXED MOBILE RADIOLOCATION Amateur 5.479	RADIOLOCATION Amateur 5.479 5.480	FIXED MOBILE RADIOLOCATION Amateur 5.479
10.45-10.5	RADIOLOCATION Amateur Amateur-Satellite 5.481		
10.5-10.55	FIXED MOBILE Radiolocation	FIXED MOBILE RADIOLOCATION	
10.55-10.6	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		
10.68-10.7	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.483		



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
10-10.45	FIXED MLA35 MOBILE RADIOLOCATION Amateur 5.479 MLA35	MLA35: The frequency bands 3400 - 3700 MHz, 10000 - 10700 MHz are allocated for Fixed Wireless Access (FWA) service. SRSP Ref: 310.5 , 507b
10.45-10.5	RADIOLOCATION Amateur Amateur-Satellite MLA35	MLA35: The frequency bands 3400 – 3700 MHz, 10000 – 10700 MHz are allocated for Fixed Wireless Access (FWA) service. SRSP Ref: 310.5 , 507b
10.5-10.55	FIXED MLA35 MOBILE RADIOLOCATION	MLA35: The frequency bands 3400 – 3700 MHz, 10000 – 10700 MHz are allocated for Fixed Wireless Access (FWA) service. SRSP Ref: 310.5 , 507b
10.55-10.6	FIXED MLA35 MOBILE except aeronautical mobile Radiolocation	MLA35: The frequency bands 3400 – 3700 MHz, 10000 – 10700 MHz are allocated for Fixed Wireless Access (FWA) service. SRSP Ref: 310.5 , 507b
10.6-10.68	EARTH EXPLORATION-SATELLITE (passive) FIXED MLA35 MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482	Bands 10.6 – 10.7 GHz allocated to ESS MLA35: The frequency bands 3400 – 3700 MHz, 10000 – 10700 MHz are allocated for Fixed Wireless Access (FWA) service. SRSP Ref: 310.5 , 507b
10.68-10.7	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 MLA35	MLA35: The frequency bands 3400 – 3700 MHz, 10000 – 10700 MHz are allocated for Fixed Wireless Access (FWA) service. SRSP Ref: 507b



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
10.7-11.7	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 5.484A (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 5.484A MOBILE except aeronautical mobile	
11.7-12.1	FIXED BROADCASTING BROADCASTING-SATELLITE Mobile except aeronautical mobile	FIXED 5.486 FIXED-SATELLITE (space-to-Earth) 5.484A Mobile except aeronautical mobile 5.485 5.488	FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE
12.1-12.2		FIXED-SATELLITE (space-to-Earth) 5.484A 5.485 5.488 5.489	5.487 5.487A 5.492
12.2-12.5	5.487 5.487A 5.492	FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE	FIXED MOBILE except aeronautical mobile BROADCASTING
12.5-12.7		FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.488 5.490 5.492 5.487A	5.484A 5.487 5.491 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A MOBILE except aeronautical mobile
12.7-12.75	5.494 5.495 5.496	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE except aeronautical mobile	BROADCASTING 5.493



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
10.7-11.7	<p>FIXED</p> <p>FIXED-SATELLITE (space-to-Earth) 5.441 5.484A MLA34</p> <p>MOBILE except aeronautical mobile</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>Possibility of band segmentation to accommodate FSS (Ku band)</p> <p>Bands from 10.9 – 11.7 GHz allocated to Fixed services, to be vacated by 2003.</p> <p>SRSP Ref: 518</p>
11.7-12.2	<p>FIXED</p> <p>MOBILE except aeronautical mobile</p> <p>BROADCASTING</p> <p>BROADCASTING-SATELLITE MLA34</p> <p>5.487 5.487A 5.492</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p>
12.2-12.5	<p>FIXED</p> <p>MOBILE except aeronautical mobile</p> <p>BROADCASTING</p> <p>5.484A 5.487 5.491</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information.</p> <p>Bands 12.2 - 12.5 GHz may be allocated for Fixed Satellite Services (downlink).</p>
12.5-12.75	<p>FIXED</p> <p>FIXED-SATELLITE (space-to-Earth) MLA34</p> <p>MOBILE except aeronautical mobile</p> <p>BROADCASTING – SATELLITE 5.493</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>Bands 12.2 - 12.5 GHz may be allocated for Fixed Satellite Services (downlink).</p>



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
12.75-13.25	FIXED FIXED-SATELLITE (Earth-to-space) 5.441 MOBILE Space Research (deep space) (space-to-Earth)		
13.25-13.4	AERONAUTICAL RADIONAVIGATION 5.497 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) 5.498A 5.499		
13.4-13.75	RADIOLOCATION EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH 5.501A Standard Frequency and Time Signal-Satellite (Earth-to-space) 5.499 5.500 5.501 5.501B		
13.75-14	FIXED-SATELLITE (Earth-to-space) 5.484A RADIOLOCATION Standard Frequency and Time Signal-Satellite (Earth-to-space) Space Research 5.499 5.500 5.501 5.502 5.503 5.503A		
14-14.25	FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space Research 5.505		
14.25-14.3	FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space Research 5.505 5.508 5.509		



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
12.75-13.25	FIXED FIXED-SATELLITE (Earth-to-space) 5.441 MOBILE Space Research (Deep space) (space-to-Earth)	Bands for sharing between Fixed Services and FSS
13.25-13.4	AERONAUTICAL RADIONAVIGATION 5.497 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) 5.498A	Band sharing between EES and Aeronautical Radionavigation, (Doppler navigation aids).
13.4-13.75	RADIOLOCATION EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH 5.501A MOBILE Standard Frequency and Time Signal-Satellite (Earth-to-space) 5.500 5.501B	For EES use.
13.75-14	FIXED-SATELLITE (Earth-to-space) 5.484A MLA34 FIXED MOBILE RADIOLOCATION Standard Frequency and Time Signal-Satellite (Earth-to-space) Space Research 5.500 5.502 5.503 5.503A	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information. Fixed link to be vacated.
14-14.25	FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 MLA34 RADIONAVIGATION 5.504 FIXED Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space Research 5.505	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information. Fixed link to be vacated.
14.25-14.3	FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 MLA34 RADIONAVIGATION 5.504 FIXED Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space Research 5.505	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Fixed links to be vacated



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
14.3-14.4	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-Satellite	FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-Satellite	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-Satellite
14.4-14.47	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 MOBILE except aeronautical mobile Mobile-Satellite (Earth-to-space) except aeronautical mobile-satellite Space Research (space-to-Earth)		
14.47-14.5	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 MOBILE except aeronautical mobile Mobile-Satellite (Earth-to-space) except aeronautical mobile-satellite Radio Astronomy 5.149		
14.5-14.8	FIXED FIXED-SATELLITE (Earth-to-space) 5.510 MOBILE Space Research		
14.8-15.35	FIXED MOBILE Space Research 5.339		



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
14.3-14.4	<p>FIXED</p> <p>FIXED-SATELLITE (Earth-to-space) 5.506 MLA34</p> <p>MOBILE except aeronautical mobile</p> <p>Mobile-Satellite (Earth-to-space) except aeronautical mobile-satellite</p> <p>Radionavigation-Satellite</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>Bands shared between Satellite services and Fixed Services</p>
14.4-14.47	<p>FIXED</p> <p>FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 MLA34</p> <p>MOBILE except aeronautical mobile</p> <p>Mobile-Satellite (Earth-to-space) except aeronautical mobile-satellite</p> <p>Space Research (space-to-Earth)</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>Bands shared between Satellite services and Fixed Services</p> <p>SRSP Ref: 526</p>
14.47-14.5	<p>FIXED</p> <p>FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 MLA34</p> <p>MOBILE except aeronautical mobile</p> <p>Mobile-Satellite (Earth-to-space) except aeronautical mobile-satellite</p> <p>Radio Astronomy</p> <p>5.149</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>Bands shared between Satellite services and Fixed Services</p> <p>SRSP Ref: 526</p>
14.5-14.8	<p>FIXED</p> <p>FIXED-SATELLITE (Earth-to-space) 5.510</p> <p>MOBILE</p> <p>Space Research</p>	<p>Bands shared between Fixed services and applicable to Feeder links for BSS</p> <p>SRSP Ref: 526,</p>
14.8-15.35	<p>FIXED</p> <p>MOBILE</p> <p>Space Research</p> <p>5.339</p>	<p>Used for Fixed Service.</p> <p>SRSP Ref: 526,</p>



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
15.35-15.4	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.511		
15.4-15.43	AERONAUTICAL RADIONAVIGATION 5.511D		
15.43-15.63	FIXED-SATELLITE (Earth-to-space) 5.511A AERONAUTICAL RADIONAVIGATION 5.511C		
15.63-15.7	AERONAUTICAL RADIONAVIGATION 5.511D		
15.7-16.6	RADIOLOCATION 5.512 5.513		
16.6-17.1	RADIOLOCATION Space Research (deep space) (Earth-to-space) 5.512 5.513		
17.1-17.2	RADIOLOCATION 5.512 5.513		
17.2-17.3	RADIOLOCATION EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) 5.512 5.513 5.513A		
17.3-17.7	FIXED-SATELLITE (Earth-to-space) 5.516 Radiolocation 5.514	FIXED-SATELLITE (Earth-to-space) 5.516 BROADCASTING-SATELLITE Radiolocation 5.514 5.515 5.517	FIXED-SATELLITE (Earth-to-space) 5.516 Radiolocation 5.514



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
15.35-15.4	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	For EES use.
15.4-15.43	AERONAUTICAL RADIONAVIGATION 5.511D	Bands allocated to Radionavigation for Aeronautical use
15.43-15.63	FIXED-SATELLITE (Earth-to-space) 5.511A AERONAUTICAL RADIONAVIGATION 5.511C	For Aeronautical Use
15.63-15.7	AERONAUTICAL RADIONAVIGATION 5.511D	For Aeronautical Use
15.7-16.6	RADIOLOCATION FIXED MOBILE 5.512	For sharing between Fixed and Mobile Services.
16.6-17.1	RADIOLOCATION FIXED MOBILE Space Research (deep space) (Earth-to-space) 5.512	For sharing between Fixed and Mobile Services.
17.1-17.2	RADIOLOCATION FIXED MOBILE 5.512	For sharing between Fixed and Mobile Services.
17.2-17.3	RADIOLOCATION FIXED MOBILE EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) 5.512 5.513A	For sharing between Fixed and Mobile Services.
17.3-17.7	FIXED-SATELLITE (Earth-to-space) 5.516 MLA34 Radiolocation	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
17.7-17.8	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.516 MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.516 BROADCASTING-SATELLITE Mobile 5.518 5.515 5.517	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.516 MOBILE
17.8-18.1		FIXED FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.516 MOBILE	
18.1-18.4		FIXED FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.520 MOBILE 5.519 5.521	
18.4-18.6		FIXED FIXED-SATELLITE (space-to-Earth) 5.484A MOBILE	
18.6-18.8	FIXED FIXED-SATELLITE (space-to-Earth) 5.522B MOBILE except aeronautical mobile EARTH EXPLORATION-SATELLITE (passive) Space Research (passive) 5.522A 5.522C	EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.522B MOBILE except aeronautical mobile SPACE RESEARCH (passive) 5.522A	FIXED FIXED-SATELLITE (space-to-Earth) 5.522B MOBILE except aeronautical mobile EARTH EXPLORATION-SATELLITE (passive) Space Research (passive) 5.522A



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
17.7-18.1	<p>FIXED</p> <p>FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.516 MLA34</p> <p>MOBILE</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>Bands 17.7 - 22.2 GHz may be allocated for VSAT (Down-link) Ka-band</p> <p>A portion of the band is allocated for Fixed Links</p> <p>SRSP Ref: 527</p>
18.1-18.4	<p>FIXED</p> <p>FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.520 MLA34</p> <p>MOBILE</p> <p>5.519</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>Bands 17.7 - 22.2 GHz may be allocated for VSAT (Down-link) Ka-band.</p> <p>A portion of the band is allocated for Fixed Links</p> <p>SRSP Ref: 527</p>
18.4-18.6	<p>FIXED</p> <p>FIXED-SATELLITE (space-to-Earth) 5.484A MLA34</p> <p>MOBILE</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>Bands 17.7 - 22.2 GHz may be allocated for VSAT (Down-link) Ka-band.</p> <p>A portion of the band is allocated for Fixed Links</p> <p>SRSP Ref: 527</p>
18.6-18.8	<p>FIXED</p> <p>FIXED-SATELLITE (space-to-Earth) 5.522B MLA34</p> <p>MOBILE except aeronautical mobile</p> <p>EARTH EXPLORATION-SATELLITE (passive)</p> <p>Space Research (passive)</p> <p>5.522A</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>Bands 17.7 - 22.2 GHz may be allocated for VSAT (Down-link) Ka-band.</p> <p>A portion of the band is allocated for Fixed Links</p> <p>Bands 18.6 - 18.8 GHz may be allocated to EES</p> <p>SRSP Ref: 527</p>



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
18.8-19.3	FIXED FIXED-SATELLITE (space-to-Earth) 5.523A MOBILE		
19.3-19.7	FIXED-SATELLITE (space-to-Earth) (Earth-to space) 5.523B 5.523C 5.523D 5.523E MOBILE		
19.7-20.1	FIXED-SATELLITE (space-to-Earth) 5.484A Mobile-Satellite (space-to-Earth) 5.524	FIXED-SATELLITE (space-to-Earth) 5.484A MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528 5.529	FIXED-SATELLITE (space-to-Earth) 5.484A Mobile-Satellite (space-to-Earth) 5.524
20.1-20.2	FIXED-SATELLITE (space-to-Earth) 5.484A MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528		
20.2-21.2	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard Frequency and Time Signal (space-to-Earth) 5.524		
21.2-21.4	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)		
21.4-22	FIXED MOBILE BROADCASTING-SATELLITE 5.530	FIXED MOBILE	FIXED MOBILE BROADCASTING-SATELLITE 5.530 5.531
22-22.21	FIXED MOBILE except aeronautical mobile 5.149		



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
18.8-19.3	FIXED FIXED-SATELLITE (space-to-Earth) 5.523A MLA34 MOBILE	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information A portion of the band is allocated for Fixed Links SRSP Ref: 527
19.3-19.7	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to space) 5.523B 5.523C 5.523D 5.523E MLA34 MOBILE	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information A portion of the band is allocated for Fixed Links SRSP Ref: 527
19.7-20.1	FIXED-SATELLITE (space-to-Earth) 5.484A MLA34 FIXED MOBILE Mobile-Satellite (space-to-Earth) 5.524	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
20.1-20.2	FIXED-SATELLITE (space-to-Earth) 5.484A MLA34 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
20.2-21.2	FIXED-SATELLITE (space-to-Earth) MLA34 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) Standard Frequency and Time Signal (space-to-Earth) 5.524	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
21.2-21.4	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	Band allocated to Fixed Services and EES SRSP Ref: 528
21.4-22	FIXED MOBILE BROADCASTING-SATELLITE 5.530 MLA34 5.531	Bands 21.4 - 22 GHz may be allocated for BSS (HDTV) after 01 April 2007 MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information SRSP Ref: 528



22-22.21	FIXED MOBILE except aeronautical mobile 5.149	Used for Fixed Service.



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
22.21-22.5		EARTH EXPLORATION-SATELLITE (passive)	
		FIXED	
		MOBILE except aeronautical mobile	
		RADIO ASTRONOMY	
		SPACE RESEARCH (passive)	
		5.149 5.532	
22.5-22.55		FIXED	
		MOBILE	
22.55-23.55		FIXED	
		INTER-SATELLITE	
		MOBILE	
		5.149	
23.55-23.6		FIXED	
		MOBILE	
23.6-24		EARTH EXPLORATION-SATELLITE (passive)	
		RADIO ASTRONOMY	
		SPACE RESEARCH (passive)	
		5.340	
24-24.05		AMATEUR	
		AMATEUR-SATELLITE	
		5.150	



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
22.21-22.5	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.532	Band allocated to Fixed Services and EES SRSP Ref: 528
22.5-22.55	FIXED MOBILE	Used for Fixed Service.
22.55-23.55	FIXED INTER-SATELLITE MLA34 MOBILE 5.149	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information For sharing between Fixed and Mobile Services. SRSP Ref: 528
23.55-23.6	FIXED MOBILE	Used for Fixed Service. SRSP Ref: 528
23.6-24	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Bands allocated to EES
24-24.05	AMATEUR AMATEUR-SATELLITE 5.150 MLA28	MLA28: Band is used for Industrial, Scientific and Medical (ISM) purposes. For Amateur Use



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
24.05-24.25	RADIOLOCATION Amateur Earth Exploration-Satellite (active) 5.150		
24.25-24.45	FIXED	RADIONAVIGATION	RADIONAVIGATION FIXED MOBILE
24.45-24.65	FIXED INTER-SATELLITE	INTER-SATELLITE RADIONAVIGATION 5.533	FIXED INTER-SATELLITE MOBILE RADIONAVIGATION 5.533
24.65-24.75	FIXED INTER-SATELLITE	INTER-SATELLITE RADIOLOCATION-SATELLITE (Earth-to-space)	FIXED INTER-SATELLITE MOBILE 5.533 5.534
24.75-25.25	FIXED	INTER-SATELLITE (Earth-to-space) 5.535	FIXED FIXED-SATELLITE (Earth-to-space) 5.535 MOBILE 5.534
25.25-25.5	FIXED INTER-SATELLITE 5.536 MOBILE Standard Frequency and Time Signal-Satellite (Earth-to-space)		



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
24.05-24.25	RADIOLOCATION Amateur Earth Exploration-Satellite (active) 5.150 MLA28	MLA28: Band is used for Industrial, Scientific and Medical (ISM) purposes
24.25-24.45	RADIONAVIGATION FIXED MLA36 MOBILE	MLA36: The frequency band 24.25 – 27.00 GHz is allocated for Local Multipoint Communication Service (LMCS). The frequency bands 27.00 - 29.50 GHz and 31.00 - 31.30 GHz are reserved for extension band for LMCS / FSS. SRSP Ref: 509
24.45-24.65	FIXED MLA36 INTER-SATELLITE MOBILE RADIONAVIGATION 5.533	MLA36: The frequency band 24.25 – 27.00 GHz is allocated for Local Multipoint Communication Service (LMCS). The frequency bands 27.00 - 29.50 GHz and 31.00 - 31.30 GHz are reserved for extension band for LMCS / FSS. SRSP Ref: 509
24.65-24.75	FIXED MLA36 INTER-SATELLITE MOBILE 5.533	MLA36: The frequency band 24.25 – 27.00 GHz is allocated for Local Multipoint Communication Service (LMCS). The frequency bands 27.00 - 29.50 GHz and 31.00 - 31.30 GHz are reserved for extension band for LMCS / FSS. SRSP Ref: 509
24.75-25.25	FIXED MLA36 FIXED-SATELLITE (Earth-to-space) 5.535 MLA34 MOBILE	MLA36: The frequency band 24.25 – 27.00 GHz is allocated for Local Multipoint Communication Service (LMCS). The frequency bands 27.00 - 29.50 GHz and 31.00 - 31.30 GHz are reserved for extension band for LMCS / FSS. MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information SRSP Ref: 509
25.25-25.50	FIXED MLA36 INTER-SATELLITE 5.536 MOBILE Standard Frequency and Time Signal-Satellite (Earth-to-space)	MLA36: The frequency band 24.25 – 27.00 GHz is allocated for Local Multipoint Communication Service (LMCS). The frequency bands 27.00 - 29.50 GHz and 31.00 - 31.30 GHz are reserved for extension band for LMCS / FSS. SRSP Ref: 509



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
25.5-27		EARTH EXPLORATION-SATELLITE (space-to-Earth) 5.536A 5.536B FIXED INTER-SATELLITE 5.536 MOBILE Standard Frequency and Time Signal-Satellite (Earth-to-space)	
27-27.5	FIXED INTER-SATELLITE 5.536 MOBILE	FIXED FIXED-SATELLITE (Earth-to-space) INTER-SATELLITE 5.536 5.537 MOBILE	
27.5-28.5		FIXED 5.357A FIXED-SATELLITE (Earth-to-space) 5.539 5.484A MOBILE 5.538 5.540	
28.5-29.1		FIXED FIXED-SATELLITE (Earth-to-space) 5.523A 5.539 5.484A MOBILE Earth Exploration-Satellite (Earth-to-space) 5.541 5.540	
29.1-29.5		FIXED FIXED-SATELLITE (Earth-to-space) 5.523C 5.523E 5.535A 5.539 5.541A MOBILE Earth Exploration-Satellite (Earth-to-space) 5.541 5.540	
29.5-29.9	FIXED-SATELLITE (Earth-to-space) 5.539 5.484A Earth Exploration-Satellite (Earth-to-space) 5.541 Mobile-Satellite (Earth-to-space)	FIXED-SATELLITE (Earth-to-space) 5.539 5.484A MOBILE-SATELLITE (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 5.541 5.525 5.526 5.527 5.529 5.540 5.542	FIXED-SATELLITE (Earth-to-space) 5.539 5.484A Earth Exploration-Satellite (Earth-to-space) 5.541 Mobile-Satellite (Earth-to-space) 5.540 5.542



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
25.5-27	EARTH EXPLORATION-SATELLITE (space-to-Earth) 5.536A FIXED MLA36 INTER-SATELLITE 5.536 MOBILE Standard Frequency and Time Signal-Satellite (Earth-to-space)	MLA36: The frequency band 24.25 – 27.00 GHz is allocated for Local Multipoint Communication Service (LMCS). The frequency bands 27.00 - 29.50 GHz and 31.00 - 31.30 GHz are reserved for extension band for LMCS / FSS.
27-27.5	FIXED MLA36 FIXED-SATELLITE (Earth-to-space) MLA34 INTER-SATELLITE 5.536 5.537 MOBILE	MLA36: The frequency band 24.25 – 27.00 GHz is allocated for Local Multipoint Communication Service (LMCS). The frequency bands 27.00 - 29.50 GHz and 31.00 - 31.30 GHz are reserved for extension band for LMCS / FSS. MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
27.5-28.5	FIXED 5.351A MLA36 FIXED-SATELLITE (Earth-to-space) 5.539 5.484A MLA34 MOBILE 5.538 5.540	MLA36: The frequency band 24.25 – 27.00 GHz is allocated for Local Multipoint Communication Service (LMCS). The frequency bands 27.00 - 29.50 GHz and 31.00 - 31.30 GHz are reserved for extension band for LMCS / FSS. MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Bands 27.5 to 28.35 GHz may be allocated to HAPS
28.5-29.1	FIXED FIXED-SATELLITE 5.523A 5.539 5.484A MOBILE Earth Exploration Satellite (Earth- to-space) 5.541	MLA36: The frequency band 24.25 – 27.00 GHz is allocated for Local Multipoint Communication Service (LMCS). The frequency bands 27.00 - 29.50 GHz and 31.00 - 31.30 GHz are reserved for extension band for LMCS / FSS. MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
29.1-29.5	FIXED MLA36 FIXED-SATELLITE (Earth-to-space) 5.523C 5.523E 5.535A 5.539 5.541A MLA34 MOBILE Earth Exploration-Satellite (Earth-to-space) 5.541 5.540	MLA36: The frequency band 24.25 – 27.00 GHz is allocated for Local Multipoint Communication Service (LMCS). The frequency bands 27.00 - 29.50 GHz and 31.00 - 31.30 GHz are reserved for extension band for LMCS / FSS. MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
29.5-29.9	FIXED-SATELLITE (Earth-to-space) 5.484A 5.539 MLA34 Earth Exploration-Satellite (Earth-to-(Earth-to-space) 5.541 Mobile-Satellite (Earth-to-space) Fixed Mobile 5.540 5.542	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
29.9-30	FIXED-SATELLITE (Earth-to-space) 5.484A 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		
30-31	FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) Standard Frequency and Time Signal-Satellite (space-to-Earth) 5.542		
31-31.3	FIXED 5.543A MOBILE Standard Frequency and Time Signal-Satellite (space-to-Earth) Space Research 5.544 5.545 5.149		
31.3-31.5	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340		
31.5-31.8	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.546	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
29.9-30	FIXED-SATELLITE (Earth-to-space) 5.484A 5.539 MLA34 MOBILE-SATELLITE (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 5.541 5.543 Fixed Mobile 5.525 5.526 5.527 5.538 5.540 5.542	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
30-31	FIXED-SATELLITE (Earth-to-space) MLA34 MOBILE-SATELLITE (Earth-to-space) Standard Frequency and Time Signal-Satellite (space-to-Earth) Fixed Mobile 5.542	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
31-31.3	FIXED 5.5543A MLA36 MOBILE Standard Frequency and Time Signal-Satellite (space-to-Earth) Space Research 5.544 5.545 5.149	MLA36: The frequency band 24.25 – 27.00 GHz is allocated for Local Multipoint Communication Service (LMCS). The frequency bands 27.00 - 29.50 GHz and 31.00 - 31.30 GHz are reserved for extension band for LMCS / FSS.
31.3-31.5	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Bands allocated to EES.
31.5-31.8	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149	Bands allocated to EES.



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
31.8-32		RADIONAVIGATION FIXED 5.547A SPACE RESEARCH (deep space) (space-to-Earth) 5.548 5.547 5.547B	
32-32.3		INTER-SATELLITE FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.548 5.547 5.547C	
32.3-33		INTER-SATELLITE FIXED 5.547A RADIONAVIGATION 5.548 5.547 5.547D	
33-33.4		RADIONAVIGATION FIXED 5.547A 5.547 5.547E	
33.4-34.2		RADIOLOCATION 5.549	
34.2-34.7		RADIOLOCATION SPACE RESEARCH (Deep space) (Earth-to-space) 5.549	
34.7-35.2		RADIOLOCATION Space Research 5.550 5.549	
35.2-35.5		METEOROLOGICAL AIDS RADIOLOCATION 5.549	
35.5-36		EARTH EXPLORATION-SATELLITE (active) METEOROLOGICAL AIDS RADIOLOCATION SPACE RESEARCH (active) 5.549 5.551A	
36-37		EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149	



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
31.8-32	RADIONAVIGATION FIXED 5.547A SPACE RESEARCH (deep space) (space-to-Earth) 5.548 5.547	Bands 31.8 to 33.4 GHz may be used for HDFS. Airborne radar systems use (31.8 - 33.4 GHz).
32-32.3	INTER-SATELLITE MLA34 FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.548 5.547	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Bands 31.8 to 33.4 GHz may be used by HDFS. Airborne radar systems use (31.8 – 33.4 GHz).
32.3-33	INTER-SATELLITE MLA34 FIXED 5.547A RADIONAVIGATION 5.548 5.547	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Bands 31.8 - 33.4 GHz may be used by HDFS. Airborne radar systems use (31.8 – 33.4 GHz).
33-33.4	RADIONAVIGATION FIXED 5.547A 5.547	Bands 31.8 to 33.4 GHz may be used by HDFS. Airborne radar systems use (31.8 – 33.4 GHz).
33.4-34.2	RADIOLOCATION FIXED MOBILE 5.549	For sharing between Fixed and Mobile Services
34.2-34.7	RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) FIXED MOBILE 5.549	For sharing between Fixed and Mobile Services
34.7-35.2	RADIOLOCATION FIXED MOBILE Space Research 5.549	For sharing between Fixed and Mobile Services
35.2-35.5	METEOROLOGICAL AIDS RADIOLOCATION FIXED MOBILE 5.549	For sharing between Fixed and Mobile Services
35.5-36	EARTH EXPLORATION-SATELLITE (active) METEOROLOGICAL AIDS RADIOLOCATION SPACE RESEARCH (active) FIXED MOBILE 5.549 5.551A	Bands allocated to EES.
36-37	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149	Bands allocated to EES.

Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
37-37.5	FIXED MOBILE SPACE RESEARCH (space-to-Earth) 5.547		
37.5-38	FIXED FIXED-SATELLITE (space-to-Earth) 5.551AA MOBILE SPACE RESEARCH (space-to-Earth) Earth Exploration-Satellite (space-to-Earth) 5.547		
38-39.5	FIXED FIXED-SATELLITE (space-to-Earth) 5.551AA MOBILE Earth Exploration-Satellite (space-to-Earth) 5.547		
39.5-40	FIXED FIXED-SATELLITE (space-to-Earth) 5.551AA MOBILE MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite (space-to-Earth) 5.547		
40-40.5	EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space)) Earth Exploration-Satellite (space-to-Earth)		
40.5-41	BROADCASTING BROADCASTING-SATELLITE FIXED FIXED -SATELLITE (space-to-Earth) Mobile 5.547	BROADCASTING BROADCASTING-SATELLITE FIXED FIXED -SATELLITE (space-to-Earth) Mobile 5.547	BROADCASTING BROADCASTING-SATELLITE FIXED FIXED -SATELLITE (space-to-Earth) Mobile 5.547



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
37-37.5	FIXED MOBILE SPACE RESEARCH (space-to-Earth) 5.547	Bands 37.0 - 40.0 GHz may be used for HDFSS
37.5-38	FIXED FIXED-SATELLITE (space-to-Earth) 5.551AA MLA34 MOBILE SPACE RESEARCH (space-to-Earth) Earth Exploration-Satellite (space-to-Earth) 5.547	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Bands 37.0 - 40.0 GHz may be used for HDFSS
38-39.5	FIXED FIXED-SATELLITE (space-to-Earth) 5.551AA MLA34 MOBILE Earth Exploration-Satellite (space-to-Earth) 5.547	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Bands 37.0 - 40.0 GHz may be used for HDFSS
39.5-40	FIXED FIXED-SATELLITE (space-to-Earth) 5.551AA MLA34 MOBILE MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite (space-to-Earth) 5.547	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Bands 37.0 - 40.0 GHz may be used for HDFSS Bands 39.5 - 40.0 GHz may be used for HDFSS
40-40.5	EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED MLA35 FIXED-SATELLITE (space-to-Earth) MLA34 MOBILE MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth Exploration-Satellite (space-to-Earth)	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information MLA35: The frequency bands 3400 - 3700 MHz, 10000 - 10700 MHz and 40000 – 40300 MHz is allocated for Fixed Wireless Access (FWA) service.
40.5-41	BROADCASTING BROADCASTING-SATELLITE MLA34 FIXED FIXED -SATELLITE (space-to-Earth) Mobile 5.547	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Bands 40.5 - 43.5 GHz may be used for HDFSS Band 40.5 - 42.0 GHz may be used for HDFSS Bands 40.5 - 42.5 may be allocated for HAPS - (DL)



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
41-42.5			
42.5-43.5			
43.5-47			
47-47.2			



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
41-42.5	<p>FIXED</p> <p>FIXED – SATELLITE (space-to-Earth) 5.551A</p> <p>BROADCASTING</p> <p>BROADCASTING - SATELLITE</p> <p>Mobile</p> <p>5.547 5.551F 5.551G</p>	<p>Bands 40.5 - 43.5 GHz may be used for HDFS</p>
42.5-43.5	<p>FIXED</p> <p>FIXED-SATELLITE (Earth-to-space) 5.552 MLA34</p> <p>MOBILE except aeronautical mobile</p> <p>RADIO ASTRONOMY</p> <p>5.149</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>Bands 40.5 - 43.5 GHz may be used for HDFS</p>
43.5-47	<p>MOBILE 5.553</p> <p>MOBILE-SATELLITE MLA34</p> <p>RADIONAVIGATION</p> <p>RADIONAVIGATION-SATELLITE</p> <p>5.554 MLA27 MLA28</p>	<p>MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information</p> <p>MLA28: Band is used for Industrial, Scientific and Medical (ISM) purposes.</p> <p>MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia (46.7-69.7 GHz).</p>
47-47.2	<p>AMATEUR</p> <p>AMATEUR-SATELLITE</p>	<p>For Amateur Use.</p>



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
47.2-50.2		FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.149 5.340 5.552A 5.555	
50.2-50.4		EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.555A	
50.4-51.4		FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Mobile-Satellite (Earth-to-space)	
51.4-52.6		FIXED MOBILE 5.556 5.547	
52.6-54.25		EARTH EXPLORATION SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	
54.25-55.78		EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive) 5.556B	
55.78-56.9		EARTH EXPLORATION-SATELLITE (passive) FIXED 5.57A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.557 5.547	



Frequency Band (GHz)	National – GHz	Notes/Future use
47.2-50.2	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MLA34 MOBILE 5.149 5.340 5.552A 5.555	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information HAPS (47.2 - 47.5 GHz and 47.9 - 48.2 GHz).
50.2-50.4	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.555A	Bands allocated to EES
50.4-51.4	FIXED FIXED-SATELLITE (Earth-to-space) MLA34 MOBILE Mobile-Satellite (Earth-to-space)	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
51.4-52.6	FIXED MOBILE 5.556 5.547	Bands 51.4 - 52.6 GHz may be used for HDFS
52.6-54.25	EARTH EXPLORATION SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	Bands allocated to EES
54.25-55.78	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A MLA34 SPACE RESEARCH (passive) 5.556B	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information SRSP Ref: 529
55.78-56.9	EARTH EXPLORATION-SATELLITE (passive) FIXED 5.57A INTER-SATELLITE 5.556A MLA34 MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Bands 55.78 - 59 GHz may be used for HDFS SRSP Ref: 529



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
56.9-57			EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.557 5.547
57-58.2			EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.557 5.547
58.2-59			EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.556 5.547
59-59.3			EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559
59.3-64			FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
56.9-57	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.558A MLA34 MOBILE 5.558 SPACE RESEARCH (passive) 5.547	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Bands 55.78 - 59 GHz may be used for HDFS SRSP Ref: 529
57-58.2	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MLA34 MOBILE 5.558 SPACE RESEARCH (passive) 5.547 MLA27	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information. Bands 55.78 – 59.0 GHz may be used for HDFS MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia (Bands 46.7-69.7 GHz and 57.0 – 64.0 GHz). SRSP Ref: 529
58.2-59	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.556 5.547 MLA27	Bands 55.78 – 59.0 GHz may be used for HDFS MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia (Bands 46.7-69.7 GHz and 57.0 – 64.0 GHz).
59-59.3	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) FIXED INTER-SATELLITE 5.556A MLA34 MOBILE 5.558 RADIOLOCATION 5.559 MLA27	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia (Bands 46.7-69.7 GHz and 57.0 – 64.0 GHz).
59.3-64	FIXED INTER-SATELLITE MLA34 MOBILE 5.558 RADIOLOCATION 5.559 5.138 MLA27	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia (Bands 46.7-69.7 GHz and 57.0 – 64.0 GHz).



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
64-65		FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.556 5.547	
65-66		EARTH EXPLORATION-SATELLITE SPACE RESEARCH INTER-SATELLITE FIXED MOBILE except aeronautical mobile 5.547	
66-71		MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE INTER-SATELLITE 5.554	
71-74		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) 5.559A 5.561	



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
64-65	FIXED INTER-SATELLITE MLA34 MOBILE except aeronautical mobile 5.556 5.547	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Bands 64.0 - 66.0 GHz may be used for HDFS
65-66	EARTH EXPLORATION-SATELLITE SPACE RESEARCH INTER-SATELLITE MLA34 FIXED MOBILE except aeronautical mobile 5.547	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information Bands 64.0 - 66.0 GHz may be used for HDFS
66-71	MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE INTER-SATELLITE MLA34 5.554	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
71-74	FIXED FIXED-SATELLITE (space-to-Earth) MLA34 MOBILE MOBILE-SATELLITE (space-to-Earth)	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
74-76	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.559A 5.561	Reserved for Digital Broadcasting



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
76-77.5		RADIOLOCATION RADIOASTRONOMY Amateur Amateur-Satellite Space Research (space-to-Earth)	
		5.149	
77.5-78		AMATEUR AMATEUR SATELLITE Radioastronomy Space Research (space-to-Earth)	
		5.149	
78-79		RADIOLOCATION Amateur Amateur-Satellite Radioastronomy Space Research (space-to-Earth)	
		5.149 5.560	
79-81		RADIOLOCATION RADIO ASTRONOMY Amateur Amateur - satellite Space research (space to Earth)	
		5.149	



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
76-77.5	RADIOLOCATION RADIOASTRONOMY Amateur Amateur-Satellite Space Research (space-to-Earth) 5.149 MLA27	MLA27: Portion of the band may be used for Low Power Devices throughout Malaysia (Bands 46.7-69.7 GHz and 76.0 – 77.0 GHz).
77.5-78	AMATUER AMATEUR SATELLITE Radioastronomy Space Research (space-to-Earth) 5.149	For Amateur Use
78-79	RADIOLOCATION Amateur Amateur-Satellite Radioastronomy Space Research (space-to-Earth) 5.149 5.560	Bands allocated to Radiolocation
79-81	RADIOLOCATION RADIO ASTRONOMY Amateur Amateur - satellite Space research (space to Earth) 5.149	Bands allocated to Radiolocation



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
81-84			
84-86			
86-92			
92-94			
94-94.1			
94.1-95			



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
81-84	FIXED FIXED-SATELLITE (Earth-to-space) MLA34 MOBILE MOBILE – SATELLITE (Earth-to-space) RADIOASTRONOMY Space Research (space-to-Earth) 5.149 5.561A	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
84-86	FIXED FIXED-SATELLITE (Earth-to-space) 5.561B MOBILE RADIOASTRONOMY 5.149	Bands shared with Fixed Mobile and Fixed Satellite Services (FSS).
86-92	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Bands allocated to EES
92-94	FIXED RADIOASTRONOMY MOBILE RADIOLOCATION 5.149 MLA34	Bands allocated to Fixed Services MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
94-94.1	RADIOLOCATION EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) Radioastronomy 5.562 5.562A MLA34	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
94.1-95	FIXED MOBILE RADIOLOCATION RADIOASTRONOMY 5.149 MLA34	Bands allocated to Fixed Services MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
95-100		MOBILE RADIONAVIGATION RADIONAVIGATION-SATELLITE FIXED RADIOLOCATION RADIOASTRONOMY 5.149 5.554	
100-102		EARTH EXPLORATION-SATELLITE (passive) RADIOASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	
102-105		FIXED MOBILE RADIOASTRONOMY 5.341 5.149	
105-109.5		FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	
109.5-111.8		EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	
111.8-114.25		FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
95-100	MOBILE RADIONAVIGATION RADIONAVIGATION-SATELLITE FIXED RADIOLOCATION RADIOASTRONOMY 5.149 5.554	
100-102	EARTH EXPLORATION-SATELLITE (passive) RADIOASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	Bands allocated for EESS
102-105	FIXED MOBILE RADIOASTRONOMY 5.149 5.341	
105-109.5	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	
109.5-111.8	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	Bands allocated for EES
111.8-114.25	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
114.25-116			EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341
116-119.98			EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341
119.98-122.25			EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
114.25-116	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) .34 5.340 5.341	Bands allocated for EES
116-119.98	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE MLA34 5.562C SPACE RESEARCH (passive) 5.341	Bands allocated for EES MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
119.98-122.25	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE MLA34 5.562C SPACE RESEARCH (passive) 5.138 5.341	Bands allocated for EES MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
122.25-123		FIXED INTER – SATELLITE MOBILE 5.558 Amateur 5.138	
123-130		FIXED SATELLITE (space-to-Earth) MOBILE – SATELLITE (space to Earth) RADIONAVIGATION RADIONAVIGATION – SATELLITE Radioastronomy 5.562D 5.149 5.554	
130-134		FIXED INTER-SATELLITE MOBILE 5.558 RADIOASTRONOMY EARTH EXPLORATION SATELLITE (active) 5.562E 5.149 5.562A	
134-136		AMATEUR AMATEUR – SATELLITE Radioastronomy	



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
122.25-123	FIXED INTER – SATELLITE MLA34 MOBILE 5.558 Amateur 5.138	For sharing between Fixed and Mobile Services. MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
123-130	FIXED SATELLITE (space – Earth) MOBILE – SATELLITE (space to Earth) RADIONAVIGATION RADIONAVIGATION – SATELLITE Radioastronomy 5.562D 5.149 5.554 MLA34	MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
130-134	FIXED INTER-SATELLITE MOBILE 5.558 RADIOASTRONOMY EARTH EXPLORATION SATELLITE (active) 5.562E 5.149 5.562A MLA34	Bands allocated for EES (133.5 to 134.0 GHz). MLA34: The frequency bands filed for MEASAT Satellite Services are as shown in Chapter III, Part 3.4 General Table of Frequencies Information
134-136	AMATEUR AMATEUR – SATELLITE Radioastronomy	For Amateur Use



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
136-141		RADIOASTRONOMY RADIOLOCATION Amateur Amateur- Satellite 5.149	
141-148.5		FIXED RADIOASTRONOMY RADIOLOCATION MOBILE 5.149	
148.5-151.5		EARTH EXPLORATION-SATELLITE (passive) RADIOASTRONOMY SPACE RESEARCH (passive) 5.340	
151.5-155.5		FIXED RADIOASTRONOMY RADIOLOCATION MOBILE 5.149	
155.5-158.5		EARTH EXPLORATION-SATELLITE (passive) 5.562F FIXED RADIOASTRONOMY SPACE RESEARCH (passive) 5.562B MOBILE 5.149 5.562G	
158.5-164		FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE – SATELLITE (space to Earth)	



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
136-141	RADIOASTRONOMY RADIOLOCATION Amateur Amateur- Satellite 5.149	
141-148.5	FIXED RADIOASTRONOMY RADIOLOCATION MOBILE 5.149	
148.5-151.5	EARTH EXPLORATION-SATELLITE (passive) RADIOASTRONOMY SPACE RESEARCH (passive) 5.340	Bands allocated to EES
151.5-155.5	FIXED RADIOASTRONOMY MOBILE 5.3149	
155.5-158.5	EARTH EXPLORATION-SATELLITE (passive) 5.562F FIXED RADIOASTRONOMY SPACE RESEARCH (passive) 5.562B MOBILE 5.149 5.562G	Bands allocated for EES
158.5-164	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE – SATELLITE (space-to-Earth)	



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
164-167	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Bands allocated for EES
167-174.5	FIXED MOBILE 5.558 FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE 5.149 5.562D	
174.5-174.8	FIXED INTER-SATELLITE MOBILE 5.558	
174.8-182	EARTH EXPLORATION-SATELLITE (passive) INTER – SATELLITE 5.562H SPACE RESEARCH (passive)	Bands allocated for EES Intersatellite (174.8 - 182.0 GHz)
182-185	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Bands allocated for EES



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
185-190			EARTH EXPLORATION - SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)
190-191.8			EARTH EXPLORATION - SATELLITE (passive) SPACE RESEARCH (passive) 5.340
191.8-200			FIXED INTER – SATELLITE MOBILE - SATELLITE MOBILE 5.558 RADIONAVIGATION RADIONAVIGATION – SATELLITE 5.149 5.341 5.554
200-202			RADIOASTRONOMY SPACE RESEARCH (passive) EARTH EXPLORATION-SATELLITE (passive) 5.340 5.341 5.563A
202-209			EARTH EXPLORATION-SATELLITE (passive) RADIOASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A
209-217			FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIOASTRONOMY 5.341 5.149



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
185-190	EARTH EXPLORATION - SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	Bands allocated for EES. Intersatellite (185.0 - 190 GHz)
190-191.8	EARTH EXPLORATION - SATELLITE (passive) SPACE RESEARCH (passive) 5.340	Bands allocated for EES
191.8-200	FIXED INTER – SATELLITE MOBILE – SATELLITE MOBILE 5.558 RADIONAVIGATION RADIONAVIGATION – SATELLITE 5.149 5.341 5.554	
200-202	EARTH EXPLORATION-SATELLITE (passive) RADIOASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	Bands allocated for EES
202-209	EARTH EXPLORATION-SATELLITE (passive) RADIOASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	Bands allocated for EES
209-217	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIOASTRONOMY 5.149 5.341	



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
217-226		FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIOASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	
226-231.5		EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
231.5-232		FIXED MOBILE Radiolocation	
232-235		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	
238-240		FIXED FIXED-SATELLITE (space-to-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE	
240-241		FIXED MOBILE RADIOLOCATION	



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
217-226	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIOASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	
226-231.5	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Bands allocated for EES
231.5-232	FIXED MOBILE Radiolocation	
232-235	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation MLA20	MLA20: For civil use only
235-238	EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) SPACE RESEARCH (passive) 5.563A 5.563B	Bands allocated for EES (237.9 – 238.0 GHz).
238-240	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE	
240-241	FIXED MOBILE RADIOLOCATION	



Frequency Band (GHz)	ITU Allocation		
	Region1	Region2	Region 3
241-248			
248-250			
250-252			
252-265			
265-275			
275-1000			



Frequency Band (GHz)	Malaysian Allocation	Notes/Future use
241-248	RADIOLOCATION RADIOASTRONOMY Amateur Amateur-Satellite 5.138 5.149 MLA28	MLA28: Band is used for Industrial, Scientific and Medical (ISM) purposes.
248-250	AMATEUR AMATEUR-SATELLITE Radioastronomy 5.149	For Amateur use.
250-252	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) RADIOASTRONOMY 5.340 5.563A	Bands allocated for EES
252-265	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) RADIONAVIGATION RADIONAVIGATION-SATELLITE RADIO ASTRONOMY 5.149 5.554	
265-275	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.563A	
275-1000	(Not allocated) 5.565	Bands not allocated at the moment.
187 500 – 420 000	FIXED MOBILE	Used by infrared and laser communication devices

PART C – INTERNATIONAL FOOTNOTES

The following is a listing of the footnotes contained in the International Table of Frequency Allocations revised by WRC-2000. It should be noted that some of the International footnotes not applicable to Malaysia have been suppressed. Malaysian footnotes, which have been developed to respond to specific Malaysian spectral requirements, are entered in the relevant Malaysian Allocation Table. To facilitate referencing of the revised footnotes by WRC-97/WRC-2000 to the footnotes previously in force, the latter footnotes are entered (in parenthesis) under the corresponding revised footnotes as shown in the following example:

5.53 - revised footnote

(444) - footnote previously in force

(Mod) WRC 2000 and Mod WRC2000 indicate editorial and substantial changes respectively made by WRC 2000. Add WRC 2000 indicates additions introduced by WRC-2000 and (similarly (Mod) WRC-95/97, Mod WRC-95/97 and Add WRC-95/97 are modifications made previously by WRC-95/97). The symbol Mob-87 indicates an addition, modification or deletion of a Provision, Appendix, Resolution or Recommendation by the World Administrative Radio Conference for the Mobile Services, Geneva, 1987. In the case of a deletion the symbol SUP is used.

- 5.53** Administrations authorizing the use of frequencies below 9 kHz shall ensure that no harmful interference is caused thereby to the services to which the bands above 9 kHz are allocated.
- 5.54** Administrations conducting scientific research using frequencies below 9 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.
- 5.55** *Additional allocation:* in Armenia, Azerbaijan, Bulgaria, Georgia, Kyrgyzstan, the Russian Federation, Tajikistan and Turkmenistan, the band 14-17 kHz is also allocated to the radionavigation service on a primary basis. (WRC-2000)
- 5.56** The stations of services to which the bands 14-19.95 kHz and 20.05-70 kHz and in Region 1 also the bands 72-84 kHz and 86-90 kHz are allocated may transmit standard frequency and time signals. Such stations shall be afforded protection from harmful interference. In Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Rep., Russian Federation, Tajikistan, Turkmenistan and Ukraine, the frequencies 25 kHz and 50 kHz will be used for this purpose under the same conditions. (WRC-97)
- 5.57** The use of the bands 14-19.95 kHz, 20.05-70 kHz and 70-90 kHz (72-84 kHz and 86-90 kHz in Region 1) by the maritime mobile service is limited to coast radiotelegraph stations (A1A and F1B only). Exceptionally, the use of class J2B or J7B emissions is authorized subject to the necessary bandwidth not exceeding that normally used for class A1A or F1B emissions in the band concerned.
- 5.58** *Additional allocation:* in Armenia, Azerbaijan, Georgia, Kazakstan, Kyrgyzstan, the Russian Federation, Tajikistan and Turkmenistan, the band 67-70 kHz is also allocated to the radionavigation service on a primary basis. (WRC-2000)
- 5.59** *Different category of service:* in Bangladesh and Pakistan, the allocation of the bands 70-72 kHz and 84-86 kHz to the fixed and maritime mobile services is on a primary basis (see No. **5.33**). (WRC-2000)
- 5.60** In the bands 70-90 kHz (70-86 kHz in Region 1) and 110-130 kHz (112-130 kHz in Region 1), pulsed radionavigation systems may be used on condition that they do not cause harmful interference to other services to which these bands are allocated.
- 5.61** In Region 2, the establishment and operation of stations in the maritime radionavigation service in the bands 70-90 kHz and 110-130 kHz shall be subject to agreement obtained under No. **9.21** with administrations whose services, operating in accordance with the Table, may be affected. However, stations of the fixed, maritime mobile and radiolocation services shall not cause harmful interference to stations in the maritime radionavigation service established under such agreements.

- 5.62** Administrations which operate stations in the radionavigation service in the band 90-110 kHz are urged to coordinate technical and operating characteristics in such a way as to avoid harmful interference to the services provided by these stations.
- 5.63** (SUP - WRC-97)
- 5.64** Only classes A1A or F1B, A2C, A3C, F1C or F3C emissions are authorized for stations of the fixed service in the bands allocated to this service between 90 kHz and 160 kHz (148.5 kHz in Region 1) and for stations of the maritime mobile service in the bands allocated to this service between 110 kHz and 160 kHz (148.5 kHz in Region 1). Exceptionally, class J2B or J7B emissions are also authorized in the bands between 110 kHz and 160 kHz (148.5 kHz in Region 1) for stations of the maritime mobile service.
- 5.65** *Different category of service:* in Bangladesh, the allocation of the bands 112-117.6 kHz and 126-129 kHz to the fixed and maritime mobile services is on a primary basis (see No. **5.33**). (WRC-2000)
- 5.66** *Different category of service:* in Germany, the allocation of the band 115-117.6 kHz to the fixed and maritime mobile services is on a primary basis (see No. **5.33**) and to the radionavigation service on a secondary basis (see No. **5.32**).
- 5.67** *Additional allocation:* in Azerbaijan, Bulgaria, Mongolia, Kyrgyzstan, Romania and Turkmenistan, the band 130-148.5 kHz is also allocated to the radionavigation service on a secondary basis. Within and between these countries this service shall have an equal right to operate. (WRC-2000)
- 5.68** *Alternative allocation:* in Angola, Botswana, Burundi, the Congo, Malawi, Dem. Rep. of the Congo, Rwanda and South Africa, the band 160-200 kHz is allocated to the fixed service on a primary basis.
- 5.69** *Additional allocation:* in Somalia, the band 200-255 kHz is also allocated to the aeronautical radionavigation service on a primary basis.
- 5.70** *Alternative allocation:* in Angola, Botswana, Burundi, Cameroon, the Central African Rep., the Congo, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Nigeria, Oman, Dem. Rep. of the Congo, Rwanda, South Africa, Swaziland, Tanzania, Chad, Zambia and Zimbabwe, the band 200-283.5 kHz is allocated to the aeronautical radionavigation service on a primary basis.
- 5.71** *Alternative allocation:* in Tunisia, the band 255-283.5 kHz is allocated to the broadcasting service on a primary basis.
- 5.72** Norwegian stations of the fixed service situated in northern areas (north of 60° N) subject to auroral disturbances are allowed to continue operation on four frequencies in the bands 283.5-490 kHz and 510-526.5 kHz.
- 5.73** The band 285-325 kHz (283.5-325 kHz in Region 1) in the maritime radionavigation service may be used to transmit supplementary navigational information using narrow-band techniques, on condition that no harmful interference is caused to radiobeacon stations operating in the radionavigation service. (WRC-97)
- 5.74** *Additional Allocation:* in Region 1, the frequency band 285.3-285.7 kHz is also allocated to the maritime radionavigation service (other than radiobeacons) on a primary basis.
- 5.75** *Different category of service:* in Armenia, Azerbaijan, Belarus, Georgia, Moldova, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan, Ukraine and the Black Sea areas of Bulgaria and Romania, the allocation of the band 315-325 kHz to the maritime radionavigation service is on a primary basis under the condition that in the Baltic Sea area, the assignment of frequencies in this band to new stations in the maritime or aeronautical radionavigation services shall be subject to prior consultation between the administrations concerned. (WRC-2000)

- 5.76** The frequency 410 kHz is designated for radio direction-finding in the maritime radionavigation service. The other radionavigation services to which the band 405-415 kHz is allocated shall not cause harmful interference to radio direction-finding in the band 406.5-413.5 kHz.
- 5.77** *Different category of service:* in Australia, China, the French Overseas Territories of Region 3, India, Indonesia (until 1 January 2005), Iran (Islamic Republic of), Japan, Pakistan, Papua New Guinea and Sri Lanka, the allocation of the band 415-495 kHz to the aeronautical radionavigation service is on a primary basis. Administrations in these countries shall take all practical steps necessary to ensure that aeronautical Radionavigation stations in the band 435-495 kHz do not cause interference to reception by coast stations of ship stations transmitting on frequencies designated for ship stations on a worldwide basis (see No. **52.39**). (WRC-2000)
- 5.78** *Different category of service:* in Cuba, the United States of America and Mexico, the allocation of the band 415-435 kHz to the aeronautical radionavigation service is on a primary basis.
- 5.79** The use of the bands 415-495 kHz and 505-526.5 kHz (505-510 kHz in Region 2) by the maritime mobile service is limited to radiotelegraphy.
- 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-97)**). (WRC-97)
- 5.80** In Region 2, the use of the band 435-495 kHz by the aeronautical radionavigation service is limited to non-directional beacons not employing voice transmission.
- 5.81** (SUP - WRC-2000)
- 5.82** In the maritime mobile service, the frequency 490 kHz is, from the date of full implementation of the GMDSS (see **Resolution 331 (Rev.WRC-97)**), 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 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. (WRC-97)
- 5.83** The frequency 500 kHz is an international distress and calling frequency for Morse radiotelegraphy. The conditions for its use are prescribed in Articles **31** and **52**, and in Appendix **13**.
- 5.84** The conditions for the use of the frequency 518 kHz by the maritime mobile service are prescribed in Articles **31** and **52** and in Appendix **13**. (WRC-97)
- 5.85** Not used.
- 5.86** In Region 2, in the band 525-535 kHz the carrier power of broadcasting stations shall not exceed 1 kW during the day and 250 W at night.
- 5.87** *Additional allocation:* in Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the band 526.5-535 kHz is also allocated to the mobile service on a secondary basis.
- 5.87A** *Additional allocation:* in Uzbekistan, the band 526.5-1 606.5 kHz is also allocated to the radionavigation service on a primary basis. Such use is subject to agreement obtained under No. **9.21** with administrations concerned and limited to ground-based radiobeacons in operation on 27 October 1997 until the end of their lifetime. (WRC-97)
- 5.88** *Additional allocation:* in China, the band 526.5-535 kHz is also allocated to the aeronautical radionavigation service on a secondary basis.
- 5.89** In Region 2, the use of the band 1 605-1 705 kHz by stations of the broadcasting service is subject to the Plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988). The examination of frequency assignments to stations of the fixed and mobile services in the band 1 625-1 705 kHz shall take account of the allotments appearing in the Plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988).

- 5.90** In the band 1 605-1 705 kHz, in cases where a broadcasting station of Region 2 is concerned, the service area of the maritime mobile stations in Region 1 shall be limited to that provided by ground-wave propagation.
- 5.91** *Additional allocation:* in the Philippines and Sri Lanka, the band 1 606.5-1 705 kHz is also allocated to the broadcasting service on a secondary basis. (WRC-97)
- 5.92** Some countries of Region 1 use radiodetermination systems in the bands 1 606.5-1 625 kHz, 1 635-1 800 kHz, 1 850-2 160 kHz, 2 194-2 300 kHz, 2 502-2 850 kHz and 3 500-3 800 kHz, subject to agreement obtained under No. **9.21**. The radiated mean power of these stations shall not exceed 50 W.
- 5.93** *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, Georgia, Hungary, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Nigeria, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Rep., the Russian Federation, Tajikistan, Chad, Turkmenistan and Ukraine, the bands 1 625-1 635 kHz, 1 800-1 810 kHz and 2 160-2 170 kHz and, in Bulgaria, the bands 1 625-1 635 kHz and 1 800-1 810 kHz, are also allocated to the fixed and land mobile services on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-2000)
- 5.94** Not used.
- 5.95** Not used.
- 5.96** In Germany, Armenia, Austria, Azerbaijan, Belarus, Denmark, Estonia, Finland, Georgia, Hungary, Ireland, Israel, Jordan, Kazakstan, Latvia, Liechtenstein, Lithuania, Malta, Moldova, Norway, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Rep., the United Kingdom, the Russian Federation, Sweden, Switzerland, Tajikistan, Turkmenistan and Ukraine, administrations may allocate up to 200 kHz to their amateur service in the bands 1 715-1 800 kHz and 1 850-2 000 kHz. However, when allocating the bands within this range to their amateur service, administrations shall, after prior consultation with administrations of neighbouring countries, take such steps as may be necessary to prevent harmful interference from their amateur service to the fixed and mobile services of other countries. The mean power of any amateur station shall not exceed 10 W. (WRC-2000)
- 5.97** In Region 3, the Loran system operates either on 1 850 kHz or 1 950 kHz, the bands occupied being 1 825-1 875 kHz and 1 925-1 975 kHz respectively. Other services to which the band 1 800-2 000 kHz is allocated may use any frequency therein on condition that no harmful interference is caused to the Loran system operating on 1 850 kHz or 1 950 kHz. **5.98** *Alternative allocation:* in Angola, Armenia, Azerbaijan, Belarus, Belgium, Bulgaria, Cameroon, the Congo, Denmark, Egypt, Eritrea, Spain, Ethiopia, Georgia, Greece, Italy, Kazakstan, Lebanon, Lithuania, Moldova, the Netherlands, Syria, Kyrgyzstan, the Russian Federation, Somalia, Tajikistan, Tunisia, Turkmenistan, Turkey and Ukraine, the band 1 810-1 830 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-2000)
- 5.99** *Additional allocation:* in Saudi Arabia, Austria, Bosnia and Herzegovina, Iraq, Libya, Uzbekistan, Slovakia, the Czech Rep., Romania, Slovenia, Chad, Togo and Yugoslavia, the band 1 810-1 830 kHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-2000)
- 5.100** In Region 1, the authorization to use the band 1 810-1 830 kHz by the amateur service in countries situated totally or partially north of 40° N shall be given only after consultation with the countries mentioned in Nos. **5.98** and **5.99** to define the necessary steps to be taken to prevent harmful interference between amateur stations and stations of other services operating in accordance with Nos. **5.98** and **5.99**.
- 5.101** *Alternative allocation:* in Burundi and Lesotho, the band 1 810-1 850 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.102** *Alternative allocation:* in Argentina, Bolivia, Chile, Mexico, Paraguay, Peru, Uruguay and Venezuela, the band 1 850-2 000 kHz is allocated to the fixed, mobile except aeronautical mobile, radiolocation and radionavigation services on a primary basis.

- 5.103** In Region 1, in making assignments to stations in the fixed and mobile services in the bands 1 850-2 045 kHz, 2 194-2 498 kHz, 2 502-2 625 kHz and 2 650-2 850 kHz, administrations should bear in mind the special requirements of the maritime mobile service.
- 5.104** In Region 1, the use of the band 2 025-2 045 kHz by the meteorological aids service is limited to oceanographic buoy stations.
- 5.105** In Region 2, except in Greenland, coast stations and ship stations using radiotelephony in the band 2 065-2 107 kHz shall be limited to class J3E emissions and to a peak envelope power not exceeding 1 kW. Preferably, the following carrier frequencies should be used: 2 065.0 kHz, 2 079.0 kHz, 2 082.5 kHz, 2 086.0 kHz, 2 093.0 kHz, 2 096.5 kHz, 2 100.0 kHz and 2 103.5 kHz. In Argentina and Uruguay, the carrier frequencies 2 068.5 kHz and 2 075.5 kHz are also used for this purpose, while the frequencies within the band 2 072-2 075.5 kHz are used as provided in No. **52.165**.
- 5.106** In Regions 2 and 3, provided no harmful interference is caused to the maritime mobile service, the frequencies between 2 065 kHz and 2 107 kHz may be used by stations of the fixed service communicating only within national borders and whose mean power does not exceed 50 W. In notifying the frequencies, the attention of the Bureau should be drawn to these provisions.
- 5.107** *Additional allocation:* in Saudi Arabia, Botswana, Eritrea, Ethiopia, Iraq, Lesotho, Libya, Somalia and Swaziland, the band 2 160-2 170 kHz is also allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis. The mean power of stations in these services shall not exceed 50 W. (WRC-2000)
- 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** and in Appendix **13**.
- 5.109** The frequencies 2 187.5 kHz, 4 207.5 kHz, 6 312 kHz, 8 414.5 kHz, 12 577 kHz and 16 804.5 kHz are international distress frequencies for digital selective calling. The conditions for the use of these frequencies are prescribed in Article **31**.
- 5.110** The frequencies 2 174.5 kHz, 4 177.5 kHz, 6 268 kHz, 8 376.5 kHz, 12 520 kHz and 16 695 kHz are international distress frequencies for narrow-band direct-printing telegraphy. The conditions for the use of these frequencies are prescribed in Article **31**.
- 5.111** The carrier frequencies 2 182 kHz, 3 023 kHz, 5 680 kHz, 8 364 kHz and the frequencies 121.5 MHz, 156.8 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** and in Appendix **13**. 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.
- 5.112** *Alternative allocation:* in Bosnia and Herzegovina, Cyprus, Denmark, Greece, Iceland, Malta, Sri Lanka and Yugoslavia, the band 2 194-2 300 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-2000)
- 5.113** For the conditions for the use of the bands 2 300-2 495 kHz (2 498 kHz in Region 1), 3 200-3 400 kHz, 4 750-4 995 kHz and 5 005-5 060 kHz by the broadcasting service, see Nos. **5.16** to **5.20**, **5.21** and **23.3** to **23.10**.
- 5.114** *Alternative allocation:* in Bosnia and Herzegovina, Cyprus, Denmark, Greece, Iraq, Malta, and Yugoslavia, the band 2 502-2 625 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-2000)
- 5.115** The carrier (reference) frequencies 3 023 kHz and 5 680 kHz may also be used, in accordance with Article **31** and Appendix **13** by stations of the maritime mobile service engaged in coordinated search and rescue operations.

- 5.116** Administrations are urged to authorize the use of the band 3 155-3 195 kHz to provide a common worldwide channel for low power wireless hearing aids. Additional channels for these devices may be assigned by administrations in the bands between 3 155 kHz and 3 400 kHz to suit local needs. It should be noted that frequencies in the range 3 000 kHz to 4 000 kHz are suitable for hearing aid devices which are designed to operate over short distances within the induction field.
- 5.117** *Alternative allocation:* in Bosnia and Herzegovina, Cyprus, Côte d'Ivoire, Denmark, Egypt, Greece, Iceland, Liberia, Malta, Sri Lanka, Togo and Yugoslavia, the band 3 155-3 200 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-2000)
- 5.118** *Additional allocation:* in the United States, Japan, Mexico, Peru and Uruguay, the band 3 230-3 400 kHz is also allocated to the radiolocation service on a secondary basis.
- 5.119** *Additional allocation:* in Honduras, Mexico, Peru and Venezuela, the band 3 500-3 750 kHz is also allocated to the fixed and mobile services on a primary basis.
- 5.120** (SUP - WRC-2000)
- 5.121** Not used.
- 5.122** *Alternative allocation:* in Argentina, Bolivia, Chile, Ecuador, Paraguay, Peru and Uruguay, the band 3 750-4 000 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.123** *Additional allocation:* in Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the band 3 900-3 950 kHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. **9.21**.
- 5.124** (SUP - WRC-2000)
- 5.125** *Additional allocation:* in Greenland, the band 3 950-4 000 kHz is also allocated to the broadcasting service on a primary basis. The power of the broadcasting stations operating in this band shall not exceed that necessary for a national service and shall in no case exceed 5 kW.
- 5.126** In Region 3, the stations of those services to which the band 3 995-4 005 kHz is allocated may transmit standard frequency and time signals.
- 5.127** The use of the band 4 000-4 063 kHz by the maritime mobile service is limited to ship stations using radiotelephony (see No. **52.220** and Appendix 17).
- 5.128** In Afghanistan, Argentina, Armenia, Azerbaijan, Belarus, Botswana, Burkina Faso, the Central African Rep., China, Georgia, India, Kazakstan, Mali, Niger, Kyrgyzstan, Russian Federation, Tajikistan, Chad, Turkmenistan and Ukraine, in the bands 4 063-4 123 kHz, 4 130-4 133 kHz and 4 408-4 438 kHz, stations of limited power in the fixed service which are situated at least 600 km from the coast may operate on condition that harmful interference is not caused to the maritime mobile service. (WRC-97)
- 5.129** On condition that harmful interference is not caused to the maritime mobile service, the frequencies in the 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.
- 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** and in Appendix **13**.
- 5.131** The frequency 4 209.5 kHz is used exclusively for the transmission by coast stations of meteorological and navigational warnings and urgent information to ships by means of narrow-band direct-printing techniques. (WRC-97)
- 5.132** The frequencies 4 210 kHz, 6 314 kHz, 8 416.5 kHz, 12 579 kHz, 16 806.5 kHz, 19 680.5 kHz, 22 376 kHz and 26 100.5 kHz are the international frequencies for the transmission of maritime safety information (MSI) (see Appendix **17**).

- 5.133** *Different category of service:* in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 5 130-5 250 kHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. **5.33**).
- 5.134** The use of the 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 limited to single-sideband emissions with the characteristics specified in Appendix **11** or to any other spectrum-efficient modulation techniques recommended by ITU-R. Access to these bands shall be subject to the decisions of a competent conference. (WRC-97)
- 5.135** (SUP - WRC-97)
- 5.136** The band 5 900-5 950 kHz is allocated, until 1 April 2007, to the fixed service on a primary basis, as well as to the following services: in Region 1 to the land mobile service on a primary basis, in Region 2 to the mobile except aeronautical mobile (R) service on a primary basis, and in Region 3 to the mobile except aeronautical mobile (R) service on a secondary basis, subject to application of the procedure referred to in Resolution **21 (Rev.WRC-95)**. After 1 April 2007, frequencies in this band may be used by stations in the above-mentioned services, 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 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.
- 5.137** On condition that harmful interference is not caused to the maritime mobile service, the bands 6 200-6 213.5 kHz and 6 220.5-6 525 kHz may be used exceptionally by stations in the fixed service, communicating only within the boundary of the country in which they are located, with a mean power not exceeding 50 W. At the time of notification of these frequencies, the attention of the Bureau will be drawn to the above conditions.
- 5.138** The following bands:
- | | |
|-------------------|---|
| 6 765-6 795 kHz | (centre frequency 6 780 kHz), |
| 433.05-434.79 MHz | (centre frequency 433.92 MHz) in Region 1 except in the countries mentioned in No. 5.280 , |
| 61-61.5 GHz | (centre frequency 61.25 GHz), |
| 122-123 GHz | (centre frequency 122.5 GHz), and |
| 244-246 GHz | (centre frequency 245 GHz) |
- are designated for industrial, scientific and medical (ISM) applications. The use of these frequency bands for ISM applications shall be subject to special authorization by the administration concerned, in agreement with other administrations whose radiocommunication services might be affected. In applying this provision, administrations shall have due regard to the latest relevant ITU-R Recommendations.
- 5.139** *Different category of service:* in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 6 765-7 000 kHz to the land mobile service is on a primary basis (see No. **5.33**).
- 5.140** *Additional allocation:* in Angola, Iraq, Rwanda, Somalia and Togo, the band 7 000-7 050 kHz is also allocated to the fixed service on a primary basis.
- 5.141** *Alternative allocation:* in Egypt, Eritrea, Ethiopia, Guinea, Libya and Madagascar, the band 7 000-7 050 kHz is allocated to the fixed service on a primary basis. (WRC-97)
- 5.142** The use of the band 7 100-7 300 kHz in Region 2 by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3.

- 5.143** The band 7 300-7 350 kHz is allocated, until 1 April 2007, to the fixed service on a primary basis and to the land mobile service on a secondary basis, subject to application of the procedure referred to in Resolution **21 (Rev.WRC-95)**. After 1 April 2007, frequencies in this band may be used by stations in the above-mentioned services, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. 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.
- 5.144** In Region 3, the stations of those services to which the band 7 995-8 005 kHz is allocated may transmit standard frequency and time signals.
- 5.145** The conditions for the use of the carrier frequencies 8 291 kHz, 12 290 kHz and 16 420 kHz are prescribed in Articles **31** and **52** and in Appendix **13**.
- 5.146** 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 are allocated to the fixed service on a primary basis until 1 April 2007, subject to application of the procedure referred to in **Resolution 21 (Rev.WRC-95)**. After 1 April 2007, frequencies in these bands 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.
- 5.147** On condition that harmful interference is not caused to the broadcasting service, frequencies in the bands 9 775-9 900 kHz, 11 650-11 700 kHz and 11 975-12 050 kHz may be used by stations in the fixed service communicating only within the boundary of the country in which they are located, each station using a total radiated power not exceeding 24 dBW.
- 5.148** (SUP - WRC-97)
- 5.149** In making assignments to stations of other services to which the bands:
- | | |
|---------------------------------|-----------------------------------|
| 13 360-13 410 kHz, | 31.2-31.3 GHz, |
| 25 550-25 670 kHz, | 31.5-31.8 GHz in Regions 1 and 3, |
| 37.5-38.25 MHz, | 36.43-36.5 GHz, |
| 73-74.6 MHz in Regions 1 and 3, | 42.5-43.5 GHz, |
| 150.05-153 MHz in Region 1, | 42.77-42.87 GHz, |
| 322-328.6 MHz, | 43.07-43.17 GHz, |
| 406.1-410 MHz, | 43.37-43.47 GHz, |
| 608-614 MHz in Regions 1 and 3, | 48.94-49.04 GHz, |
| 1 330-1 400 MHz, | 76-86 GHz, |
| 1 610.6-1 613.8 MHz, | 92-94 GHz, |
| 1 660-1 670 MHz, | 94.1-100 GHz, |
| 1 718.8-1 722.2 MHz, | 102-109.5 GHz, |
| 2 655-2 690 MHz, | 111.8-114.25 GHz, |
| 3 260-3 267 MHz, | 128.33-128.59 GHz, |
| 3 332-3 339 MHz, | 129.23-129.49 GHz, |
| 3 345.8-3 352.5 MHz, | 130-134 GHz, |
| 4 825-4 835 MHz, | 136-148.5 GHz, |
| 4 950-4 990 MHz, | 151.5-158.5 GHz, |
| 4 990-5 000 MHz, | 168.59-168.93 GHz, |
| 6 650-6 675.2 MHz, | 171.11-171.45 GHz, |
| 10.6-10.68 GHz, | 172.31-172.65 GHz, |
| 14.47-14.5 GHz, | 173.52-173.85 GHz, |
| 22.01-22.21 GHz, | 195.75-196.15 GHz, |
| 22.21-22.5 GHz, | 209-226 GHz, |
| 22.81-22.86 GHz, | 241-250 GHz, |
| 23.07-23.12 GHz, | 252-275 GHz |

are allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **4.5** and **4.6** and Article 29). (WRC-2000)

5.150 The following bands:

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

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

- 5.151** The bands 13 570-13 600 kHz and 13 800-13 870 kHz are allocated, until 1 April 2007, to the fixed service on a primary basis and to the mobile except aeronautical mobile (R) service on a secondary basis, subject to application of the procedure referred to in **Resolution 21 (Rev.WRC-95)**. After 1 April 2007, frequencies in these bands may be used by stations in the above-mentioned services, 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.
- 5.152** *Additional allocation:* in Armenia, Azerbaijan, China, Côte d'Ivoire, Georgia, Iran (Islamic Republic of), Kazakstan, Moldova, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 14 250-14 350 kHz is also allocated to the fixed service on a primary basis. Stations of the fixed service shall not use a radiated power exceeding 24 dBW. (WRC-2000)
- 5.153** In Region 3, the stations of those services to which the band 15 995-16 005 kHz is allocated may transmit standard frequency and time signals.
- 5.154** *Additional allocation:* in Armenia, Azerbaijan, Georgia, Kazakstan, Moldova, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 18 068-18 168 kHz is also allocated to the fixed service on a primary basis for use within their boundaries, with a peak envelope power not exceeding 1 kW. (WRC-2000)
- 5.155** *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, Kazakstan, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Rep., Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 21 850-21 870 kHz is also allocated to the aeronautical mobile (R) services on a primary basis.
- 5.155A** In Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakstan, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Rep., the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the use of the band 21 850-21 870 kHz by the fixed service is limited to provision of services related to aircraft flight safety. (WRC-2000)
- 5.155B** The band 21 870-21 924 kHz is used by the fixed service for provision of services related to aircraft flight safety.
- 5.156** *Additional allocation:* in Nigeria, the band 22 720-23 200 kHz is also allocated to the meteorological aids service (radiosondes) on a primary basis.
- 5.156A** The use of the band 23 200-23 350 kHz by the fixed service is limited to provision of services related to aircraft flight safety.
- 5.157** The use of the band 23 350-24 000 kHz by the maritime mobile service is limited to inter-ship radiotelegraphy.
- 5.158** Not used.
- 5.159** Not used.

- 5.160** *Additional allocation:* in Botswana, Burundi, Lesotho, Malawi, Dem. Rep. of the Congo, Rwanda and Swaziland, the band 41-44 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-2000)
- 5.161** *Additional allocation:* in Iran (Islamic Republic of) and Japan, the band 41-44 MHz is also allocated to the radiolocation service on a secondary basis.
- 5.162** *Additional allocation:* in Australia and New Zealand, the band 44-47 MHz is also allocated to the broadcasting service on a primary basis.
- 5.162A** *Additional allocation:* in Germany, Austria, Belgium, Bosnia and Herzegovina, China, Vatican, Denmark, Spain, Estonia, Finland, France, Ireland, Iceland, Italy, Latvia, The Former Yugoslav Republic of Macedonia, Liechtenstein, Lithuania, Luxembourg, Moldova, Monaco, Norway, the Netherlands, Poland, Portugal, Slovakia, the Czech Rep., the United Kingdom, the Russian Federation, Sweden and Switzerland the band 46-68 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with **Resolution 217 (WRC-97)**. (WRC-2000)
- 5.163** *Additional allocation:* in Armenia, Azerbaijan, Belarus, Estonia, Georgia, Hungary, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Rep., Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 47-48.5 MHz and 56.5-58 MHz are also allocated to the fixed and land mobile services on a secondary basis.
- 5.164** *Additional allocation:* in Albania, Germany, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Côte d'Ivoire, Denmark, Spain, Finland, France, Gabon, Greece, Ireland, Israel, Italy, Jordan, Lebanon, Libya, Liechtenstein, Luxembourg, Madagascar, Mali, Malta, Morocco, Mauritania, Monaco, Nigeria, Norway, the Netherlands, Poland, Syria, the United Kingdom, Senegal, Slovenia, Sweden, Switzerland, Swaziland, Togo, Tunisia, Turkey and Yugoslavia the band 47-68 MHz, in Romania the band 47-58 MHz and in the Czech Rep. The band 66-68 MHz, are also allocated to the land mobile service on a primary basis. However, stations of the land mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations of countries other than those mentioned in connection with the band. (WRC-97)
- 5.165** *Additional allocation:* in Angola, Cameroon, the Congo, Madagascar, Mozambique, Somalia, Sudan, Tanzania and Chad, the band 47-68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.166** *Alternative allocation:* in New Zealand, the band 50-51 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis; the band 53-54 MHz is allocated to the fixed and mobile services on a primary basis.
- 5.167** *Alternative allocation:* in Bangladesh, Brunei Darussalam, India, Indonesia, Iran (Islamic Republic of), Malaysia, Pakistan, Singapore and Thailand, the band 50-54 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis.
- 5.168** *Additional allocation:* in Australia, China and the Dem. People's Rep. of Korea, the band 50-54 MHz is also allocated to the broadcasting service on a primary basis.
- 5.169** *Alternative allocation:* in Botswana, Burundi, Lesotho, Malawi, Namibia, Dem. Rep. of the Congo, Rwanda, South Africa, Swaziland, Zambia and Zimbabwe, the band 50-54 MHz is allocated to the amateur service on a primary basis.
- 5.170** *Additional allocation:* in New Zealand, the band 51-53 MHz is also allocated to the fixed and mobile services on a primary basis.
- 5.171** *Additional allocation:* in Botswana, Burundi, Lesotho, Malawi, Mali, Namibia, Dem. Rep. of the Congo, Rwanda, South Africa, Swaziland and Zimbabwe, the band 54-68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.172** *Different category of service:* in the French Overseas Departments in Region 2, Guyana, Jamaica and Mexico, the allocation of the band 54-68 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**).

- 5.173** *Different category of service:* in the French Overseas Departments in Region 2, Guyana, Jamaica and Mexico, the allocation of the band 68-72 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**).
- 5.174** *Alternative allocation:* in Bulgaria, Hungary, Poland and Romania, the band 68-73 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions in the Final Acts of the Special Regional Conference (Geneva, 1960). (WRC-97)
- 5.175** *Alternative allocation:* in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 68-73 MHz and 76-87.5 MHz are allocated to the broadcasting service on a primary basis. The services to which these bands are allocated in other countries and the broadcasting service in the countries listed above are subject to agreements with the neighbouring countries concerned. (WRC-2000)
- 5.176** *Additional allocation:* in Australia, China, Korea (Rep. of), Estonia (subject to agreement obtained under No. **9.21**), the Philippines, the Dem. People's Rep. of Korea and Samoa, the band 68-74 MHz is also allocated to the broadcasting service on a primary basis. (WRC-2000)
- 5.177** *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakstan, Latvia, Moldova, Uzbekistan, Poland, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 73-74 MHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-2000)
- 5.178** *Additional allocation:* in Colombia, Costa Rica, Cuba, El Salvador, Guatemala, Guyana, Honduras and Nicaragua, the band 73-74.6 MHz is also allocated to the fixed and mobile services on a secondary basis.
- 5.179** *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, China, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Kyrgyzstan, Slovakia, the Czech Rep., Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 74.6-74.8 MHz and 75.2-75.4 MHz are also allocated to the aeronautical Radionavigation service, on a primary basis, for ground-based transmitters only.
- 5.180** The frequency 75 MHz is assigned to marker beacons. Administrations shall refrain from assigning frequencies close to the limits of the guardband to stations of other services which, because of their power or geographical position, might cause harmful interference or otherwise place a constraint on marker beacons. Every effort should be made to improve further the characteristics of airborne receivers and to limit the power of transmitting stations close to the limits 74.8 MHz and 75.2 MHz.
- 5.181** *Additional allocation:* in Egypt, Israel, Japan, and Syria, the band 74.8-75.2 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. **9.21**. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedure invoked under No. **9.21**. (WRC-2000)
- 5.182** *Additional allocation:* in Western Samoa, the band 75.4-87 MHz is also allocated to the broadcasting service on a primary basis.
- 5.183** *Additional allocation:* in China, Korea (Rep. of), Japan, the Philippines and the Dem. People's Rep. of Korea, the band 76-87 MHz is also allocated to the broadcasting service on a primary basis.
- 5.184** *Additional allocation:* in Bulgaria and Romania, the band 76-87.5 MHz is also allocated to the broadcasting service on a primary basis and used in accordance with the decisions contained in the Final Acts of the Special Regional Conference (Geneva, 1960). (WRC-97)
- 5.185** *Different category of service:* in the United States, the French Overseas Departments in Region 2, Guyana, Jamaica, Mexico and Paraguay, the allocation of the band 76-88 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**).
- 5.186** (SUP - WRC-97)

- 5.187** *Alternative allocation:* in Albania, the band 81-87.5 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions contained in the Final Acts of the Special Regional Conference (Geneva, 1960).
- 5.188** *Additional allocation:* in Australia, the band 85-87 MHz is also allocated to the broadcasting service on a primary basis. The introduction of the broadcasting service in Australia is subject to special agreements between the administrations concerned.
- 5.189** Not used.
- 5.190** *Additional allocation:* in Monaco, the band 87.5-88 MHz is also allocated to the land mobile service on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-97)
- 5.191** Not used.
- 5.192** *Additional allocation:* in China and Korea (Rep. of), the band 100-108 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-97)
- 5.193** Not used.
- 5.194** *Additional allocation:* in Azerbaijan, Lebanon, Syria, Kyrgyzstan, Somalia and Turkmenistan, the band 104-108 MHz is also allocated to the mobile, except aeronautical mobile (R), service on a secondary basis. (WRC-97)
- 5.195** Not used.
- 5.196** Not used.
- 5.197** *Additional allocation:* in Japan, Pakistan and Syria, the band 108-111.975 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. **9.21**. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedures invoked under No. **9.21**. (WRC-2000)
- 5.198** *Additional allocation:* the band 117.975-136 MHz is also allocated to the aeronautical mobile satellite (R) service on a secondary basis, subject to agreement obtained under No. **9.21**. (WRC-97)
- 5.199** The bands 121.45-121.55 MHz and 242.95-243.05 MHz are also allocated to the mobile-satellite service for the reception on board satellites of emissions from emergency position-indicating radiobeacons transmitting at 121.5 MHz and 243 MHz (see Appendix **13**).
- 5.200** In the band 117.975-136 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** and Appendix **13** for distress and safety purposes with stations of the aeronautical mobile service.
- 5.201** *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Hungary, Iran (Islamic Republic of), Iraq, Japan, Kazakstan, Latvia, Moldova, Mongolia, Mozambique, Uzbekistan, Papua New Guinea, Poland, Kyrgyzstan, Slovakia, the Czech Rep., Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 132-136 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service. (WRC-97)
- 5.202** *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Belarus, Bulgaria, the United Arab Emirates, Georgia, Iran (Islamic Republic of), Jordan, Latvia, Moldova, Oman, Uzbekistan, Poland, Syria, Kyrgyzstan, Slovakia, the Czech Rep., Romania, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 136-137 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service. (WRC-2000)

- 5.203** In the band 136-137 MHz, existing operational meteorological satellites may continue to operate, under the conditions defined in No. 4.4 with respect to the aeronautical mobile service, until 1 January 2002. Administrations shall not authorize new frequency assignments in this band to stations in the meteorological satellite service. (WRC-97)
- 5.203A** *Additional allocation:* in Israel, Mauritania, Qatar and Zimbabwe, the band 136-137 MHz is also allocated to the fixed and mobile, except aeronautical mobile (R), services on a secondary basis until 1 January 2005. (WRC-97)
- 5.203B** *Additional allocation:* in Saudi Arabia, United Arab Emirates, Jordan, Oman and Syria, the band 136-137 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis until 1 January 2005. (WRC-97)
- 5.204** *Different category of service:* in Afghanistan, Saudi Arabia, Bahrain, Bangladesh, Bosnia and Herzegovina, Brunei Darussalam, China, Cuba, the United Arab Emirates, India, Indonesia, Iran (Islamic Republic of), Iraq, Malaysia, Oman, Pakistan, Philippines, Qatar, Singapore, Sri Lanka, Thailand, Yemen and Yugoslavia, the band 137-138 MHz is allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis (see No. 5.33).
- 5.205** *Different category of service:* in Israel and Jordan, the allocation of the band 137-138 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. 5.33).
- 5.206** *Different category of service:* in Armenia, Azerbaijan, Belarus, Bulgaria, Egypt, Finland, France, Georgia, Greece, Kazakstan, Lebanon, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Syria, Slovakia, the Czech Rep., Romania, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 137-138 MHz to the aeronautical mobile (OR) service is on a primary basis (see No. 5.33). (WRC-2000)
- 5.207** *Additional allocation:* in Australia, the band 137-144 MHz is also allocated to the broadcasting service on a primary basis until that service can be accommodated within regional broadcasting allocations.
- 5.208** The use of the band 137-138 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. (WRC-97)
- 5.208A** In making assignments to space stations in the mobile-satellite service in the bands 137-138 MHz, 387-390 MHz and 400.15-401 MHz, administrations shall take all practicable steps to protect the radio astronomy service in the bands 150.05-153 MHz, 322-328.6 MHz, 406.1-410 MHz and 608-614 MHz from harmful interference from unwanted emissions. The threshold levels of interference detrimental to the radio astronomy service are shown in Table 1 of Recommendation ITU-R RA.769-1. (WRC-97)
- 5.209** The use of the bands 137-138 MHz, 148-150.05 MHz, 399.9-400.05 MHz, 400.15-401 MHz, 454-456 MHz and 459-460 MHz by the mobile-satellite service is limited to non-geostationary satellite systems. (WRC-97)
- 5.210** *Additional allocation:* in France, Italy, Liechtenstein, Slovakia, the Czech Rep., the United Kingdom and Switzerland, the bands 138-143.6 MHz and 143.65-144 MHz are also allocated to the space research service (space-to-Earth) on a secondary basis. (WRC-2000)
- 5.211** *Additional allocation:* in Germany, Saudi Arabia, Austria, Bahrain, Belgium, Bosnia and Herzegovina, Denmark, the United Arab Emirates, Spain, Finland, Greece, Ireland, Israel, Kenya, Kuwait, The Former Yugoslav Republic of Macedonia, Liechtenstein, Luxembourg, Mali, Malta, Norway, the Netherlands, Qatar, the United Kingdom, Somalia, Sweden, Switzerland, Tanzania, Tunisia, Turkey and Yugoslavia, the band 138-144 MHz is also allocated to the maritime mobile and land mobile services on a primary basis. (WRC-2000)
- 5.212** *Alternative allocation:* in Angola, Botswana, Burundi, Cameroon, the Central African Rep., the Congo, Gabon, Gambia, Ghana, Guinea, Iraq, Jordan, Lesotho, Liberia, Libya, Malawi, Mozambique, Namibia, Nigeria, Oman, Dem. Rep. of the Congo, Rwanda, Sierra Leone, South Africa, Swaziland, Chad, Togo, Zambia and Zimbabwe, the band 138-144 MHz is allocated to the fixed and mobile services on a primary basis. (WRC-2000)

- 5.213** *Additional allocation:* in China, the band 138-144 MHz is also allocated to the radiolocation service on a primary basis.
- 5.214** *Additional allocation:* in Bosnia and Herzegovina, Croatia, Eritrea, Ethiopia, Kenya, The Former Yugoslav Republic of Macedonia, Malta, Somalia, Sudan, Tanzania and Yugoslavia, the band 138-144 MHz is also allocated to the fixed service on a primary basis. (WRC-2000)
- 5.215** Not used.
- 5.216** *Additional allocation:* in China, the band 144-146 MHz is also allocated to the aeronautical mobile (OR) service on a secondary basis.
- 5.217** *Alternative allocation:* in Afghanistan, Bangladesh, Cuba, Guyana and India, the band 146-148 MHz is allocated to the fixed and mobile services on a primary basis.
- 5.218** *Additional allocation:* the band 148-149.9 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. **9.21**. The bandwidth of any individual transmission shall not exceed ± 25 kHz.
- 5.219** The use of the 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 band 148-149.9 MHz.
- 5.220** The use of the 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**. The mobile-satellite service shall not constrain the development and use of the radionavigation-satellite service in the bands 149.9-150.05 MHz and 399.9-400.05 MHz. (WRC-97)
- 5.221** Stations of the mobile-satellite service in the 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, Brunei Darussalam, Bulgaria, Cameroon, China, Cyprus, Congo, Korea (Rep. of), Croatia, Cuba, Denmark, Egypt, the United Arab Emirates, Eritrea, Spain, Estonia, Ethiopia, Finland, France, Gabon, Ghana, Greece, Guinea, Guinea Bissau, Hungary, India, Iran (Islamic Republic of), Ireland, Iceland, Israel, Italy, Jamaica, Japan, Jordan, Kazakstan, Kenya, Kuwait, Latvia, The Former Yugoslav Republic of Macedonia, Lebanon, Libya, Liechtenstein, Lithuania, Luxembourg, Malaysia, Mali, Malta, Mauritania, Moldova, Mongolia, Mozambique, Namibia, Norway, New Zealand, Oman, Uganda, Uzbekistan, Pakistan, Panama, Papua New Guinea, Paraguay, the Netherlands, the Philippines, Poland, Portugal, Qatar, Syria, Kyrgyzstan, Slovakia, Romania, the United Kingdom, the Russian Federation, Senegal, Sierra Leone, Singapore, Slovenia, Sri Lanka, South Africa, Sweden, Switzerland, Swaziland, Tanzania, Chad, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Ukraine, Viet Nam, Yemen, Yugoslavia, Zambia, and Zimbabwe. (WRC-2000)
- 5.222** Emissions of the radionavigation-satellite service in the bands 149.9-150.05 MHz and 399.9-400.05 MHz may also be used by receiving earth stations of the space research service.
- 5.223** Recognizing that the use of the band 149.9-150.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation-satellite service, administrations are urged not to authorize such use in application of No. **4.4**.
- 5.224** (SUP - WRC-97)
- 5.224A** The use of the bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile-satellite service (Earth-to-space) is limited to the land mobile-satellite service (Earth-to-space) until 1 January 2015. (WRC-97)
- 5.224B** The allocation of the bands 149.9-150.05 MHz and 399.9-400.05 MHz to the radionavigation-satellite service shall be effective until 1 January 2015. (WRC-97)
- 5.225** *Additional allocation:* in Australia and India, the band 150.05-153 MHz is also allocated to the radio astronomy service on a primary basis.

- 5.226** 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 are contained in Article **31** and Appendix **13**. In the bands 156-156.7625 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 **13**). 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 frequency 156.8 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.
- 5.227** In the maritime mobile VHF service the frequency 156.525 MHz is to be used exclusively for digital selective calling for distress, safety and calling. The conditions for the use of this frequency are prescribed in Articles **31** and **52**, and Appendices **13** and **18**.
- 5.228** Not used.
- 5.229** *Alternative allocation:* in Morocco, the band 162-174 MHz is allocated to the broadcasting service on a primary basis. The use of this band shall be subject to agreement with administrations having services, operating or planned, in accordance with the Table which are likely to be affected. Stations in existence on 1 January 1981, with their technical characteristics as of that date, are not affected by such agreement.
- 5.230** *Additional allocation:* in China, the band 163-167 MHz is also allocated to the space operation service (space-to-Earth) on a primary basis, subject to agreement obtained under No. 9.21.
- 5.231** *Additional allocation:* in Afghanistan, China and Pakistan, the band 167-174 MHz is also allocated to the broadcasting service on a primary basis. The introduction of the broadcasting service into this band shall be subject to agreement with the neighbouring countries in Region 3 whose services are likely to be affected.
- 5.232** *Additional allocation:* in Japan, the band 170-174 MHz is also allocated to the broadcasting service on a primary basis.
- 5.233** *Additional allocation:* in China, the band 174-184 MHz is also allocated to the space research (space to-Earth) and the space operation (space-to-Earth) services on a primary basis, subject to agreement obtained under No. **9.21**. These services shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations.
- 5.234** *Different category of service:* in Mexico, the allocation of the band 174-216 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**).
- 5.235** *Additional allocation:* in Germany, Austria, Belgium, Denmark, Spain, Finland, France, Israel, Italy, Liechtenstein, Malta, Monaco, Norway, the Netherlands, the United Kingdom, Sweden and Switzerland, the band 174-223 MHz is also allocated to the land mobile service on a primary basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, broadcasting stations, existing or planned, in countries other than those listed in this footnote.
- 5.236** Not used.
- 5.237** *Additional allocation:* in the Congo, Eritrea, Ethiopia, Gambia, Guinea, Libya, Malawi, Mali, Senegal, Sierra Leone, Somalia, Tanzania and Zimbabwe, the band 174-223 MHz is also allocated to the fixed and mobile services on a secondary basis. (WRC-97)
- 5.238** *Additional allocation:* in Bangladesh, India, Pakistan and the Philippines, the band 200-216 MHz is also allocated to the aeronautical radionavigation service on a primary basis.
- 5.239** Not used.

- 5.240** *Additional allocation:* in China and India, the band 216-223 MHz is also allocated to the aeronautical radionavigation service on a primary basis and to the radiolocation service on a secondary basis.
- 5.241** In Region 2, no new stations in the radiolocation service may be authorized in the band 216-225 MHz. Stations authorized prior to 1 January 1990 may continue to operate on a secondary basis.
- 5.242** *Additional allocation:* in Canada, the band 216-220 MHz is also allocated to the land mobile service on a primary basis.
- 5.243** *Additional allocation:* in Somalia, the band 216-225 MHz is also allocated to the aeronautical radionavigation service on a primary basis, subject to not causing harmful interference to existing or planned broadcasting services in other countries.
- 5.244** (SUP - WRC-97)
- 5.245** *Additional allocation:* in Japan, the band 222-223 MHz is also allocated to the aeronautical radionavigation service on a primary basis and to the radiolocation service on a secondary basis.
- 5.246** *Alternative allocation:* in Spain, France, Israel and Monaco, the band 223-230 MHz is allocated to the broadcasting and land mobile services on a primary basis (see No. **5.33**) on the basis that, in the preparation of frequency plans, the broadcasting service shall have prior choice of frequencies; and allocated to the fixed and mobile, except land mobile, services on a secondary basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations in Morocco and Algeria.
- 5.247** *Additional allocation:* in Saudi Arabia, Bahrain, the United Arab Emirates, Jordan, Oman, Qatar and Syria, the band 223-235 MHz is also allocated to the aeronautical radionavigation service on a primary basis.
- 5.248** Not used.
- 5.249** Not used.
- 5.250** *Additional allocation:* in China, the band 225-235 MHz is also allocated to the radio astronomy service on a secondary basis.
- 5.251** *Additional allocation:* in Nigeria, the band 230-235 MHz is also allocated to the aeronautical radionavigation service on a primary basis, subject to agreement obtained under No. **9.21**.
- 5.252** *Alternative allocation:* in Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the bands 230-238 MHz and 246-254 MHz are allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. **9.21**.
- 5.253** Not used.
- 5.254** The bands 235-322 MHz and 335.4-399.9 MHz may be used by the mobile-satellite service, subject to agreement obtained under No. 9.21, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table of Frequency Allocations.
- 5.255** The bands 312-315 MHz (Earth-to-space) and 387-390 MHz (space-to-Earth) in the mobile-satellite service may also be used by non-geostationary-satellite systems. Such use is subject to coordination under No. **9.11A**.
- 5.256** The frequency 243 MHz is the frequency in this band for use by survival craft stations and equipment used for survival purposes (see Appendix **13**).
- 5.257** The band 267-272 MHz may be used by administrations for space telemetry in their countries on a primary basis, subject to agreement obtained under No. **9.21**.

- 5.258** The use of the band 328.6-335.4 MHz by the aeronautical radionavigation service is limited to Instrument Landing Systems (glide path).
- 5.259** *Additional allocation:* in Egypt, Israel, Japan, and Syria, the band 328.6-335.4 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. 9.21. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedure invoked under No. 9.21. (WRC-2000)
- 5.260** Recognizing that the use of the band 399.9-400.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation satellite service, administrations are urged not to authorize such use in application of No. 4.4.
- 5.261** Emissions shall be confined in a band of ± 25 kHz about the standard frequency 400.1 MHz.
- 5.262** *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Bulgaria, Colombia, Costa Rica, Cuba, Egypt, the United Arab Emirates, Ecuador, Georgia, Hungary, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kazakstan, Kuwait, Liberia, Malaysia, Moldova, Nigeria, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, Slovakia, Romania, the Russian Federation, Singapore, Somalia, Tajikistan, Turkmenistan, Ukraine and Yugoslavia, the band 400.05-401 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-2000)
- 5.263** The band 400.15-401 MHz is also allocated to the space research service in the space-to-space direction for communications with manned space vehicles. In this application, the space research service will not be regarded as a safety service.
- 5.264** The use of the band 400.15-401 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. The power flux-density limit indicated in Annex 1 of Appendix 5 shall apply until such time as a competent world radiocommunication conference revises it.
- 5.265** Not used.
- 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 and Appendix 13).
- 5.267** Any emission capable of causing harmful interference to the authorized uses of the band 406-406.1 MHz is prohibited.
- 5.268** Use of the band 410 - 420 MHz by the space research service is limited to communications within 5 km of an orbiting, manned space vehicle. The power flux-density at the surface of the Earth produced by emissions from extra-vehicular activities shall not exceed -153 dB (W/m^2) for $0^\circ \leq \Phi \leq 5^\circ$, $-153 + 0.077(\Phi - 5)$ dB (W/m^2) for $5^\circ \leq \Phi \leq 70^\circ$ and -148 dB (W/m^2) for $70^\circ \leq \Phi \leq 90^\circ$, where Φ is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. No. 4.10 does not apply to extra-vehicular activities. In this frequency band the space research (space-to-space) service shall not claim protection from, nor constrain the use and development of, stations of the fixed and mobile service. (WRC-97)
- 5.269** *Different category of service:* in Australia, the United States, India, Japan and the United Kingdom, the allocation of the bands 420-430 MHz and 440-450 MHz to the radiolocation service is on a primary basis (see No. 5.33).
- 5.270** *Additional allocation:* in Australia, the United States, Jamaica and the Philippines, the bands 420-430 MHz and 440-450 MHz are also allocated to the amateur service on a secondary basis.
- 5.271** *Additional allocation:* in Azerbaijan, Belarus, China, Estonia, India, Latvia, Lithuania, Kyrgyzstan and Turkmenistan, the band 420-460 MHz is also allocated to the aeronautical radionavigation service (radio altimeters) on a secondary basis. (WRC-2000)
- 5.272** *Different category of service:* in France, the allocation of the band 430-434 MHz to the amateur service is on a secondary basis (see No. 5.32).
- 5.273** *Different category of service:* in Denmark, Libya and Norway, the allocation of the bands 430-432 MHz and 438-440 MHz to the radiolocation service is on a secondary basis (see No. 5.32).

- 5.274** *Alternative allocation:* in Denmark, Norway and Sweden, the bands 430-432 MHz and 438-440 MHz are allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.275** *Additional allocation:* in Bosnia and Herzegovina, Croatia, Estonia, Finland, Latvia, The Former Yugoslav Republic of Macedonia, Libya, Slovenia and Yugoslavia, the bands 430-432 MHz and 438-440 MHz are also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-97)
- 5.276** *Additional allocation:* in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burkina Faso, Burundi, Egypt, the United Arab Emirates, Ecuador, Eritrea, Ethiopia, Greece, Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Liechtenstein, Malaysia, Malta, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, the Dem. People's Rep. Of Korea, Singapore, Somalia, Switzerland, Tanzania, Thailand, Togo, Turkey and Yemen, the band 430-440 MHz is also allocated to the fixed service on a primary basis and the bands 430-435 MHz and 438-440 MHz are also allocated to the mobile, except aeronautical mobile, service on a primary basis. (WRC-97)
- 5.277** *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, Cameroon, Congo, Djibouti, Georgia, Hungary, Israel, Kazakstan, Latvia, Mali, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Rep., Romania, the Russian Federation, Rwanda, Tajikistan, Chad, Turkmenistan and Ukraine, the band 430-440 MHz is also allocated to the fixed service on a primary basis. (WRC-2000)
- 5.278** *Different category of service:* in Argentina, Colombia, Costa Rica, Cuba, Guyana, Honduras, Panama and Venezuela, the allocation of the band 430-440 MHz to the amateur service is on a primary basis (see No. **5.33**).
- 5.279** *Additional allocation:* in Mexico, the bands 430-435 MHz and 438-440 MHz are also allocated on a primary basis to the land mobile service, subject to agreement obtained under No. **9.21**.
- 5.280** In Germany, Austria, Bosnia and Herzegovina, Croatia, The Former Yugoslav Republic of Macedonia, Liechtenstein, Portugal, Slovenia, Switzerland and Yugoslavia, the band 433.05-434.79 MHz (center frequency 433.92 MHz) is designated for industrial, scientific and medical (ISM) applications. Radiocommunication services of these countries operating within this band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. **15.13**.
- 5.281** *Additional allocation:* in the French Overseas Departments in Region 2 and India, the band 433.75-434.25 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis. In France and in Brazil, the band is allocated to the same service on a secondary basis.
- 5.282** In the bands 435-438 MHz, 1 260-1 270 MHz, 2 400-2 450 MHz, 3 400-3 410 MHz (in Regions **2** and **3** only) and 5 650-5 670 MHz, the amateur-satellite service may operate subject to not causing harmful interference to other services operating in accordance with the Table (see No. **5.43**). Administrations authorizing such use shall ensure that any harmful interference caused by emissions from a station in the amateur-satellite service is immediately eliminated in accordance with the provisions of No. **25.11**. The use of the bands 1 260-1 270 MHz and 5 650-5 670 MHz by the amateur-satellite service is limited to the Earth-to-space direction.
- 5.283** *Additional allocation:* in Austria, the band 438-440 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.284** *Additional allocation:* in Canada, the band 440-450 MHz is also allocated to the amateur service on a secondary basis.
- 5.285** *Different category of service:* in Canada, the allocation of the band 440-450 MHz to the radiolocation service is on a primary basis (see No. **5.33**).
- 5.286** The band 449.75-450.25 MHz may be used for the space operation service (Earth-to-space) and the space research service (Earth-to-space), subject to agreement obtained under No. **9.21**.
- 5.286A** The use of the bands 454-456 MHz and 459-460 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. (WRC-97)

- 5.286B** The use of the band 454-455 MHz in the countries listed in No. **5.286D**, 455-456 MHz and 459-460 MHz in Region 2, and 454-456 MHz and 459-460 MHz in the countries listed in No. **5.286E**, by stations in the mobile-satellite service, shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations. (WRC-97)
- 5.286C** The use of the band 454-455 MHz in the countries listed in No. **5.286D**, 455-456 MHz and 459-460 MHz in Region 2, and 454-456 MHz and 459-460 MHz in the countries listed in No. **5.286E**, by stations in the mobile-satellite service, shall not constrain the development and use of the fixed and mobile services operating in accordance with the Table of Frequency Allocations. (WRC-97)
- 5.286D** *Additional allocation:* in Canada, the United States, Mexico and Panama, the band 454-455 MHz is also allocated to the mobile-satellite service (Earth-to-space) on a primary basis. (WRC-97)
- 5.286E** *Additional allocation:* in Cape Verde, Indonesia, Nepal, Nigeria and Papua New Guinea, the bands 454-456 MHz and 459-460 MHz are also allocated to the mobile-satellite (Earth-to-space) service on a primary basis. (WRC-97)
- 5.287** In the maritime mobile service, the frequencies 457.525 MHz, 457.550 MHz, 457.575 MHz, 467.525 MHz, 467.550 MHz and 467.575 MHz may be used by on-board communication stations. Where needed, equipment designed for 12.5 kHz channel spacing using also the additional frequencies 457.5375 MHz, 457.5625 MHz, 467.5375 MHz and 467.5625 MHz may be introduced for on-board communications. The use of these frequencies in territorial waters may be subject to the national regulations of the administration concerned. The characteristics of the equipment used shall conform to those specified in Recommendation ITU-R M.1174 (see Resolution **341** (WRC-97)). (WRC-97)
- 5.288** In the territorial waters of the United States and the Philippines, the preferred frequencies for use by on-board communication stations shall be 457.525 MHz, 457.550 MHz, 457.575 MHz and 457.600 MHz paired, respectively, with 467.750 MHz, 467.775 MHz, 467.800 MHz and 467.825 MHz. The characteristics of the equipment used shall conform to those specified in Recommendation ITU-R M.1174.
- 5.289** Earth exploration-satellite service applications, other than the meteorological-satellite service, may also be used in the bands 460-470 MHz and 1 690-1 710 MHz for space-to-Earth transmissions subject to not causing harmful interference to stations operating in accordance with the Table.
- 5.290** *Different category of service:* in Afghanistan, Azerbaijan, Belarus, China, Japan, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 460-470 MHz to the meteorological-satellite service (space-to-Earth) is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**. (WRC-2000)
- 5.291** *Additional allocation:* in China, the band 470-485 MHz is also allocated to the space research (space to-Earth) and the space operation (space-to-Earth) services on a primary basis subject to agreement obtained under No. **9.21** and subject to not causing harmful interference to existing and planned broadcasting stations.
- 5.291A** *Additional allocation:* in Germany, Austria, Denmark, Estonia, Finland, Liechtenstein, Norway, Netherlands, the Czech Rep. and Switzerland, the band 470-494 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with Resolution **217** (WRC-97). (WRC-97)
- 5.292** *Different category of service:* in Mexico and Venezuela, the allocation of the band 470-512 MHz to the fixed and mobile services, and in Argentina and Uruguay to the mobile service, is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**.
- 5.293** *Different category of service:* in Canada, Chile, Colombia, Cuba, the United States, Guyana, Honduras, Jamaica, Mexico, Panama and Peru, the allocation of the bands 470-512 MHz and 614-806 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**. In Argentina and Ecuador, the allocation of the band 470-512 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**. (WRC-2000)

- 5.294** *Additional allocation:* in Burundi, Cameroon, the Congo, Ethiopia, Israel, Kenya, Lebanon, Libya, Malawi, Senegal, Sudan, Syria, and Yemen, the band 470-582 MHz is also allocated to the fixed service on a secondary basis.
- 5.295** Not used.
- 5.296** *Additional allocation:* in Germany, Austria, Belgium, Cyprus, Denmark, Spain, Finland, France, Ireland, Israel, Italy, Libya, Lithuania, Malta, Morocco, Monaco, Norway, the Netherlands, Portugal, Syria, the United Kingdom, Sweden, Switzerland, Swaziland and Tunisia, the band 470-790 MHz is also allocated on a secondary basis to the land mobile service, intended for applications ancillary to broadcasting. Stations of the land mobile service in the countries listed in this footnote shall not cause harmful interference to existing or planned stations operating in accordance with the Table in countries other than those listed in this footnote. (WRC-2000)
- 5.297** *Additional allocation:* in Costa Rica, Cuba, El Salvador, the United States, Guatemala, Guyana, Honduras, Jamaica and Mexico, the band 512-608 MHz is also allocated to the fixed and mobile services on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-2000)
- 5.298** *Additional allocation:* in India, the band 549.75-550.25 MHz is also allocated to the space operation service (space-to-Earth) on a secondary basis.
- 5.299** Not used.
- 5.300** *Additional allocation:* in Israel, Libya, Syria and Sudan, the band 582-790 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis.
- 5.301** Not used.
- 5.302** *Additional allocation:* in the United Kingdom, the band 590-598 MHz is also allocated to the aeronautical radionavigation service on a primary basis. All new assignments to stations in the aeronautical radionavigation service, including those transferred from the adjacent bands, shall be subject to coordination with the Administrations of the following countries: Germany, Belgium, Denmark, Spain, France, Ireland, Luxembourg, Morocco, Norway and the Netherlands.
- 5.303** Not used.
- 5.304** *Additional allocation:* in the African Broadcasting Area (see Nos. **5.10** to **5.13**), the band 606-614 MHz is also allocated to the radio astronomy service on a primary basis.
- 5.305** *Additional allocation:* in China, the band 606-614 MHz is also allocated to the radio astronomy service on a primary basis.
- 5.306** *Additional allocation:* in Region 1, except in the African Broadcasting Area (see Nos. **5.10** to **5.13**), and in Region 3, the band 608-614 MHz is also allocated to the radio astronomy service on a secondary basis.
- 5.307** *Additional allocation:* in India, the band 608-614 MHz is also allocated to the radio astronomy service on a primary basis.
- 5.308** Not used.
- 5.309** *Different category of service:* in Costa Rica, El Salvador and Honduras, the allocation of the band 614-806 MHz to the fixed service is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**.
- 5.310** (SUP - WRC-97)
- 5.311** Within the frequency band 620-790 MHz, assignments may be made to television stations using frequency modulation in the broadcasting-satellite service subject to agreement between the administrations concerned and those having services, operating in accordance with the Table, which may be affected (see Resolutions **33** (Rev.WRC-97) and 507). Such stations shall not produce a power flux density in excess of the value -129 dB (W/m²) for angles of arrival less than 20° (see Recommendation **705**) within the territories of other countries without the consent of the administrations of those countries.

- 5.312** *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, Kazakstan, Latvia, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Rep., Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 645-862 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-97)
- 5.313** (SUP - WRC-97)
- 5.314** *Additional allocation:* in Austria, Italy, Moldova, Uzbekistan, the United Kingdom and Swaziland, the band 790-862 MHz is also allocated to the land mobile service on a secondary basis. (WRC-2000).
- 5.315** *Alternative allocation:* in Greece, Italy and Tunisia, the band 790-838 MHz is allocated to the broadcasting service on a primary basis. (WRC-2000)
- 5.316** *Additional allocation:* in Germany, Saudi Arabia, Bosnia and Herzegovina, Burkina Faso, Cameroon, Côte d'Ivoire, Croatia, Denmark, Egypt, Finland, Israel, Kenya, The Former Yugoslav Republic of Macedonia, Libya, Liechtenstein, Monaco, Norway, the Netherlands, Portugal, Syria, Sweden, Switzerland and Yugoslavia, the band 790-830 MHz, and in these same countries and in Spain, France, Gabon and Malta, the band 830-862 MHz, are also allocated to the mobile, except aeronautical mobile, service on a primary basis. However, stations of the mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, stations of services operating in accordance with the Table in countries other than those mentioned in connection with the band. (WRC-2000)
- 5.317** *Additional allocation:* in Region 2 (except Brazil and the United States), the band 806-890 MHz is also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. **9.21**. The use of this service is intended for operation within national boundaries.
- 5.317A** Administrations wishing to implement International Mobile Telecommunications-2000 (IMT-2000) may use those parts of the band 806-960 MHz which are allocated to the mobile service on a primary basis and are used or planned to be used for mobile systems (see Resolution **224 (WRC-2000)**). This identification does not preclude the use of these bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-2000)
- 5.318** *Additional allocation:* in Canada, the United States and Mexico, the bands 849-851 MHz and 894-896 MHz are also allocated to the aeronautical mobile service on a primary basis, for public correspondence with aircraft. The use of the band 849-851 MHz is limited to transmissions from aeronautical stations and the use of the band 894-896 MHz is limited to transmissions from aircraft stations.
- 5.319** *Additional allocation:* in Belarus, Russian Federation and Ukraine, the bands 806-840 MHz (Earth to-space) and 856-890 MHz (space-to-Earth) are also allocated to the mobile-satellite, except aeronautical mobile satellite (R), service. The use of these bands by this service shall not cause harmful interference to, or claim protection from, services in other countries operating in accordance with the Table of Frequency Allocations and is subject to special agreements between the administrations concerned.
- 5.320** *Additional allocation:* in Region 3, the bands 806-890 MHz and 942-960 MHz are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service on a primary basis, subject to agreement obtained under No. **9.21**. The use of this service is limited to operation within national boundaries. In seeking such agreement, appropriate protection shall be afforded to services operating in accordance with the Table, to ensure that no harmful interference is caused to such services.
- 5.321** *Alternative allocation:* in Italy, the band 838-854 MHz is allocated to the broadcasting service on a primary basis as from 1 January 1995.
- 5.322** In Region 1, in the band 862-960 MHz, stations of the broadcasting service shall be operated only in the African Broadcasting Area (see Nos. **5.10** to **5.13**) excluding Algeria, Egypt, Spain, Libya, Morocco, Namibia, Nigeria, South Africa, Tanzania, Zimbabwe and Zambia, subject to agreement obtained under No. **9.21**. (WRC-2000)

- 5.323** *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Hungary, Kazakstan, Latvia, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Rep., Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 862-960 MHz is also allocated to the aeronautical Radionavigation service on a primary basis. Such use is subject to agreement obtained under No. **9.21** with administrations concerned and limited to ground-based radiobeacons in operation on 27 October 1997 until the end of their lifetime. (WRC-97)
- 5.324** Not used.
- 5.325** *Different category of service:* in the United States, the allocation of the band 890-942 MHz to the radiolocation service is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**.
- 5.325A** *Different category of service:* in Cuba, the allocation of the band 902-915 MHz to the land mobile service is on a primary basis. (WRC-2000)
- 5.326** *Different category of service:* in Chile, the band 903-905 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis, subject to agreement obtained under No. **9.21**.
- 5.327** *Different category of service:* in Australia, the allocation of the band 915-928 MHz to the radiolocation service is on a primary basis (see No. **5.33**).
- 5.328** The use of the band 960-1 215 MHz by the aeronautical radionavigation service is reserved on a worldwide basis for the operation and development of airborne electronic aids to air navigation and any directly associated ground-based facilities. (WRC-2000)
- 5.328A** *Additional allocation:* the band 1 164-1 215 MHz is also allocated to the radionavigation-satellite service (space-to-Earth) (space-to-space) on a primary basis. The aggregate power flux-density produced by all the space stations of all radionavigation-satellite systems at the Earth's surface shall not exceed the provisional value of -115 dB(W/m²) in any 1 MHz band for all angles of arrival. Stations in the radionavigation-satellite service shall not cause harmful interference to, nor claim protection from, stations of the aeronautical-radionavigation service. The provisions of Resolution **605 (WRC-2000)** apply. (WRC-2000)
- 5.329** Use of the radionavigation-satellite service in the band 1 215-1 300 MHz shall be subject to the condition that no harmful interference is caused to, and no protection is claimed from, the radionavigation service authorized under No. **5.331**. See also Resolution **606 (WRC-2000)**. (WRC-2000)
- 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 other systems or services operating in accordance with the Table. (WRC-2000)
- 5.330** *Additional allocation:* in Angola, Saudi Arabia, Bahrain, Bangladesh, Cameroon, China, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Libya, Morocco, Mozambique, Nepal, Nigeria, Pakistan, the Philippines, Qatar, Syria, Somalia, Sudan, Sri Lanka, Chad, Togo and Yemen, the band 1 215-1 300 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-97)
- 5.331** *Additional allocation:* in Algeria, Germany, Austria, Bahrain, Belgium, Benin, Bosnia and Herzegovina, Burundi, Cameroon, China, Croatia, Denmark, the United Arab Emirates, France, Greece, India, Iran (Islamic Republic of), Iraq, Kenya, The Former Yugoslav Republic of Macedonia, Liechtenstein, Luxembourg, Mali, Mauritania, Norway, Oman, the Netherlands, Portugal, Qatar, Senegal, Slovenia, Somalia, Sudan, Sri Lanka, Sweden, Switzerland, Turkey and Yugoslavia, the band 1 215-1 300 MHz is also allocated to the radionavigation service on a primary basis. (WRC-2000)
- 5.332** In the band 1 215-1 260 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service, the radionavigation-satellite service and other services allocated on a primary basis. (WRC-2000)
- 5.333** (SUP - WRC-97)

- 5.334** *Additional allocation:* in Canada and the United States, the bands 1 240-1 300 MHz and 1 350-1 370 MHz are also allocated to the aeronautical radionavigation service on a primary basis.
- 5.335** In Canada and the United States in the band 1 240-1 300 MHz, active spaceborne sensors in the earth exploration-satellite and space research services shall not cause interference to, claim protection from, or otherwise impose constraints on operation or development of the aeronautical radionavigation service. (WRC-97)
- 5.335A** In the band 1 260-1 300 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service and other services allocated by footnotes on a primary basis. (WRC-2000)
- 5.336** Not used.
- 5.337** The use of the bands 1 300-1 350 MHz, 2 700-2 900 MHz and 9 000-9 200 MHz by the aeronautical radionavigation service is restricted to ground-based radars and to associated airborne transponders which transmit only on frequencies in these bands and only when actuated by radars operating in the same band.
- 5.337A** The use of the band 1 300-1 350 MHz by earth stations in the radionavigation-satellite service and by stations in the radiolocation service shall not cause harmful interference to, nor constrain the operation and development of, the aeronautical-radionavigation service. (WRC-2000)
- 5.338** In Azerbaijan, Bulgaria, Mongolia, Kyrgyzstan, Slovakia, the Czech Rep., Romania and Turkmenistan, existing installations of the radionavigation service may continue to operate in the band 1 350- 1 400 MHz. (WRC-2000)
- 5.339** The bands 1 370-1 400 MHz, 2 640-2 655 MHz, 4 950-4 990 MHz and 15.20-15.35 GHz are also allocated to the space research (passive) and earth exploration-satellite (passive) services on a secondary basis.
- 5.340** All emissions are prohibited in the following bands:
- | | |
|------------------------------|---|
| 1 400-1 427 MHz, | |
| 2 690-2 700 MHz, | except those provided for by Nos. 5.421 and 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 ² , | except those provided for by No. 5.555A , |
| 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, | except those provided for by No. 5.563 , |
| 190-191.8 GHz, | |
| 200-209 GHz, | |
| 226-231.5 GHz, | |
| 250-252 GHz. (WRC-2000) | |
- 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.
- 5.342** *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Uzbekistan, Kyrgystan, the Russian Federation and Ukraine, the band 1 429-1 535 MHz is also allocated to the aeronautical mobile service on a primary basis exclusively for the purposes of aeronautical telemetry within the national territory. As of 1 April 2007, the use of the band 1 452-1 492 MHz is subject to agreement between the administrations concerned. (WRC-2000)

- 5.343** In Region 2, the use of the band 1 435-1 535 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service.
- 5.344** *Alternative allocation:* in the United States, the band 1 452-1 525 MHz is allocated to the fixed and mobile services on a primary basis (see also No. **5.343**).
- 5.345** Use of the 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 (WARC-92)**.
- 5.346** Not used.
- 5.347** *Different category of service:* in Bangladesh, Bosnia and Herzegovina, Botswana, Bulgaria, Burkina Faso, Cuba, Denmark, Egypt, Greece, Ireland, Italy, Kenya, Mozambique, Portugal, Sri Lanka, Swaziland, Yemen, Yugoslavia and Zimbabwe, the allocation of the band 1 452-1 492 MHz to the broadcasting-satellite service and the broadcasting service is on a secondary basis until 1 April 2007. (WRC-2000)
- 5.348** The use of the band 1 492-1 525 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. However, no coordination threshold in Article **21** for space stations of the mobile-satellite service with respect to terrestrial services shall apply to the situation referred to in No. **5.343**. With respect to the situation referred to in No. **5.343**, the requirement for coordination in the band 1 492-1 525 MHz will be determined by band overlap.
- 5.348A** In the band 1 492-1 525 MHz, the coordination threshold in terms of the power flux-density levels at the surface of the Earth in application of No. **9.11A** for space stations in the mobile-satellite (space-to-Earth) service, with respect to the land mobile service use for specialized mobile radios or used in conjunction with public switched telecommunication networks (PSTN) operating within the territory of Japan, shall be -150 dB(W/m²) in any 4 kHz band for all angles of arrival, instead of those given in Table 5-2 of Appendix **5**. The above threshold level of the power flux-density shall apply until it is changed by a competent world radiocommunication conference.
- 5.349** *Different category of service:* in Saudi Arabia, Azerbaijan, Bahrain, Bosnia and Herzegovina, Cameroon, Egypt, France, Iran (Islamic Republic of), Iraq, Israel, Kazakstan, Kuwait, The Former Yugoslav Republic of Macedonia, Lebanon, Morocco, Qatar, Syria, Kyrgyzstan, Romania, Turkmenistan, Yemen and Yugoslavia, the allocation of the band 1 525-1 530 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. **5.33**). (WRC-2000)
- 5.350** *Additional allocation:* in Azerbaijan, Kyrgyzstan and Turkmenistan, the band 1 525-1 530 MHz is also allocated to the aeronautical mobile service on a primary basis. (WRC-2000)
- 5.351** The bands 1 525-1 544 MHz, 1 545-1 559 MHz, 1 626.5-1 645.5 MHz and 1 646.5-1 660.5 MHz shall not be used for feeder links of any service. In exceptional circumstances, however, an earth station at a specified fixed point in any of the mobile-satellite services may be authorized by an administration to communicate via space stations using these bands.
- 5.351A** For the use of the bands 1 525-1 544 MHz, 1 545-1 559 MHz, 1 610-1 626.5 MHz, 1 626.5-1 645.5 MHz, 1 646.5-1 660.5 MHz, 1 980-2 010 MHz, 2 170-2 200 MHz, 2 483.5-2 500 MHz, 2 500-2 520 MHz and 2 670-2690 MHz by the mobile-satellite service, see Resolutions **212 (Rev.WRC-97)** and **225 (WRC-2000)**. (WRC-2000)
- 5.352** (SUP - WRC-97)
- 5.352A** In the 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 France and French overseas territories in Region 3, Algeria, Saudi Arabia, Egypt, Guinea, India, Israel, Italy, Jordan, Kuwait, Mali, Malta, Morocco, Mauritania, Nigeria, Oman, Pakistan, Philippines, Qatar, Syria, Tanzania, Viet Nam and Yemen notified prior to 1 April 1998. (WRC-97)
- 5.353** (SUP - WRC-97)

- 5.353A** In applying the procedures of Section II of Article 9 to the mobile-satellite service in the bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz, priority shall be given to accommodating the spectrum requirements for distress, urgency and safety communications of the Global Maritime Distress and Safety System (GMDSS). Maritime mobile-satellite distress, urgency and safety communications shall have priority access and immediate availability over all other mobile satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, distress, urgency and safety communications of the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution **222 (WRC-2000)** shall apply.) (WRC-2000)
- 5.354** The use of the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz by the mobile-satellite services is subject to coordination under No. **9.11A**.
- 5.355** *Additional allocation:* in Bahrain, Bangladesh, Congo, Egypt, Eritrea, Iraq, Israel, Jordan, Kuwait, Lebanon, Malta, Morocco, Qatar, Syria, Somalia, Sudan, Chad, Togo and Yemen, the bands 1 540-1 559 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a secondary basis. (WRC-2000)
- 5.356** The use of the band 1 544-1 545 MHz by the mobile-satellite service (space-to-Earth) is limited to distress and safety communications (see Article **31**).
- 5.357** Transmissions in the band 1 545-1 555 MHz from terrestrial aeronautical stations directly to aircraft stations, or between aircraft stations, in the aeronautical mobile (R) service are also authorized when such transmissions are used to extend or supplement the satellite-to-aircraft links.
- 5.357A** In applying the procedures of Section II of Article 9 to the mobile-satellite service in the 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 (WRC-2000)** shall apply.) (WRC-2000)
- 5.358** (SUP - WRC-97)
- 5.359** *Additional allocation:* in Germany, Saudi Arabia, Armenia, Austria, Azerbaijan, Belarus, Benin, Bosnia and Herzegovina, Bulgaria, Cameroon, Spain, France, Gabon, Georgia, Greece, Guinea, Guinea-Bissau, Hungary, Jordan, Kazakhstan, Kuwait, Latvia, Lebanon, Libya, Lithuania, Mali, Morocco, Mauritania, Moldova, Mongolia, Nigeria, Uganda, Uzbekistan, Pakistan, Poland, Syria, Kyrgyzstan, the Dem. People's Rep. of Korea, Romania, the Russian Federation, Senegal, Swaziland, Tajikistan, Tanzania, Tunisia, Turkmenistan and Ukraine, the bands 1 550-1 559 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a primary basis. Administrations are urged to make all practicable efforts to avoid the implementation of new fixed service stations in these bands. (WRC-2000)
- 5.360** (SUP - WRC-97)
- 5.362** (SUP - WRC-97)
- 5.362A** In the United States, in the bands 1 555-1 559 MHz and 1 656.5-1 660.5 MHz, the aeronautical mobile satellite (R) service shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article 44. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (WRC-97)

- 5.362B** *Additional allocation:* The band 1 559-1 610 MHz is also allocated to the fixed service on a primary basis until 1 January 2005 in Germany, Armenia, Azerbaijan, Belarus, Benin, Bosnia and Herzegovina, Bulgaria, Spain, France, Gabon, Georgia, Greece, Guinea, Guinea-Bissau, Hungary, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Nigeria, Uganda, Uzbekistan, Pakistan, Poland, Kyrgyzstan, the Dem. People's Rep. of Korea, Romania, the Russian Federation, Senegal, Swaziland, Tajikistan, Tanzania, Turkmenistan and Ukraine, and until 1 January 2010 in Saudi Arabia, Cameroon, Jordan, Kuwait, Lebanon, Libya, Mali, Morocco, Mauritania, Syria and Tunisia. After these dates, the fixed service may continue to operate on a secondary basis until 1 January 2015, at which time this allocation shall no longer be valid. Administrations are urged to take all practicable steps to protect the radionavigation-satellite service and the aeronautical radionavigation service and not authorize new frequency assignments to fixed-service systems in this band. (WRC-2000)
- 5.362C** *Additional allocation:* in Bahrain, Bangladesh, Congo, Egypt, Eritrea, Iraq, Israel, Jordan, Kuwait, Lebanon, Malta, Morocco, Qatar, Syria, Somalia, Sudan, Chad, Togo and Yemen, the band 1 559-1 610 MHz is also allocated to the fixed service on a secondary basis until 1 January 2015, at which time this allocation shall no longer be valid. Administrations are urged to take all practicable steps to protect the radionavigation-satellite service and not authorize new frequency assignments to fixed-service systems in this band. (WRC-2000)
- 5.363** *Alternative allocation:* in Sweden, the band 1 590-1 626.5 MHz is allocated to the aeronautical radionavigation service on a primary basis.
- 5.364** The use of the band 1 610-1 626.5 MHz by the mobile-satellite service (Earth-to-space) and by the radiodetermination-satellite service (Earth-to-space) is subject to coordination under No. **9.11A**. A mobile earth station operating in either of the services in this band shall not produce a peak e.i.r.p. density in excess of -15 dB(W/4 kHz) in the part of the band used by systems operating in accordance with the provisions of No. **5.366** (to which No. **4.10** applies), unless otherwise agreed by the affected administrations. In the part of the band where such systems are not operating, the mean e.i.r.p. density of a mobile earth station shall not exceed -3 dB(W/4 kHz). Stations of the mobile-satellite service shall not claim protection from stations in the aeronautical Radionavigation service, stations operating in accordance with the provisions of No. **5.366** and stations in the fixed service operating in accordance with the provisions of No. **5.359**. Administrations responsible for the coordination of mobile-satellite networks shall make all practicable efforts to ensure protection of stations operating in accordance with the provisions of No. **5.366**.
- 5.365** The use of the band 1 613.8-1 626.5 MHz by the mobile-satellite service (space-to-Earth) is subject to coordination under No. **9.11A**.
- 5.366** The band 1 610-1 626.5 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities. Such satellite use is subject to agreement obtained under No. **9.21**.
- 5.367** *Additional allocation:* The bands 1 610-1 626.5 MHz and 5 000-5 150 MHz are also allocated to the aeronautical mobile-satellite (R) service on a primary basis, subject to agreement obtained under No. **9.21**.
- 5.368** With respect to the radiodetermination-satellite and mobile-satellite services the provisions of No. **4.10** do not apply in the band 1 610-1 626.5 MHz, with the exception of the aeronautical radionavigation satellite service.
- 5.369** *Different category of service:* in Angola, Australia, Burundi, China, Côte d'Ivoire, Eritrea, Ethiopia, India, Iran (Islamic Republic of), Israel, Jordan, Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Dem. Rep. of the Congo, Syria, Senegal, Sudan, Swaziland, Togo and Zambia, the allocation of the band 1 610-1 626.5 MHz to the radiodetermination-satellite service (Earth-to-space) is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21** from countries not listed in this provision. (WRC-97)
- 5.370** *Different category of service:* in Venezuela, the allocation to the radiodetermination-satellite service in the band 1 610-1 626.5 MHz (Earth-to-space) is on a secondary basis.
- 5.371** *Additional allocation:* in Region 1, the bands 1 610-1 626.5 MHz (Earth-to-space) and 2 483.5-2 500 MHz (space-to-Earth) are also allocated to the radiodetermination-satellite service on a secondary basis, subject to agreement obtained under No. **9.21**.

- 5.372** Harmful interference shall not be caused to stations of the radio astronomy service using the band 1 610.6-1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services (No. **29.13** applies).
- 5.373** Not used.
- 5.373A** (SUP - WRC-97)
- 5.374** Mobile earth stations in the mobile-satellite service operating in the bands 1 631.5-1 634.5 MHz and 1 656.5-1 660 MHz shall not cause harmful interference to stations in the fixed service operating in the countries listed in No. **5.359**. (WRC-97)
- 5.375** The use of the band 1 645.5-1 646.5 MHz by the mobile-satellite service (Earth-to-space) and for inter-satellite links is limited to distress and safety communications (see Article **31**).
- 5.376** Transmissions in the band 1 646.5-1 656.5 MHz from aircraft stations in the aeronautical mobile (R) service directly to terrestrial aeronautical stations, or between aircraft stations, are also authorized when such transmissions are used to extend or supplement the aircraft-to-satellite links.
- 5.376A** Mobile earth stations operating in the band 1 660-1 660.5 MHz shall not cause harmful interference to stations in the radio astronomy service. (WRC-97)
- 5.377** In the band 1 675-1 710 MHz, stations in the mobile-satellite service shall not cause harmful interference to, nor constrain the development of, the meteorological-satellite and meteorological aids services (see Resolution **213 (Rev.WRC-95)***) and the use of this band shall be subject to coordination under No. **9.11A**.
- 5.378** Not used.
- 5.379** *Additional allocation:* in Bangladesh, India, Indonesia, Nigeria and Pakistan, the band 1 660.5-1 668.4 MHz is also allocated to the meteorological aids service on a secondary basis.
- 5.379A** Administrations are urged to give all practicable protection in the band 1 660.5-1 668.4 MHz for future research in radio astronomy, particularly by eliminating air-to-ground transmissions in the meteorological aids service in the band 1 664.4-1 668.4 MHz as soon as practicable.
- 5.380** The bands 1 670-1 675 MHz and 1 800-1 805 MHz are intended for use, on a worldwide basis, by administrations wishing to implement aeronautical public correspondence. The use of the band 1 670-1 675 MHz by stations in the systems for public correspondence with aircraft is limited to transmissions from aeronautical stations and the use of the band 1 800-1 805 MHz is limited to transmissions from aircraft stations.
- 5.381** *Additional allocation:* in Afghanistan, Costa Rica, Cuba, India, Iran (Islamic Republic of), Malaysia, Pakistan and Sri Lanka, the band 1 690-1 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-97)
- 5.382** *Different category of service:* in Saudi Arabia, Armenia, Austria, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Bulgaria, the Congo, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guinea, Hungary, Iraq, Israel, Jordan, Kazakstan, Kuwait, the Former Yugoslav Republic of Macedonia, Lebanon, Mauritania, Moldova, Mongolia, Oman, Uzbekistan, Poland, Qatar, Syria, Kyrgyzstan, Romania, Russian Federation, Somalia, Tajikistan, Tanzania, Turkmenistan, Ukraine, Yemen and Yugoslavia, the allocation of the band 1 690-1 700 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. **5.33**), and in the Dem. People's Rep. of Korea, the allocation of the band 1 690-1 700 MHz to the fixed service is on a primary basis (see No. **5.33**) and to the mobile, except aeronautical mobile, service on a secondary basis. (WRC-97)
- 5.383** Not used.
- 5.384** *Additional allocation:* in India, Indonesia and Japan, the band 1 700-1 710 MHz is also allocated to the space research service (space-to-Earth) on a primary basis. (WRC-97)

- 5.384A** The bands, or portions of the bands, 1 710-1 885 MHz and 2 500-2 690 MHz, are identified for use by administrations wishing to implement International Mobile Telecommunications-2000 (IMT-2000) in accordance with Resolution **223 (WRC-2000)**. This identification does not preclude the use of these bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations (WRC-2000).
- 5.385** *Additional allocation:* the band 1 718.8-1 722.2 MHz is also allocated to the radio astronomy service on a secondary basis for spectral line observations. (WRC-2000)
- 5.386** *Additional allocation:* the band 1 750-1 850 MHz is also allocated to the space operation (Earth-to space) and space research (Earth-to-space) services in Region 2, in Australia, India, Indonesia and Japan on a primary basis, subject to agreement obtained under No. **9.21**, having particular regard to troposcatter systems.
- 5.387** *Additional allocation:* in Azerbaijan, Belarus, Georgia, Kazakstan, Mali, Mongolia, Kyrgyzstan, Slovakia, Romania, Tajikistan and Turkmenistan, the band 1 770-1 790 MHz is also allocated to the meteorological satellite service on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-2000)
- 5.388** The 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-2000 (IMT-2000). Such use does not preclude the use of these bands by other services to which they are allocated. The bands should be made available for IMT-2000 in accordance with Resolution **212 (Rev.WRC-97)**. (See also Resolution **223 (WRC-2000)**.) (WRC-2000)
- 5.388A** In Regions 1 and 3, the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz and, in Region 2, the bands 1 885-1 980 MHz and 2 110-2 160 MHz may be used by high altitude platform stations as base stations to provide International Mobile Telecommunications-2000 (IMT-2000), in accordance with Resolution **221 (WRC-2000)**. The use by IMT-2000 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-2000)
- 5.389** Not used.
- 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 (WRC-95)***. The use of these bands shall not commence before 1 January 2000; however the use of the band 1 980-1 990 MHz in Region 2 shall not commence before 1 January 2005.
- 5.389B** The use of the 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, Peru, Suriname, Trinidad and Tobago, Uruguay and Venezuela.
- 5.389C** The use of the bands 2 010-2 025 MHz and 2 160-2 170 MHz in Region 2 by the mobile-satellite service shall not commence before 1 January 2002 and is subject to coordination under No. **9.11A** and to the provisions of Resolution **716 (WRC-95)***. (WRC-97)
- 5.389D** In Canada and the United States the use of the bands 2 010-2 025 MHz and 2 160-2 170 MHz by the mobile-satellite service shall not commence before 1 January 2000.
- 5.389E** The use of the bands 2 010-2 025 MHz and 2 160-2 170 MHz by the mobile-satellite service in Region 2 shall not cause harmful interference to or constrain the development of the fixed and mobile services in Regions 1 and 3.
- 5.389F** In Algeria, Benin, Cape Verde, Egypt, Iran (Islamic Republic of), Mali, Syria and Tunisia, the use of the bands 1 980-2 010 MHz and 2 170-2 200 MHz by the mobile-satellite service shall neither cause harmful interference to the fixed and mobile services, nor hamper the development of those services prior to 1 January 2005, nor shall the former service request protection from the latter services. (WRC-2000)
- 5.390** In Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Suriname and Uruguay, the use of the bands 2 010-2 025 MHz and 2 160-2 170 MHz by the mobile-satellite services shall not cause harmful interference to stations in the fixed and mobile services before 1 January 2005. After this date, the use of these bands is subject to coordination under No. **9.11A** and to the provisions of Resolution **716 (WRC-95)***. (WRC-2000)

- 5.391** In making assignments to the mobile service in the 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, and shall take that Recommendation into account for the introduction of any other type of mobile system. (WRC-97)
- 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 explorationsatellite services in the bands 2 025-2 110 MHz and 2 200-2 290 MHz, shall not impose any constraints on Earth-to-space, space-to-Earth and other space-to-space transmissions of those services and in those bands between geostationary and non-geostationary satellites.
- 5.392A** *Additional allocation:* in Russian Federation, the band 2 160-2 200 MHz is also allocated to the space research service (space-to-Earth) on a primary basis until 1 January 2005. Stations in the space research service shall not cause harmful interference to, or claim protection from, stations in the fixed and mobile services operating in this frequency band.
- 5.393** *Additional allocation:* in the United States, India and Mexico, the band 2 310-2 360 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial sound broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (WARC-92)**, with the exception of *resolves* 3 in regard to the limitation on broadcasting-satellite systems in the upper 25 MHz. (WRC-2000)
- 5.394** In the United States, the use of the band 2 300-2 390 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile services. In Canada, the use of the band 2 300-2 483.5 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile services.
- 5.395** In France, the use of the band 2 310-2 360 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service.
- 5.396** Space stations of the broadcasting-satellite service in the band 2 310-2 360 MHz operating in accordance with No. 5.393 that may affect the services to which this band is allocated in other countries shall be coordinated and notified in accordance with Resolution **33 (Rev.WRC-97)**. Complementary terrestrial broadcasting stations shall be subject to bilateral coordination with neighbouring countries prior to their bringing into use.
- 5.397** *Different category of service:* in France, the band 2 450-2 500 MHz is allocated on a primary basis to the radiolocation service (see No. **5.33**). Such use is subject to agreement with administrations having services operating or planned to operate in accordance with the Table of Frequency Allocations which may be affected.
- 5.398** In respect of the radiodetermination-satellite service in the band 2 483.5-2 500 MHz, the provisions of No. **4.10** do not apply.
- 5.399** In Region 1, in countries other than those listed in No. **5.400**, harmful interference shall not be caused to, or protection shall not be claimed from, stations of the radiolocation service by stations of the radiodetermination satellite service.
- 5.400** *Different category of service:* in Angola, Australia, Bangladesh, Burundi, China, Eritrea, Ethiopia, India, Iran (Islamic Republic of), Jordan, Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Dem. Rep. of the Congo, Syria, Sudan, Swaziland, Togo and Zambia, the allocation of the band 2 483.5-2 500 MHz to the radiodetermination-satellite service (space-to-Earth) is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21** from countries not listed in this provision. (WRC-97)
- 5.401** Not used.
- 5.402** The use of the band 2 483.5-2 500 MHz by the mobile-satellite and the radiodetermination-satellite services is subject to the coordination under No. **9.11A**. Administrations are urged to take all practicable steps to prevent harmful interference to the radio astronomy service from emissions in the 2 483.5-2 500 MHz band, especially those caused by second-harmonic radiation that would fall into the 4 990-5 000 MHz band allocated to the radio astronomy service worldwide.

- 5.403** Subject to agreement obtained under No. **9.21**, the band 2 520-2 535 MHz (until 1 January 2005 the band 2500-2 535 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.
- 5.404** *Additional allocation:* in India and Iran (Islamic Republic of), the band 2 500-2 516.5 MHz may also be used for the radiodetermination-satellite service (space-to-Earth) for operation limited to within national boundaries, subject to agreement obtained under No. **9.21**.
- 5.405** *Additional allocation:* in France, the band 2 500-2 550 MHz is also allocated to the radiolocation service on a primary basis. Such use is subject to agreement with the administrations having services operating or planned to operate in accordance with the Table which may be affected.
- 5.406** Not used.
- 5.407** In the band 2 500-2 520 MHz, the power flux-density at the surface of the Earth from space stations operating in the mobile-satellite (space-to-Earth) service shall not exceed -152 dB(W/(m².4 kHz)) in Argentina, unless otherwise agreed by the administrations concerned.
- 5.408** (SUP - WRC-2000)
- 5.409** Administrations shall make all practicable efforts to avoid developing new tropospheric scatter systems in the band 2 500-2 690 MHz.
- 5.410** The band 2 500-2 690 MHz may be used for tropospheric scatter systems in Region 1, subject to agreement obtained under No. **9.21**.
- 5.411** When planning new tropospheric scatter radio-relay links in the band 2 500-2 690 MHz, all possible measures shall be taken to avoid directing the antennae of these links towards the geostationary-satellite orbit.
- 5.412** *Alternative allocation:* in Azerbaijan, Bulgaria, Kyrgyzstan and Turkmenistan, the band 2 500-2 690 MHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-2000)
- 5.413** In the design of systems in the broadcasting-satellite service in the bands between 2 500 MHz and 2 690 MHz, administrations are urged to take all necessary steps to protect the radio astronomy service in the band 2 690-2 700 MHz.
- 5.414** The allocation of the frequency band 2 500-2 520 MHz to the mobile-satellite service (space-to-Earth) shall be effective on 1 January 2005 and is subject to coordination under No. **9.11A**.
- 5.415** The use of the bands 2 500-2 690 MHz in Region 2 and 2 500-2 535 MHz and 2 655-2 690 MHz in Region 3 by the fixed-satellite service is limited to national and regional systems, subject to agreement obtained under No. **9.21**, giving particular attention to the broadcasting-satellite service in Region 1. In the direction space-to- Earth, the power flux-density at the Earth's surface shall not exceed the values given in Article **21**, Table **21-4**.
- 5.415A** *Additional allocation:* in India and Japan, subject to agreement obtained under No. 9.21, the band 2 515-2 535 MHz may also be used for the aeronautical mobile-satellite service (space-to-Earth) for operation limited to within their national boundaries. (WRC-2000)
- 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 power flux-density at the Earth's surface shall not exceed the values given in Article **21**, Table **21-4**.
- 5.417** (SUP - WRC-2000)
- 5.418** *Additional allocation:* in Bangladesh, Belarus, Korea (Rep. of), India, Japan, Pakistan, Singapore, Sri Lanka and Thailand, the band 2 535-2 655 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (WARC-92)**. The provisions of No. **5.416** and Table **21-4** of Article **21**, do not apply to this additional allocation. Use of non-geostationary-satellite systems in the broadcasting satellite service (sound) is subject to Resolution **539 (WRC-2000)**. (WRC-2000)

- 5.418A** In certain Region 3 countries listed in No. **5.418**, use of the band 2 630-2 655 MHz by non-geostationary-satellite systems in the broadcasting-satellite service (sound) for which complete Appendix 4 coordination information, or notification information, has been received after 2 June 2000, is subject to the application of the provisions of No. **9.12A**, in respect of geostationary-satellite networks for which complete Appendix 4 coordination information, or notification information, is considered to have been received after 2 June 2000, and No. **22.2** does not apply. No. **22.2** shall continue to apply with respect to geostationary-satellite networks for which complete Appendix 4 coordination information, or notification information, is considered to have been received before 3 June 2000. Use of the band by non-geostationary-satellite systems in the broadcasting-satellite service (sound) is subject to the provisions of Resolution **539 (WRC-2000)**, and such systems shall be in accordance with Resolution **528 (WARC-92)**. (WRC-2000)
- 5.418B** Use of the band 2 630-2 655 MHz by non-geostationary-satellite systems 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**. Resolution **539 (WRC-2000)** applies. (WRC-2000)
- 5.418C** Use of the band 2 630-2 655 MHz by geostationary-satellite networks for which complete Appendix 4 coordination information, or notification information, has been received after 2 June 2000 is subject to the application of the provisions of No. **9.13** with respect to non-geostationary-satellite systems in the broadcastingsatellite service (sound), and No. **22.2** does not apply. Resolution **539 (WRC-2000)** applies. (WRC-2000)
- 5.419** The allocation of the frequency band 2 670-2 690 MHz to the mobile-satellite service shall be effective from 1 January 2005. When introducing systems of the mobile-satellite service in this band, 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**.
- 5.420** The band 2 655-2 670 MHz (until 1 January 2005 the band 2 655-2 690 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.
- 5.420A** *Additional allocation:* in India and Japan, subject to agreement obtained under No. **9.21**, the band 2 670-2 690 MHz may also be used for the aeronautical mobile-satellite service (Earth-to-space) for operation limited to within their national boundaries. (WRC-2000)
- 5.421** *Additional allocation:* in Germany and Austria, the band 2 690-2 695 MHz is also allocated to the fixed service on a primary basis. Such use is limited to equipment in operation by 1 January 1985.
- 5.422** *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Brunei Darussalam, Congo, Côte d'Ivoire, Cuba, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Gabon, Georgia, Guinea, Guinea-Bissau, Iran (Islamic Republic of), Iraq, Israel, Jordan, Lebanon, Malaysia, Mali, Mauritania, Moldova, Mongolia, Nigeria, Oman, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, the Dem. Rep. of the Congo, Romania, the Russian Federation, Somalia, Tajikistan, Tunisia, Turkmenistan, Ukraine, Yemen and Yugoslavia, the band 2 690-2 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985. (WRC-2000)
- 5.423** In the band 2 700-2 900 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the aeronautical radionavigation service.
- 5.424** *Additional allocation:* in Canada, the band 2 850-2 900 MHz is also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars.
- 5.425** In the band 2 900-3 100 MHz, the use of the shipborne interrogator-transponder system (SIT) shall be confined to the sub-band 2 930 -2 950 MHz.
- 5.426** The use of the band 2 900-3 100 MHz by the aeronautical radionavigation service is limited to ground based radars.

- 5.427** In the bands 2 900-3 100 MHz and 9 300-9 500 MHz, the response from radar transponders shall not be capable of being confused with the response from radar beacons (racons) and shall not cause interference to ship or aeronautical radars in the radionavigation service, having regard, however, to No. **4.9**.
- 5.428** *Additional allocation:* in Azerbaijan, Bulgaria, Cuba, Mongolia, Kyrgyzstan, Romania and Turkmenistan, the band 3 100-3 300 MHz is also allocated to the radionavigation service on a primary basis. (WRC-2000)
- 5.429** *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, China, the Congo, Korea (Rep. of), the United Arab Emirates, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Libya, Malaysia, Oman, Pakistan, Qatar, Syria, Dem. People's Rep. of Korea and Yemen, the band 3 300-3 400 MHz is also allocated to the fixed and mobile services on a primary basis. The countries bordering the Mediterranean shall not claim protection for their fixed and mobile services from the radiolocation service. (WRC-97)
- 5.430** *Additional allocation:* in Azerbaijan, Bulgaria, Cuba, Mongolia, Kyrgyzstan, Romania and Turkmenistan, the band 3 300-3 400 MHz is also allocated to the radionavigation service on a primary basis. (WRC-2000)
- 5.431** *Additional allocation:* in Germany, Israel, Nigeria and the United Kingdom, the band 3 400-3 475 MHz is also allocated to the amateur service on a secondary basis.
- 5.432** *Different category of service:* in Korea (Rep. of), Japan and Pakistan, the allocation of the band 3 400-3 500 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. **5.33**). (WRC-2000)
- 5.433** In Regions 2 and 3, in the band 3 400-3 600 MHz the radiolocation service is allocated on a primary basis. However, all administrations operating radiolocation systems in this band are urged to cease operations by 1985. Thereafter, administrations shall take all practicable steps to protect the fixed-satellite service and coordination requirements shall not be imposed on the fixed-satellite service.
- 5.434** (SUP - WRC-97)
- 5.435** In Japan, in the band 3 620-3 700 MHz, the radiolocation service is excluded.
- 5.436** Not used.
- 5.437** (SUP - WRC-2000)
- 5.438** Use of the 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. However, passive sensing in the earth exploration-satellite and space research services may be authorized in this band on a secondary basis (no protection is provided by the radio altimeters).
- 5.439** *Additional allocation:* in Iran (Islamic Republic of) and Libya, the band 4 200-4 400 MHz is also allocated to the fixed service on a secondary basis. (WRC-2000)
- 5.440** The standard frequency and time signal-satellite service may be authorized to use the frequency 4 202 MHz for space-to-Earth transmissions and the frequency 6 427 MHz for Earth-to-space transmissions. Such transmissions shall be confined within the limits of ± 2 MHz of these frequencies, subject to agreement obtained under No. **9.21**.

- 5.441** The use of the bands 4 500-4 800 MHz (space-to-Earth), 6 725-7 025 MHz (Earth-to-space) by the fixed-satellite service shall be in accordance with the provisions of Appendix **30B**. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by geostationary-satellite systems in the fixed-satellite service shall be in accordance with the provisions of Appendix **30B**. The use of the bands 10.7-10.95 GHz (space-to Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)
- 5.442** In the 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.
- 5.443** *Different category of service:* in Argentina, Australia and Canada, the allocation of the bands 4 825-4 835 MHz and 4 950-4 990 MHz to the radio astronomy service is on a primary basis (see No. **5.33**).
- 5.443A** *Additional allocation:* The band 5 000-5 010 MHz is also allocated to the radionavigation-satellite service (Earth-to-space) on a primary basis. See Resolution **603 (WRC-2000)**. (WRC-2000)
- 5.443B** *Additional allocation:* The band 5 010-5 030 MHz is also allocated to the radionavigation-satellite service (space-to-Earth) (space-to-space) on a primary basis. 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 band 5 030-5 150 MHz by all the space stations within any radionavigation-satellite service system (space-to-Earth) operating in the band 5 010-5 030 MHz shall not exceed -124.5 dB(W/m²) in a 150 kHz band. In order not to cause harmful interference to the radio astronomy service in the band 4 990-5 000 MHz, the aggregate power flux-density produced in the 4 990-5 000 MHz band by all the space stations within any radionavigation satellite service (space-to-Earth) system operating in the 5 010-5 030 MHz band shall not exceed the provisional value of -171 dB(W/m²) in a 10 MHz band at any radio astronomy observatory site for more than 2% of the time. For the use of this band, Resolution **604 (WRC-2000)** applies. (WRC-2000)
- 5.444** The 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. The requirements of this system shall take precedence over other uses of this band. For the use of this band, No. **5.444A** and Resolution **114 (WRC-95)** apply. (WRC-2000)
- 5.444A** *Additional allocation:* the band 5 091-5 150 MHz is also allocated to the fixed-satellite service (Earth to-space) on a primary basis. This allocation is limited to feeder links of non-geostationary mobile-satellite systems and is subject to coordination under No. **9.11A**. In the band 5 091-5 150 MHz, the following conditions also apply:
- prior to 1 January 2010, the use of the band 5 091-5 150 MHz by feeder links of non-geostationary satellite systems in the mobile-satellite service shall be made in accordance with Resolution **114 (WRC-95)**;
 - prior to 1 January 2010, the requirements of existing and planned international standard systems for the aeronautical radionavigation service which cannot be met in the 5 000-5 091 MHz band, shall take precedence over other uses of this band;
 - after 1 January 2008, no new assignments shall be made to stations providing feeder links of nongeostationary mobile-satellite systems;
 - after 1 January 2010, the fixed-satellite service will become secondary to the aeronautical radionavigation service.
- 5.445** Not used.

- 5.446** *Additional allocation:* in the countries listed in Nos. **5.369** and **5.400**, the band 5 150-5 216 MHz is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis, subject to agreement obtained under No. **9.21**. In Region 2, the band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis. In Regions 1 and 3, except those countries listed in Nos. **5.369** and **5.400**, the band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a secondary basis. The use by the radiodetermination-satellite service is limited to feeder links in conjunction with the radiodetermination-satellite service operating in the bands 1 610-1 626.5 MHz and/or 2 483.5-2 500 MHz. The total power flux-density at the Earth's surface shall in no case exceed -159 dB(W/m²) in any 4 kHz band for all angles of arrival.
- 5.447** *Additional allocation:* in Germany, Austria, Belgium, Denmark, Spain, Estonia, Finland, France, Greece, Israel, Italy, Japan, Jordan, Lebanon, Liechtenstein, Lithuania, Luxembourg, Malta, Norway, Pakistan, the Netherlands, Portugal, Syria, the United Kingdom, Sweden, Switzerland and Tunisia, the band 5 150-5 250 MHz is also allocated to the mobile service, on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-2000)
- 5.447A** The allocation to the fixed-satellite service (Earth-to-space) is limited to feeder links of nongeostationary-satellite systems in the mobile-satellite service and is subject to coordination under No. **9.11A**.
- 5.447B** *Additional allocation:* the band 5 150-5 216 MHz is also allocated to the fixed-satellite service (space to-Earth) on a primary basis. This allocation is limited to feeder links of nongeostationary-satellite systems in the mobile-satellite service and is subject to provisions of No. **9.11A**. The power flux-density at the Earth's surface produced by space stations of the fixed-satellite service operating in the space-to-Earth direction in the band 5 150-5 216 MHz shall in no case exceed -164 dB(W/m²) in any 4 kHz band for all angles of arrival.
- 5.447C** Administrations responsible for fixed-satellite service networks in the band 5 150-5 250 MHz operated under Nos. **5.447A** and **5.447B** shall coordinate on an equal basis in accordance with No. **9.11A** with administrations responsible for non-geostationary-satellite networks operated under No. **5.446** and brought into use prior to 17 November 1995. Satellite networks operated under No. **5.446** brought into use after 17 November 1995 shall not claim protection from, and shall not cause harmful interference to, stations of the fixed-satellite service operated under Nos. **5.447A** and **5.447B**. **5.447D** The allocation of the band 5 250-5 255 MHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis. (WRC-97)
- 5.448** *Additional allocation:* in Austria, Azerbaijan, Bulgaria, Libya, Mongolia, Kyrgyzstan, Slovakia, the Czech Rep., Romania and Turkmenistan, the band 5 250-5 350 MHz is also allocated to the radionavigation service on a primary basis. (WRC-2000)
- 5.448A** The use of the frequency band 5 250-5 350 MHz by the earth exploration-satellite (active) and space research (active) services shall not constrain the future development and deployment of the radiolocation service. (WRC-97)
- 5.448B** The earth exploration-satellite (active) service operating in the band 5 350-5 460 MHz shall not cause harmful interference to, or constrain the use and development of, the aeronautical radionavigation service. (WRC-97)
- 5.449** The use of the band 5 350-5 470 MHz by the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons.
- 5.450** *Additional allocation:* in Austria, Azerbaijan, Bulgaria, Iran (Islamic Republic of), Mongolia, Kyrgyzstan, Slovakia, the Czech Rep., Romania, Turkmenistan and Ukraine, the band 5 470-5 650 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-97)
- 5.451** *Additional allocation:* in the United Kingdom, the band 5 470-5 850 MHz is also allocated to the land mobile service on a secondary basis. The power limits specified in Nos. **21.2**, **21.3**, **21.4** and **21.5** shall apply in the band 5 725-5 850 MHz.
- 5.452** Between 5 600 MHz and 5 650 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the maritime radionavigation service.

- 5.453** *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, Congo, Korea (Rep. of), Egypt, the United Arab Emirates, Gabon, Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Libya, Madagascar, Malaysia, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, the Dem. People's Rep. of Korea, Singapore, Swaziland, Tanzania, Chad and Yemen, the band 5 650-5 850 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-2000)
- 5.454** *Different category of service:* in Azerbaijan, Belarus, Georgia, Mongolia, Uzbekistan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 5 670-5 725 MHz to the space research service is on a primary basis (see No. **5.33**). (WRC-2000)
- 5.455** *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Cuba, Georgia, Hungary, Kazakstan, Latvia, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 5 670-5 850 MHz is also allocated to the fixed service on a primary basis.
- 5.456** *Additional allocation:* in Germany and in Cameroon, the band 5 755-5 850 MHz is also allocated to the fixed service on a primary basis.
- 5.457** Not used.
- 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 6 425-7 025 MHz and 7 075-7 250 MHz.
- 5.458A** In making assignments in the band 6 700-7 075 MHz to space stations of the fixed-satellite service, administrations are urged to take all practicable steps to protect spectral line observations of the radio astronomy service in the band 6 650-6 675.2 MHz from harmful interference from unwanted emissions.
- 5.458B** The space-to-Earth allocation to the fixed-satellite service in the band 6 700-7 075 MHz is limited to feeder links for non-geostationary satellite systems of the mobile-satellite service and is subject to coordination under No. **9.11A**. The use of the band 6 700-7 075 MHz (space-to-Earth) by feeder links for non-geostationary satellite systems in the mobile-satellite service is not subject to No. **22.2**.
- 5.458C** Administrations making submissions in the band 7 025-7 075 MHz (Earth-to-space) for geostationary-satellite systems in the fixed-satellite service after 17 November 1995 shall consult on the basis of relevant ITU-R Recommendations with the administrations that have notified and brought into use non-geostationary-satellite systems in this frequency band before 18 November 1995 upon request of the latter administrations. This consultation shall be with a view to facilitating shared operation of both geostationary-satellite systems in the fixed-satellite service and non-geostationary-satellite systems in this band.
- 5.459** *Additional allocation:* in Russian Federation, the frequency bands 7 100-7 155 MHz and 7 190-7 235 MHz are also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-97)
- 5.460** *Additional allocation:* the band 7 145-7 235 MHz is also allocated to the space research (Earth-to space) service on a primary basis, subject to agreement obtained under No. **9.21**. The use of the band 7 145-7 190 MHz is restricted to deep space; no emissions to deep space shall be effected in the band 7 190-7 235 MHz.
- 5.461** *Additional allocation:* the bands 7 250-7 375 MHz (space-to-Earth) and 7 900-8 025 MHz (Earth-to space) are also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. **9.21**.
- 5.461A** The use of the band 7 450-7 550 MHz by the meteorological-satellite service (space-to-Earth) is limited to geostationary-satellite systems. Non-geostationary meteorological-satellite systems in this band notified before 30 November 1997 may continue to operate on a primary basis until the end of their lifetime. (WRC-97)
- 5.461B** The use of the band 7 750-7 850 MHz by the meteorological-satellite service (space-to-Earth) is limited to non-geostationary satellite systems. (WRC-97)

- 5.462** (SUP - WRC-97)
- 5.462A** In Regions 1 and 3 (except for Japan), in the band 8 025-8 400 MHz, the earth exploration-satellite service using geostationary satellites shall not produce a power flux-density in excess of the following provisional values for angles of arrival (Θ), without the consent of the affected administration:
- | | |
|---|--|
| -174 dB(W/m ²) in a 4 kHz band | for $0^\circ \leq \Theta < 5^\circ$ |
| -174 + 0.5 ($\Theta - 5$) dB(W/m ²) in a 4 kHz band | for $5^\circ \leq \Theta < 25^\circ$ |
| -164 dB(W/m ²) in a 4 kHz band | for $25^\circ \leq \Theta \leq 90^\circ$ |
- These values are subject to study under Resolution **124 (WRC-97)***. (WRC-97)
- 5.463** Aircraft stations are not permitted to transmit in the band 8 025-8 400 MHz. (WRC-97)
- 5.464** (SUP - WRC-97)
- 5.465** In the space research service, the use of the band 8 400-8 450 MHz is limited to deep space.
- 5.466** *Different category of service:* in Israel, Malaysia, Singapore and Sri Lanka, the allocation of the band 8 400-8 500 MHz to the space research service is on a secondary basis (see No. **5.32**). (WRC-97)
- 5.467** *Alternative allocation:* in the United Kingdom, the band 8 400-8 500 MHz is allocated to the radiolocation and space research services on a primary basis.
- 5.468** *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burundi, Cameroon, China, the Congo, Costa Rica, Egypt, the United Arab Emirates, Gabon, Guyana, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Jordan, Kuwait, Lebanon, Libya, Malaysia, Mali, Morocco, Mauritania, Nepal, Nigeria, Oman, Pakistan, Qatar, Syria, Dem. People's Rep. of Korea, Senegal, Singapore, Somalia, Swaziland, Tanzania, Chad, Togo, Tunisia and Yemen, the band 8 500-8 750 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-97)
- 5.469** *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, Lithuania, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Rep., Romania, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 8 500-8 750 MHz is also allocated to the land mobile and radionavigation services on a primary basis. (WRC-2000)
- 5.469A** In the band 8 550-8 650 MHz, stations in the earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radiolocation service. (WRC-97)
- 5.470** The use of the band 8 750-8 850 MHz by the aeronautical radionavigation service is limited to airborne Doppler navigation aids on a centre frequency of 8 800 MHz.
- 5.471** *Additional allocation:* in Algeria, Germany, Bahrain, Belgium, China, the United Arab Emirates, France, Greece, Indonesia, Iran (Islamic Republic of), Libya, the Netherlands, Qatar and Sudan, the bands 8 825-8 850 MHz and 9 000-9 200 MHz are also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars only.
- 5.472** In the bands 8 850-9 000 MHz and 9 200-9 225 MHz, the maritime radionavigation service is limited to shore-based radars.
- 5.473** *Additional allocation:* in Armenia, Austria, Azerbaijan, Belarus, Bulgaria, Cuba, Georgia, Hungary, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Rep., Romania, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 8 850-9 000 MHz and 9 200-9 300 MHz are also allocated to the radionavigation service on a primary basis. (WRC-2000)
- 5.474** In the band 9 200-9 500 MHz, search and rescue transponders (SART) may be used, having due regard to the appropriate ITU-R Recommendation (see also Article 31).

- 5.475** 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. In the band 9 300-9 500 MHz, ground-based radars used for meteorological purposes have priority over other radiolocation devices.
- 5.476** In the band 9 300-9 320 MHz in the radionavigation service, the use of shipborne radars, other than those existing on 1 January 1976, is not permitted until 1 January 2001.
- 5.476A** In the band 9 500-9 800 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 radionavigation and radiolocation services. (WRC-97)
- 5.477** *Different category of service:* in Algeria, Saudi Arabia, Austria, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Japan, Jordan, Kuwait, Lebanon, Liberia, Malaysia, Nigeria, Oman, Pakistan, Qatar, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, Sweden, Trinidad and Tobago, and Yemen, the allocation of the band 9 800-10 000 MHz to the fixed service is on a primary basis (see No. **5.33**). (WRC-2000)
- 5.478** *Additional allocation:* in Azerbaijan, Bulgaria, Mongolia, Kyrgyzstan, Slovakia, the Czech Rep., Romania, Turkmenistan and Ukraine, the band 9 800-10 000 MHz is also allocated to the radionavigation service on a primary basis. (WRC-2000)
- 5.479** The band 9 975-10 025 MHz is also allocated to the meteorological-satellite service on a secondary basis for use by weather radars.
- 5.480** *Additional allocation:* in Argentina, Brazil, Chile, Costa Rica, Cuba, El Salvador, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Peru, Uruguay and Venezuela, the band 10-10.45 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-2000)
- 5.481** *Additional allocation:* in Germany, Angola, Brazil, China, Costa Rica, El Salvador, Ecuador, Spain, Guatemala, Japan, Morocco, Nigeria, Oman, Uzbekistan, Paraguay, Peru, the Dem. People's Rep. of Korea, Sweden, Tanzania, Thailand and Uruguay, the band 10.45-10.5 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-2000)
- 5.482** In the band 10.6-10.68 GHz, stations of the fixed and mobile, except aeronautical mobile, services shall be limited to a maximum equivalent isotropically radiated power of 40 dBW and the power delivered to the antenna shall not exceed -3 dBW. These limits may be exceeded subject to agreement obtained under No. **9.21**. However, in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Bangladesh, Belarus, China, the United Arab Emirates, Georgia, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Kazakstan, Kuwait, Latvia, Lebanon, Moldova, Nigeria, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the restrictions on the fixed and mobile, except aeronautical mobile, services are not applicable.
- 5.483** *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, China, Colombia, Korea (Rep. of), Costa Rica, Egypt, the United Arab Emirates, Georgia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kazakstan, Kuwait, Latvia, Lebanon, Moldova, Mongolia, Uzbekistan, Qatar, Kyrgyzstan, the Dem. People's Rep. of Korea, Romania, the Russian Federation, Tajikistan, Turkmenistan, Ukraine, Yemen and Yugoslavia, the band 10.68-10.7 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985. (WRC-2000)
- 5.484** In Region 1, the use of the band 10.7-11.7 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.

- 5.484A** The use of the bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.75 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Region 1, 13.75-14.5 GHz (Earth-to-space), 17.8-18.6 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 27.5-28.6 GHz (Earth-to-space), 29.5-30 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. 9.12 for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)
- 5.485** In Region 2, in the band 11.7-12.2 GHz, transponders on space stations in the fixed-satellite service may be used additionally for transmissions in the broadcasting-satellite service, provided that such transmissions do not have a maximum e.i.r.p. greater than 53 dBW per television channel and do not cause greater interference or require more protection from interference than the coordinated fixed-satellite service frequency assignments. With respect to the space services, this band shall be used principally for the fixed-satellite service.
- 5.486** *Different category of service:* in Mexico and the United States, the allocation of the band 11.7-12.1 GHz to the fixed service is on a secondary basis (see No. **5.32**).
- 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 provisions of the Regions 1 and 3 Plan in Appendix **30**. (WRC-2000)
- 5.487A** *Additional allocation:* in Region 1, the band 11.7-12.5 GHz, in Region 2, the band 12.2-12.7 GHz and, in Region 3, the band 11.7-12.2 GHz, are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis, limited to non-geostationary systems and subject to application of the provisions of No. 9.12 for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the broadcasting-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)
- 5.488** The use of the band 11.7-12.2 GHz by geostationary-satellite networks in the fixed-satellite service in Region 2 is subject to the provisions of Resolution **77 (WRC-2000)**. For the use of the band 12.2-12.7 GHz by the broadcasting-satellite service in Region 2, see Appendix **30**. (WRC-2000)
- 5.489** *Additional allocation:* in Peru, the band 12.1-12.2 GHz is also allocated to the fixed service on a primary basis.
- 5.490** In Region 2, in the band 12.2-12.7 GHz, existing and future terrestrial radiocommunication services shall not cause harmful interference to the space services operating in conformity with the broadcasting-satellite Plan for Region 2 contained in Appendix **30**.
- 5.491** *Additional allocation:* in Region 3, the band 12.2-12.5 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. The power flux-density limits in Table **21-4** of Article **21** shall apply to this frequency band. The introduction of the service in relation to the broadcasting-satellite service in Region 1 shall follow the procedures specified in Article 7 of Appendix **30**, with the applicable frequency band extended to cover 12.2-12.5 GHz. (WRC-2000)

- 5.492** Assignments to stations of the broadcasting-satellite service which are in conformity with the appropriate regional Plan or included in the Regions 1 and 3 List in Appendix 30 may also be used for transmissions in the fixed-satellite service (space-to-Earth), provided that such transmissions do not cause more interference, or require more protection from interference, than the broadcasting-satellite service transmissions operating in conformity with the Plan or the List, as appropriate. (WRC-2000)
- 5.493** The broadcasting-satellite service in the band 12.5-12.75 GHz in Region 3 is limited to a power flux density not exceeding $-111 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$ for all conditions and for all methods of modulation at the edge of the service area. (WRC-97)
- 5.494** *Additional allocation:* in Algeria, Angola, Saudi Arabia, Bahrain, Cameroon, the Central African Rep., the Congo, Côte d'Ivoire, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Gabon, Ghana, Guinea, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Madagascar, Mali, Morocco, Mongolia, Nigeria, Qatar, Dem. Rep. of the Congo, Syria, Senegal, Somalia, Sudan, Chad, Togo and Yemen, the band 12.5-12.75 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-97)
- 5.495** *Additional allocation:* in Bosnia and Herzegovina, Croatia, Denmark, France, Greece, Liechtenstein, Monaco, Uganda, Portugal, Romania, Slovenia, Switzerland, Tanzania, Tunisia and Yugoslavia, the band 12.5-12.75 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis. (WRC-2000)
- 5.496** *Additional allocation:* in Austria, Azerbaijan, Kyrgyzstan and Turkmenistan, the band 12.5-12.75 GHz is also allocated to the fixed service and the mobile, except aeronautical mobile, service on a primary basis. However, stations in these services shall not cause harmful interference to fixed-satellite service earth stations of countries in Region 1 other than those listed in this footnote. Coordination of these earth stations is not required with stations of the fixed and mobile services of the countries listed in this footnote. The power flux-density limit at the Earth's surface given in Table 21-4 of Article 21, for the fixed-satellite service shall apply on the territory of the countries listed in this footnote. (WRC-2000)
- 5.497** The use of the band 13.25-13.4 GHz by the aeronautical radionavigation service is limited to Doppler navigation aids.
- 5.498** (SUP - WRC-97)
- 5.498A** The Earth exploration-satellite (active) and space research (active) services operating in the band 13.25-13.4 GHz shall not cause harmful interference to, or constrain the use and development of, the aeronautical radionavigation service. (WRC-97)
- 5.499** *Additional allocation:* in Bangladesh, India and Pakistan, the band 13.25-14 GHz is also allocated to the fixed service on a primary basis.
- 5.500** *Additional allocation:* in Algeria, Angola, Saudi Arabia, Bahrain, Brunei Darussalam, Cameroon, Egypt, the United Arab Emirates, Gabon, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Madagascar, Malaysia, Mali, Malta, Morocco, Mauritania, Nigeria, Pakistan, Qatar, Syria, Senegal, Singapore, Sudan, Chad and Tunisia, the band 13.4-14 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-2000)
- 5.501** *Additional allocation:* in Austria, Azerbaijan, Hungary, Japan, Mongolia, Kyrgyzstan, Romania, the United Kingdom and Turkmenistan, the band 13.4-14 GHz is also allocated to the radionavigation service on a primary basis. (WRC-2000)
- 5.501A** The allocation of the band 13.4-13.75 GHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis. (WRC-97)
- 5.501B** In the band 13.4-13.75 GHz, the Earth exploration-satellite (active) and space research (active) services shall not cause harmful interference to, or constrain the use and development of, the radiolocation service. (WRC-97)

- 5.502** In the band 13.75-14 GHz, an earth station in the fixed-satellite service shall have a minimum antenna diameter of 4.5 m and the e.i.r.p. of any emission should be at least 68 dBW and should not exceed 85 dBW. 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. The protection of assignments to receiving space stations in the fixed-satellite service operating with earth stations that, individually, have an e.i.r.p. of less than 68 dBW shall not impose constraints on the operation of the radiolocation and radionavigation stations operating in accordance with the Radio Regulations. No. **5.43A** does not apply. See Resolution **733 (WRC-2000)**. (WRC-2000)
- 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:
- 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 71 dBW in the 6 MHz band from 13.772 to 13.778 GHz;
 - 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 the 6 MHz band in this frequency range 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. of 71 dBW or 51 dBW, as appropriate, in the 6 MHz band in clear-sky conditions. (WRC-2000)
- 5.503A** Until 1 January 2000, stations in the fixed-satellite service shall not cause harmful interference to non-geostationary space stations in the space research and Earth exploration-satellite services. After that date, these nongeostationary space stations will operate on a secondary basis in relation to the fixed-satellite service. Additionally, when planning earth stations in the fixed-satellite service to be brought into service between 1 January 2000 and 1 January 2001, in order to accommodate the needs of spaceborne precipitation radars operating in the band 13.793-13.805 GHz, advantage should be taken of the consultation process and the information given in Recommendation **ITU-R SA.1071**.
- 5.504** The use of the band 14-14.3 GHz by the radionavigation service shall be such as to provide sufficient protection to space stations of the fixed-satellite service.
- 5.505** *Additional allocation:* in Algeria, Angola, Saudi Arabia, Bahrain, Bangladesh, Botswana, Brunei Darussalam, Cameroon, China, Congo, Korea (Rep. of), Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lesotho, Lebanon, Malaysia, Mali, Morocco, Mauritania, Oman, Pakistan, the Philippines, Qatar, Syria, the Dem. People's Rep. Of Korea, Senegal, Singapore, Somalia, Sudan, Swaziland, Tanzania, Chad and Yemen, the band 14-14.3 GHz is also allocated to the fixed service on a primary basis. (WRC-2000)
- 5.506** The band 14-14.5 GHz may be used, within the fixed-satellite service (Earth-to-space), for feeder links for the broadcasting-satellite service, subject to coordination with other networks in the fixed-satellite service. Such use of feeder links is reserved for countries outside Europe.
- 5.507** Not used.
- 5.508** *Additional allocation:* in Germany, Bosnia and Herzegovina, France, Greece, Ireland, Iceland, Italy, The Former Yugoslav Republic of Macedonia, Libya, Liechtenstein, Portugal, the United Kingdom, Slovenia, Switzerland and Yugoslavia, the band 14.25-14.3 GHz is also allocated to the fixed service on a primary basis. (WRC-2000)
- 5.509** *Additional allocation:* in Japan the band 14.25-14.3 GHz is also allocated to the mobile, except aeronautical mobile, service on a primary basis. (WRC-2000)
- 5.510** The use of the 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.

- 5.511** *Additional allocation:* in Saudi Arabia, Bahrain, Bosnia and Herzegovina, Cameroon, Egypt, the United Arab Emirates, Guinea, Iran (Islamic Republic of), Iraq, Israel, Kuwait, Lebanon, Libya, Pakistan, Qatar, Syria, Slovenia, Somalia and Yugoslavia, the band 15.35-15.4 GHz is also allocated to the fixed and mobile services on a secondary basis. (WRC-97)
- 5.511A** The band 15.43-15.63 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. Use of the band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth and Earth-to-space) is limited to feeder links of non-geostationary systems in the mobile-satellite service, subject to coordination under No. **9.11A**. The use of the frequency band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth) is limited to feeder links of non-geostationary systems in the mobile-satellite service for which advance publication information has been received by the Bureau prior to 2 June 2000. In the space-to-Earth direction, the minimum earth station elevation angle above and gain towards the local horizontal plane and the minimum coordination distances to protect an earth station from harmful interference shall be in accordance with Recommendation ITU-R S.1341. In order to protect the radio astronomy service in the band 15.35-15.4 GHz, the aggregate power flux-density radiated in the 15.35-15.4 GHz band by all the space stations within any feeder-link of a non-geostationary system in the mobile-satellite service (space-to-Earth) operating in the 15.43-15.63 GHz band shall not exceed the level of -156 dB(W/m²) in a 50 MHz bandwidth, into any radio astronomy observatory site for more than 2% of the time. (WRC-2000)
- 5.511B** (SUP - WRC-97)
- 5.511C** Stations operating in the aeronautical radionavigation service shall limit the effective e.i.r.p. in accordance with Recommendation ITU-R S.1340. 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. (WRC-97)
- 5.511D** Fixed-satellite service systems for which complete information for advance publication has been received by the Bureau by 21 November 1997 may operate in the bands 15.4-15.43 GHz and 15.63-15.7 GHz in the space-to-Earth direction and 15.63-15.65 GHz in the Earth-to-space direction. In the bands 15.4-15.43 GHz and 15.65-15.7 GHz, emissions from a non-geostationary space station shall not exceed the power flux-density limits at the Earth's surface of -146 dB(W/(m² · MHz)) for any angle of arrival. In the band 15.63-15.65 GHz, where an administration plans emissions from a non-geostationary space station that exceed -146 dB(W/(m² · MHz)) for any angle of arrival, it shall coordinate under No. **9.11A** with the affected administrations. Stations in the fixed-satellite service operating in the band 15.63-15.65 GHz in the Earth-to-space direction shall not cause harmful interference to stations in the aeronautical radionavigation service (No. **4.10** applies). (WRC-97)
- 5.512** *Additional allocation:* in Algeria, Angola, Saudi Arabia, Austria, Bahrain, Bangladesh, Bosnia and Herzegovina, Brunei Darussalam, Cameroon, the Congo, Costa Rica, Egypt, El Salvador, the United Arab Emirates, Finland, Guatemala, India, Indonesia, Iran (Islamic Republic of), Jordan, Kuwait, Libya, Malaysia, Morocco, Mozambique, Nepal, Nicaragua, Oman, Pakistan, Qatar, Singapore, Slovenia, Somalia, Sudan, Swaziland, Tanzania, Chad, Yemen and Yugoslavia, the band 15.7-17.3 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-97)
- 5.513** *Additional allocation:* in Israel, the band 15.7-17.3 GHz is also allocated to the fixed and mobile services on a primary basis. These services shall not claim protection from or cause harmful interference to services operating in accordance with the Table in countries other than those included in No. **5.512**.
- 5.513A** Spaceborne active sensors operating in the band 17.2-17.3 GHz shall not cause harmful interference to, or constrain the development of, the radiolocation and other services allocated on a primary basis. (WRC-97)
- 5.514** *Additional allocation:* in Algeria, Germany, Angola, Saudi Arabia, Austria, Bahrain, Bangladesh, Bosnia and Herzegovina, Cameroon, Costa Rica, El Salvador, the United Arab Emirates, Finland, Guatemala, Honduras, India, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Libya, Nepal, Nicaragua, Oman, Pakistan, Qatar, Slovenia, Sudan and Yugoslavia, the band 17.3-17.7 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits given in Nos. **21.3** and **21.5** shall apply. (WRC-2000)

- 5.515** In the band 17.3-17.8 GHz, sharing between the fixed-satellite service (Earth-to-space) and the broadcasting-satellite service shall also be in accordance with the provisions of § 1 of Annex 4 of Appendix **30A**.
- 5.516** The use of the band 17.3-18.1 GHz by geostationary-satellite systems in the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. The use of the band 17.3-17.8 GHz in Region 2 by systems in the fixed-satellite service (Earth-to-space) is limited to geostationary satellites. For the use of the band 17.3-17.8 GHz in Region 2 by feeder links for the broadcasting-satellite service in the band 12.2-12.7 GHz, see Article 11. The use of the bands 17.3-18.1 GHz (Earth-to-space) in Regions 1 and 3 and 17.8-18.1 GHz (Earth-to-space) in Region 2 by non-geostationary-satellite systems in the fixed-satellite service is subject to application of the provisions of No. 9.12 for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)
- 5.517** In Region 2, the allocation to the broadcasting-satellite service in the band 17.3-17.8 GHz shall come into effect on 1 April 2007. After that date, use of the fixed-satellite (space-to-Earth) service in the band 17.7-17.8 GHz shall not claim protection from and shall not cause harmful interference to operating systems in the broadcasting-satellite service.
- 5.518** *Different category of service:* in Region 2, the allocation of the band 17.7-17.8 GHz to the mobile service is on a primary basis until 31 March 2007.
- 5.519** *Additional allocation:* the band 18.1-18.3 GHz is also allocated to the meteorological-satellite service (space-to-Earth) on a primary basis. Its use is limited to geostationary satellites and shall be in accordance with the provisions of Article **21**, Table **21-4**.
- 5.520** The use of the band 18.1-18.4 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links of geostationary-satellite systems in the broadcasting-satellite service. (WRC-2000)
- 5.521** *Alternative allocation:* in Germany, Denmark, the United Arab Emirates, Greece and Slovakia, the band 18.1-18.4 GHz is allocated to the fixed, fixed-satellite (space-to-Earth) and mobile services on a primary basis (see No. **5.33**). The provisions of No. **5.519** also apply. (WRC-2000)
- 5.522** (SUP - WRC-2000)
- 5.522A** The emissions of the fixed service and the fixed-satellite service in the band 18.6-18.8 GHz are limited to the values given in Nos. **21.5A** and **21.16.2**, respectively. (WRC-2000)
- 5.522B** The use of the band 18.6-18.8 GHz by the fixed-satellite service is limited to geostationary systems and systems with an orbit of apogee greater than 20 000 km. (WRC-2000)
- 5.522C** In the band 18.6-18.8 GHz, in Algeria, Saudi Arabia, Bahrain, Egypt, the United Arab Emirates, Jordan, Lebanon, Libya, Morocco, Oman, Qatar, Syria, Tunisia and Yemen, fixed-service systems in operation at the date of entry into force of the Final Acts of WRC-2000 are not subject to the limits of No. **21.5A**. (WRC-2000)
- 5.523** (SUP - WRC-2000)
- 5.523A** The use of the bands 18.8-19.3 GHz (space-to-Earth) and 28.6-29.1 GHz (Earth-to-space) by geostationary and non-geostationary fixed-satellite service networks is subject to the application of the provisions of No. **9.11A** and No. **22.2** does not apply. Administrations having geostationary-satellite networks under coordination prior to 18 November 1995 shall cooperate to the maximum extent possible to coordinate pursuant to No. **9.11A** with non-geostationary-satellite networks for which notification information has been received by the Bureau prior to that date, with a view to reaching results acceptable to all the parties concerned. Non-geostationary-satellite networks shall not cause unacceptable interference to geostationary fixed-satellite service networks for which complete Appendix 4 notification information is considered as having been received by the Bureau prior to 18 November 1995. (WRC-97)

- 5.523B** The use of the band 19.3-19.6 GHz (Earth-to-space) by the fixed-satellite service is limited to feeder links for non-geostationary-satellite systems in the mobile-satellite service. Such use is subject to the application of the provisions of No. **9.11A**, and No. **22.2** does not apply.
- 5.523C** No. **22.2** shall continue to apply in the bands 19.3-19.6 GHz and 29.1-29.4 GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix 4 coordination information, or notification information, is considered as having been received by the Bureau prior to 18 November 1995. (WRC-97)
- 5.523D** The use of the band 19.3-19.7 GHz (space-to-Earth) by geostationary fixed-satellite service systems and by feeder links for non-geostationary-satellite systems in the mobile-satellite service is subject to the application of the provisions of No. **9.11A**, but not subject to the provisions of No. **22.2**. The use of this band for other nongeostationary fixed-satellite service systems, or for the cases indicated in Nos. **5.523C** and **5.523E**, is not subject to the provisions of No. **9.11A** and shall continue to be subject to Articles **9** (except No. **9.11A**) and **11** procedures, and to the provisions of No. **22.2**. (WRC-97)
- 5.523E** No. **22.2** shall continue to apply in the bands 19.6-19.7 GHz and 29.4-29.5 GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix 4 coordination information, or notification information, is considered as having been received by the Bureau by 21 November 1997. (WRC-97)
- 5.524** *Additional allocation:* in Afghanistan, Algeria, Angola, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, the Congo, Costa Rica, Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Nigeria, Oman, Pakistan, the Philippines, Qatar, the Dem. Rep. of the Congo, Syria, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, Tanzania, Chad, Togo and Tunisia, the band 19.7-21.2 GHz is also allocated to the fixed and mobile services on a primary basis. This additional use shall not impose any limitation on the power flux-density of space stations in the fixed-satellite service in the band 19.7-21.2 GHz and of space stations in the mobile-satellite service in the band 19.7-20.2 GHz where the allocation to the mobile-satellite service is on a primary basis in the latter band. (WRC-2000)
- 5.525** In order to facilitate interregional coordination between networks in the mobile-satellite and fixed satellite services, carriers in the mobile-satellite service that are most susceptible to interference shall, to the extent practicable, be located in the higher parts of the bands 19.7-20.2 GHz and 29.5-30 GHz.
- 5.526** In the bands 19.7-20.2 GHz and 29.5-30 GHz in Region 2, and in the bands 20.1-20.2 GHz and 29.9-30 GHz in Regions 1 and 3, networks which are both in the fixed-satellite service and in the mobile-satellite service may include links between earth stations at specified or unspecified points or while in motion, through one or more satellites for point-to-point and point-to-multipoint communications.
- 5.527** In the bands 19.7-20.2 GHz and 29.5-30 GHz, the provisions of No. **4.10** do not apply with respect to the mobile-satellite service.
- 5.528** The allocation to the mobile-satellite service is intended for use by networks which use narrow spotbeam antennas and other advanced technology at the space stations. Administrations operating systems in the mobile-satellite service in the band 19.7-20.1 GHz in Region 2 and in the band 20.1-20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of No. **5.524**.
- 5.529** The use of the bands 19.7-20.1 GHz and 29.5-29.9 GHz by the mobile-satellite service in Region 2 is limited to satellite networks which are both in the fixed-satellite service and in the mobile-satellite service as described in No. **5.526**.
- 5.530** In Regions 1 and 3, the allocation to the broadcasting-satellite service in the band 21.4-22 GHz shall come into effect on 1 April 2007. The use of this band by the broadcasting-satellite service after that date and on an interim basis prior to that date is subject to the provisions of Resolution **525 (WARC-92)**.
- 5.531** *Additional allocation:* in Japan, the band 21.4-22 GHz is also allocated to the broadcasting service on a primary basis.

- 5.532** The use of the band 22.21-22.5 GHz by the Earth exploration-satellite (passive) and space research (passive) services shall not impose constraints upon the fixed and mobile, except aeronautical mobile, services.
- 5.533** The inter-satellite service shall not claim protection from harmful interference from airport surface detection equipment stations of the radionavigation service.
- 5.534** *Additional allocation:* in Japan, the band 24.65-25.25 GHz is also allocated to the radionavigation service on a primary basis until 2008.
- 5.535** In the band 24.75-25.25 GHz, feeder links to stations of the broadcasting-satellite service shall have priority over other uses in the fixed-satellite service (Earth-to-space). Such other uses shall protect and shall not claim protection from existing and future operating feeder-link networks to such broadcasting satellite stations.
- 5.535A** The use of the band 29.1-29.5 GHz (Earth-to-space) by the fixed-satellite service is limited to geostationary-satellite systems and feeder links to non-geostationary-satellite systems in the mobile-satellite service. Such use is subject to the application of the provisions of No. **9.11A**, but not subject to the provisions of No. **22.2**, except as indicated in Nos. **5.523C** and **5.523E** where such use is not subject to the provisions of No. **9.11A** and shall continue to be subject to Articles **9** (except No. **9.11A**) and **11** procedures, and to the provisions of No. **22.2**. (WRC-97)
- 5.536** Use of the 25.25-27.5 GHz band by the inter-satellite service is limited to space research and Earth exploration-satellite applications, and also transmissions of data originating from industrial and medical activities in space.
- 5.536A** Administrations installing Earth exploration-satellite service earth stations cannot claim protection from stations in the fixed and mobile services operated by neighbouring administrations. In addition, earth stations operating in the Earth exploration-satellite service should take into account Recommendation ITU-R SA.1278. (WRC-2000)
- 5.536B** In Germany, Saudi Arabia, Austria, Belgium, Brazil, Bulgaria, China, Korea (Rep. of), Denmark, Egypt, United Arab Emirates, Spain, Estonia, Finland, France, Hungary, India, Iran (Islamic Republic of), Ireland, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Liechtenstein, Lithuania, Moldova, Norway, Oman, Uganda, Pakistan, the Philippines, Poland, Portugal, Syria, Slovakia, the Czech Rep., Romania, the United Kingdom, Singapore, Sweden, Switzerland, Tanzania, Turkey, Viet Nam and Zimbabwe, earth stations operating in the Earth exploration-satellite service in the band 25.5-27 GHz shall not claim protection from, or constrain the use and deployment of, stations of the fixed and mobile services. (WRC-97)
- 5.537** Space services using non-geostationary satellites operating in the inter-satellite service in the band 27-27.5 GHz are exempt from the provisions of No. **22.2**.
- 5.537A** In Bhutan, Indonesia, Iran (Islamic Republic of), Japan, Maldives, Mongolia, Myanmar, Pakistan, the Dem. People's Rep. of Korea, Sri Lanka, Thailand and Viet Nam, the allocation to the fixed service in the band 27.5-28.35 GHz may also be used by high altitude platform stations (HAPS). The use of the band 27.5-28.35 GHz by HAPS is 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. (WRC-2000)
- 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. In the band 27.500-27.501 GHz, such space-to-Earth transmissions shall not produce a power flux-density in excess of the values specified in Article **21**, Table **21-4** on the Earth's surface.
- 5.539** The band 27.5-30 GHz may be used by the fixed-satellite service (Earth-to-space) for the provision of feeder links for the broadcasting-satellite service.
- 5.540** *Additional allocation:* the band 27.501-29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for up-link power control.

- 5.541** In the band 28.5-30 GHz, the earth exploration-satellite service is limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.
- 5.541A** Feeder links of non-geostationary networks in the mobile-satellite service and geostationary networks in the fixed-satellite service operating in the band 29.1-29.5 GHz (Earth-to-space) shall employ uplink adaptive power control or other methods of fade compensation, such that the earth station transmissions shall be conducted at the power level required to meet the desired link performance while reducing the level of mutual interference between both networks. These methods shall apply to networks for which Appendix 4-coordination information is considered as having been received by the Bureau after 17 May 1996 and until they are changed by a future competent world radiocommunication conference. Administrations submitting Appendix 4 information for coordination before this date are encouraged to utilize these techniques to the extent practicable. (WRC-2000)
- 5.542** *Additional allocation:* in Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, Congo, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guinea, India, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Pakistan, the Philippines, Qatar, Syria, the Dem. People's Rep. of Korea, Somalia, Sudan, Sri Lanka and Chad, the band 29.5-31 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits specified in Nos. **21.3** and **21.5** shall apply. (WRC-2000)
- 5.543** The band 29.95-30 GHz may be used for space-to-space links in the Earth exploration-satellite service for telemetry, tracking, and control purposes, on a secondary basis.
- 5.53A** In Bhutan, Indonesia, Iran (Islamic Republic of), Japan, Maldives, Mongolia, Myanmar, Pakistan, the Dem. People's Rep. of Korea, Sri Lanka, Thailand and Viet Nam, the allocation to the fixed service in the band 31-31.3 GHz may also be used by high altitude platform stations (HAPS) in the ground-to-HAPS direction. The use of the band 31-31.3 GHz by systems using HAPS shall not cause harmful interference to, nor claim protection from, other types of fixed-service systems or other co-primary services, taking into account No. **5.545**. The use of HAPS in the band 31-31.3 GHz shall not cause harmful interference to the passive services having a primary allocation in the band 31.3-31.8 GHz, taking into account the interference criteria given in Recommendations ITU-R SA.1029 and ITU-R RA.769. The administrations of the countries listed above are urged to limit the deployment of HAPS in the band 31-31.3 GHz to the lower half of this band (31-31.15 GHz) until WRC-03. (WRC-2000)
- 5.544** In the band 31-31.3 GHz the power flux-density limits specified in Article **21**, Table **21-4** shall apply to the space research service.
- 5.545** *Different category of service:* in Armenia, Azerbaijan, Belarus, Georgia, Mongolia, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 31-31.3 GHz to the space research service is on a primary basis (see No. **5.33**). (WRC-2000)
- 5.546** *Different category of service:* in Saudi Arabia, Armenia, Azerbaijan, Belarus, Egypt, the United Arab Emirates, Spain, Estonia, Finland, Georgia, Hungary, Iran (Islamic Republic of), Israel, Jordan, Latvia, Lebanon, Moldova, Mongolia, Uzbekistan, Poland, Syria, Kyrgyzstan, Romania, the United Kingdom, the Russian Federation, Tajikistan, Turkmenistan, Turkey and Ukraine, the allocation of the band 31.5-31.8 GHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. **5.33**). (WRC-2000)
- 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 Resolutions **75 (WRC-2000)** and **79 (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, administrations should further take into account potential constraints to high density applications in the fixed service, as appropriate (see Resolution **84 (WRC-2000)**). (WRC-2000)
- 5.547A** Administrations should take practical measures to minimize the potential interference between stations in the fixed service and airborne stations in the radionavigation service in the 31.8-33.4 GHz band, taking into account the operational needs of the airborne radar systems. (WRC-2000)

- 5.547B** *Alternative allocation:* in the United States, the band 31.8-32 GHz is allocated to the radionavigation and space research (deep space) (space-to-Earth) services on a primary basis. (WRC-97)
- 5.547C** *Alternative allocation:* in the United States, the band 32-32.3 GHz is allocated to the inter-satellite, radionavigation and space research (deep space) (space-to-Earth) services on a primary basis. (WRC-97)
- 5.547D** *Alternative allocation:* in the United States, the band 32.3-33 GHz is allocated to the inter-satellite and radionavigation services on a primary basis. (WRC-97)
- 5.547E** *Alternative allocation:* in the United States, the band 33-33.4 GHz is allocated to the radionavigation service on a primary basis. (WRC-97)
- 5.548** In designing systems for the inter-satellite and radionavigation services 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**).
- 5.549** *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Egypt, the United Arab Emirates, Gabon, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Malaysia, Mali, Malta, Morocco, Mauritania, Nepal, Nigeria, Oman, Pakistan, the Philippines, Qatar, Dem. Rep. of the Congo, Syria, Senegal, Singapore, Somalia, Sudan, Sri Lanka, Togo, Tunisia and Yemen, the band 33.4-36 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-97)
- 5.550** *Different category of service:* in Armenia, Azerbaijan, Belarus, Georgia, Mongolia, Uzbekistan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 34.7-35.2 GHz to the space research service is on a primary basis (see No. **5.33**). (WRC-2000)
- 5.551** (SUP - WRC-97)
- 5.551A** In the band 35.5-36.0 GHz, 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 meteorological aids service and other services allocated on a primary basis. (WRC-97)
- 5.551AA** In the bands 37.5-40 GHz and 42-42.5 GHz, non-geostationary-satellite systems in the fixed-satellite service should employ power control or other methods of downlink fade compensation of the order of 10 dB, such that the satellite transmissions are at power levels required to meet the desired link performance while reducing the level of interference to the fixed service. The use of downlink fade compensation methods are under study by the ITU-R (see Resolution 84 (WRC-2000)). (WRC-2000)
- 5.551B** (SUP - WRC-2000)
- 5.551C** (SUP - WRC-2000)
- 5.551D** (SUP - WRC-2000)
- 5.551E** (SUP - WRC-2000)
- 5.551F** *Different category of service:* in Japan, the allocation of the band 41.5-42.5 GHz to the mobile service is on a primary basis (see No. **5.33**). (WRC-97)
- 5.551G** In order to protect the radio astronomy service in the band 42.5-43.5 GHz, the aggregate power flux density in the 42.5-43.5 GHz band produced by all the space stations in any non-geostationary-satellite system in the fixed-satellite service (space-to-Earth) or in the broadcasting-satellite service (space-to-Earth) system operating in the 41.5-42.5 GHz band shall not exceed -167 dB(W/m²) in any 1 MHz band at the site of a radio astronomy station for more than 2% of the time. The power flux-density in the band 42.5-43.5 GHz produced by any geostationary station in the fixed-satellite service (space-to-Earth) or in the broadcasting-satellite service (space-to-Earth) operating in the band 42-42.5 GHz shall not exceed -167 dB(W/m²) in any 1 MHz band at the site of a radio astronomy station. These limits are provisional and will be reviewed in accordance with Resolution **128 (Rev.WRC-2000)**. (WRC-2000)

- 5.552** The allocation of the spectrum for the fixed-satellite service in the bands 42.5-43.5 GHz and 47.2-50.2 GHz for Earth-to-space transmission is greater than that in the band 37.5-39.5 GHz for space-to-Earth transmission in order to accommodate feeder links to broadcasting satellites. Administrations are urged to take all practicable steps to reserve the band 47.2-49.2 GHz for feeder links for the broadcasting-satellite service operating in the band 40.5-42.5 GHz.
- 5.552A** The allocation to the fixed service in the bands 47.2-47.5 GHz and 47.9-48.2 GHz is designated for use by high altitude platform stations. The use of the bands 47.2-47.5 GHz and 47.9-48.2 GHz is subject to the provisions of Resolution **122 (WRC-97)***. (WRC-97)
- 5.553** In the bands 43.5-47 GHz and 66-71 GHz, stations in the land mobile service may be operated subject to not causing harmful interference to the space radiocommunication services to which these bands are allocated (see No. **5.43**). (WRC-2000)
- 5.554** In the bands 43.5-47 GHz, 66-71 GHz, 95-100 GHz, 123-130 GHz, 191.8-200 GHz and 252-265 GHz, satellite links connecting land stations at specified fixed points are also authorized when used in conjunction with the mobile-satellite service or the radionavigation-satellite service. (WRC-2000)
- 5.555** *Additional allocation:* the band 48.94-49.04 GHz is also allocated to the radio astronomy service on a primary basis. (WRC-2000)
- 5.555A** The band 50.2-50.4 GHz is also allocated, on a primary basis, to the fixed and mobile services until 1 July 2000. (WRC-97)
- 5.556** In the bands 51.4-54.25 GHz, 58.2-59 GHz and 64-65 GHz, radio astronomy observations may be carried out under national arrangements. (WRC-2000)
- 5.556A** Use of the bands 54.25-56.9 GHz, 57-58.2 GHz and 59-59.3 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density at all altitudes from 0 km to 1 000 km above the Earth's surface produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, shall not exceed – 147 dB(W/(m² · 100 MHz)) for all angles of arrival. (WRC-97)
- 5.556B** *Additional allocation:* in Japan, the band 54.25-55.78 GHz is also allocated to the mobile service on a primary basis for low-density use. (WRC-97)
- 5.557** *Additional allocation:* in Japan, the band 55.78-58.2 GHz is also allocated to the radiolocation service on a primary basis. (WRC-97)
- 5.557A** In the band 55.78-56.26 GHz, in order to protect stations in the Earth exploration-satellite service (passive), the maximum power density delivered by a transmitter to the antenna of a fixed service station is limited to –26 dB(W/MHz). (WRC-2000)
- 5.558** In the bands 55.78-58.2 GHz, 59-64 GHz, 66-71 GHz, 122.25-123 GHz, 130-134 GHz, 167-174.8 GHz and 191.8-200 GHz, stations in the aeronautical mobile service may be operated subject to not causing harmful interference to the inter-satellite service (see No. **5.43**). (WRC-2000)
- 5.558A** Use of the band 56.9-57 GHz by inter-satellite systems is limited to links between satellites in geostationary-satellite orbit and to transmissions from non-geostationary satellites in high-Earth orbit to those in low-Earth orbit. For links between satellites in the geostationary-satellite orbit, the single entry power flux-density at all altitudes from 0 km to 1 000 km above the Earth's surface, for all conditions and for all methods of modulation, shall not exceed –147 dB(W/(m² · 100 MHz)) for all angles of arrival. (WRC-97)
- 5.559** In the band 59-64 GHz, airborne radars in the radiolocation service may be operated subject to not causing harmful interference to the inter-satellite service (see No. **5.43**). (WRC-2000)
- 5.559A** The band 75.5-76 GHz is also allocated to the amateur and amateur-satellite services on a primary basis until the year 2006. (WRC-2000)
- 5.560** In the band 78-79 GHz radars located on space stations may be operated on a primary basis in the Earth exploration-satellite service and in the space research service.

- 5.561** In the band 74-76 GHz, stations in the fixed, mobile and broadcasting services shall not cause harmful interference to stations of the fixed-satellite service or stations of the broadcasting-satellite service operating in accordance with the decisions of the appropriate frequency assignment planning conference for the broadcasting satellite service. (WRC-2000)
- 5.561A** The 81-81.5 GHz band is also allocated to the amateur and amateur-satellite services on a secondary basis. (WRC-2000)
- 5.561B** In Japan, use of the band 84-86 GHz, by the fixed-satellite service (Earth-to-space) is limited to feeder links in the broadcasting-satellite service using the geostationary-satellite orbit. (WRC-2000)
- 5.562** The use of the band 94-94.1 GHz by the Earth exploration-satellite (active) and space research (active) services is limited to spaceborne cloud radars. (WRC-97)
- 5.562A** In the bands 94-94.1 GHz and 130-134 GHz, transmissions from space stations of the Earth exploration-satellite service (active) that are directed into the main beam of a radio astronomy antenna have the potential to damage some radio astronomy receivers. Space agencies operating the transmitters and the radio astronomy stations concerned should mutually plan their operations so as to avoid such occurrences to the maximum extent possible. (WRC-2000)
- 5.562B** In the bands 105-109.5 GHz, 111.8-114.25 GHz, 155.5-158.5 GHz and 217-226 GHz, the use of this allocation is limited to space-based radio astronomy only. (WRC-2000)
- 5.562C** Use of the band 116-122.25 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, at all altitudes from 0 km to 1 000 km above the Earth's surface and in the vicinity of all geostationary orbital positions occupied by passive sensors, shall not exceed $-148 \text{ dB(W/(m}^2 \text{ _ MHz))}$ for all angles of arrival. (WRC-2000)
- 5.562D** *Additional allocation:* In Korea (Rep. of), the bands 128-130 GHz, 171-171.6 GHz, 172.2-172.8 GHz and 173.3-174 GHz are also allocated to the radio astronomy service on a primary basis until 2015. (WRC-2000)
- 5.562E** The allocation to the Earth exploration-satellite service (active) is limited to the band 133.5-134 GHz. (WRC-2000)
- 5.562F** In the band 155.5-158.5 GHz, the allocation to the Earth exploration-satellite (passive) and space research (passive) services shall terminate on 1 January 2018. (WRC-2000)
- 5.562G** The date of entry into force of the allocation to the fixed and mobile services in the band 155.5-158.5 GHz shall be 1 January 2018. (WRC-2000)
- 5.562H** Use of the bands 174.8-182 GHz and 185-190 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, at all altitudes from 0 to 1 000 km above the Earth's surface and in the vicinity of all geostationary orbital positions occupied by passive sensors, shall not exceed $-144 \text{ dB(W/(m}^2 \text{ _ MHz))}$ for all angles of arrival. (WRC-2000)
- 5.563** *Additional allocation:* in the United Kingdom, the band 182-185 GHz is also allocated to the fixed and mobile services on a primary basis.
- 5.563A** In the bands 200-209 GHz, 235-238 GHz, 250-252 GHz and 265-275 GHz, ground-based passive atmospheric sensing is carried out to monitor atmospheric constituents. (WRC-2000)
- 5.563B** The band 237.9-238 GHz is also allocated to the Earth exploration-satellite service (active) and the space research service (active) for spaceborne cloud radars only. (WRC-2000)
- 5.564** (SUP - WRC-2000)

- 5.565** The frequency band 275-1 000 GHz may be used by administrations for experimentation with, and development of, various active and passive services. In this band a need has been identified for the following spectral line measurements for passive services:
- 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): 275-277 GHz, 294-306 GHz, 316-334 GHz, 342-349 GHz, 363-365 GHz, 371-389 GHz, 416-434 GHz, 442-444 GHz, 496-506 GHz, 546-568 GHz, 624-629 GHz, 634-654 GHz, 659-661 GHz, 684-692 GHz, 730-732 GHz, 851-853 GHz and 951-956 GHz.

Future research in this largely unexplored spectral region may yield additional spectral lines and continuum bands of interest to the passive services. Administrations are urged to take all practicable steps to protect these passive services from harmful interference until the date when the allocation Table is established in the abovementioned frequency band. (WRC-2000)

PART D– MALAYSIAN FOOTNOTES

- MLA1** Users of frequencies below 9 kHz shall ensure that no harmful interference is caused to the services to which the bands above 9 kHz are allocated.
- MLA2** Scientific researchers using frequencies below 9 kHz are urged to advise the Commission in order that such research may be afforded all practicable protection from harmful interference.
- MLA3** Provided no harmful interference is caused to stations of 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 Malaysia's national borders and with a mean power not exceeding 50 W.
- MLA4** The following frequencies are exclusively use by the Government of Malaysia:
3,025 KHz to 3,155 KHz;
4,700 KHz to 4,750 KHz;
6,685 KHz to 6,765 KHz;
8,965 KHz to 9,040 KHz;
11,175 KHz to 11,275 KHz;
13,200 KHz to 13,260 KHz;
15,010 KHz to 15,100 KHz;
17,970 KHz to 18,030 KHz;
30.010 MHz to 37.500 MHz;
41.015 MHz to 44.000 MHz;
44.000 MHz to 47.000 MHz;
47.000 MHz to 50.000 MHz;
50.000 MHz to 54.000 MHz;
54.000 MHz to 68.000 MHz;
72.800 MHz to 74.800 MHz;
75.200 MHz to 75.400 MHz;
75.400 MHz to 87.000 MHz;
223.000 MHz to 230.000 MHz;
230.000 MHz to 235.000 MHz;
267.000 MHz to 272.000 MHz;
272.000 MHz to 273.000 MHz;
273.000 MHz to 312.000 MHz;
312.000 MHz to 315.000 MHz;
315.000 MHz to 322.000 MHz;
322.000 MHz to 328.600 MHz;
335.400 MHz to 387.000 MHz;
387.000 MHz to 390.000 MHz;
390.000 MHz to 399.900 MHz;
1,400.000 MHz to 1,427.000 MHz;
2,700.000 MHz to 2,900.000 MHz;
2,900.000 MHz to 3,100.000 MHz;
3,100.000 MHz to 3,300.000 MHz;
3,300.000 MHz to 3,400.000 MHz;
5,460.000 MHz to 5,470.000 MHz;
5,470.000 MHz to 5,650.000 MHz;
9,500.000 MHz to 9,800.000 MHz;
9,800.000 Mhz to 10,000.000 MHz.
- MLA5** Provided no harmful interference is caused to stations of the maritime mobile service, frequencies in the band 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 Malaysia's national borders and with a mean power not exceeding 50 W.
- MLA6** Provided no harmful interference is 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 Malaysia's national borders, and with a total radiated power not exceeding 24 dBW.
- MLA7** Provided no harmful interference to the broadcasting service, the frequencies between 47 MHz and

68 MHz may be used by stations of the fixed and mobile services communicating only within Malaysia's national borders.

- MLA8** Frequency band 70 - 72 MHz is allocated for civilian use and 72.8 - 74.8 MHz is for exclusive use of the Government of Malaysia.
- MLA9** Frequency band between 75.2 MHz and 78 MHz is assigned to the Government of Malaysia'. The transmitter power of the stations shall not exceed 5 W.
- MLA10** Suppressed
- MLA11** Frequency band between 141 MHz and 142.6 MHz is assigned for private network for fixed and mobile services.
- MLA12** The frequency band between 144 MHz and 148 MHz is restricted to the amateur service.
- MLA13** Fixed and mobile services operating in the band between 174 MHz and 230 MHz shall not cause harmful interference to the broadcasting service.
- MLA14** Frequency band between 225 MHz and 235 MHz is assigned to the Government of Malaysia; and stations in any service in this band shall not cause harmful interference to stations of the broadcasting service.
- MLA16** The bands 470MHz – 510 MHz is allocated for Mobile services.
- MLA17** The fixed service in the bands 1,429MHz to 1,452 MHz and 8,400MHz to 8,500MHz is for civil use only.
- MLA18** The space operation service in the band between 1,525MHz to 1,535MHz is solely used for telemetering.
- MLA19** The band between 1,660.5MHz to 1,690MHz is restricted for the use to the Government of Malaysia, may be permitted for the fixed and mobile except aeronautical mobile services.
- MLA20** SUPPRESSED
- MLA21** The space operation service in the band 1,427MHz to 1,429MHz is for telecommand.
- MLA22** The fixed service in the band 7,075MHz to 7,250MHz is may be allocated to the Government of Malaysia on a restricted basis.
- MLA23** SUPPRESSED
- MLA24** SUPPRESSED
- MLA25** Use of frequencies in the band 490 - 510 kHz must be such as to provide full protection for distress and safety communications on 500 kHz.
- MLA26** The following bands are exclusively for the use of the Government of Malaysia and in relation to Appendix 26 of the ITU Radio Regulations:
3,025KHz to 3,155KHz;
4,700KHz to 4,750KHz;
5,680KHz to 5,730KHz;
6,685KHz to 6,765KHz;
8,965KHz to 9,040KHz;
11,175KHz to 11,275KHz;
13,200KHz to 13,260KHz;
15,010KHz to 15,100KHz;
17,970KHz to 18,030KHz.
- MLA27** The following portion of the bands may be used for Low Power Devices throughout Malaysia:
117.00KHz to 126KHz;
1,606.50KHz to 1800.00KHz;
26.175MHz to 26.500MHz;
27.500MHz to 29.700MHz;

40.020MHz to 40.980MHz;
 44.000MHz to 50.000MHz;
 156.8375MHz to 230.0000MHz;
 273.0000MHz to 322.0000MHz;
 403.0000MHz to 406.0000MHz;
 410.0000MHz to 420.0000MHz;
 430.0000MHz to 438.0000MHz;
 450.0000MHz to 585.0000MHz;
 806.0000MHz to 960.0000MHz;
 2300.00MHz to 2,483.50MHz;
 5,725MHz to 5,925.00MHz;
 43.5GHz to 47.0GHz;
 57.0GHz to 64.0GHz;
 76.0GHz to 77.5GHz.

- MLA28** Band is used for Industrial, Scientific and Medical (ISM) purposes.
- MLA29** Portion of the band is sub-allocated for the various cellular phone services in Malaysia: ATUR 450, (E-TAC) 900, (AMPS/D.AMPS) 800, GSM 900 and GSM 1800.
- MLA30** Portion of these bands 456.00MHz to 459.00MHz and 460.00MHz to 470.00MHz are used for walkie-talkie (point-to-point)
- MLA31** The frequency band 174 - 230 MHz is planned for Digital Audio Broadcast (DAB) service.
- MLA32** The frequency band 510 - 798 MHz is planned for Digital Terrestrial Television Broadcasting (DTTB) service.
- MLA33** The frequency band 470 - 510 MHz is allocated for Digital Mobile Service.
- MLA34** The frequency bands filed for MEASAT Satellite Network are as shown in the Chapter III, Part 3.4 General Table of Frequencies Information
- MLA35** The frequency bands 3400 - 3700 MHz, 10000 - 10700 MHz is allocated for Fixed Wireless Access (FWA) service.
- MLA36** The frequency band 24.25 – 27.00 GHz is allocated for Local Multipoint Communication Service (LMCS). The frequency bands 27.00 - 29.50 GHz and 31.00 - 31.30 GHz are reserved for extension band for LMCS / FSS.
- MLA37** The frequency band 380 - 400 MHz is allocated for Digital Trunk Radio Service.
- MLA38** The frequency band 2504 – 2688 MHz is planned for IMT 2000 extension band
- MLA39** The frequency bands 1697.8 - 1699.2 MHz, 1705.08 - 1708.2 MHz, 2201.95 - 2210 MHz, 2221 - 2234 MHz and 7952 - 8500 MHz are allocated for Earth Exploration-Satellite service.
- MLA40** The frequency band 1885 – 2025 MHz and 2110 – 2200 MHz is allocated for International Mobile Telecommunications Services (IMT 2000) in Malaysia



CHAPTER 3

Frequency Band Plans

Malaysian Spectrum Plan
Malaysian Spectrum Plan



PART A – INTRODUCTION

3.1 Background

Under the requirements of the Communications and Multimedia Act 1998, (Act 588 or CMA), the Commission is charged with managing the Malaysian spectrum and is required to develop a spectrum plan in order to optimize the usage of the frequency spectrum and facilitate the development of radio services in Malaysia in accordance with the national policy objectives.

The table of Malaysian frequency band plans was developed based on national priorities and conforms to the ITU frequency allocations. This band plan, which is supported by appropriate national legislation and spectrum regulations, is reviewed regularly to ensure that it reflects and meets fully the current national requirements.

PART B- GENERAL FREQUENCY INFORMATION

3.2 Spectrum Frequency Band Categories

The ITU categorizes the relevant continuous radio spectrum, from 3 kHz through to 3,000 GHz, into nine frequency ranges or bands (4 through 12), as shown in the table below.

Band Number	Symbol	Band	Frequency Range (lower limit exclusive, upper limit inclusive)
4	VLF	Very Low Frequency	3 - 30 kHz
5	LF	Low Frequency	30 - 300 kHz
6	MF	Medium Frequency	300 - 3000 kHz
7	HF	High Frequency	3 - 30 MHz
8	VHF	Very High Frequency	30 - 300 MHz
9	UHF	Ultra High Frequency	300 - 3000 MHz
10	SHF	Super High Frequency	3 - 30 GHz
11	EHF	Extremely High Frequency	30 - 300 GHz
12	THF	Tremendously High Frequency	300 - 3000 GHz

Note: Frequency Range = 0.3×10^N Hz to 3×10^N Hz
for Band Numbers 'N' ranging from N=4 to N=11

PART C- TABLE OF FREQUENCY BAND PLANS

3.3 Background

The following table presents the frequency band plans for the present and future use of the frequency spectrum in Malaysia within the bands defined in Part B, i.e. between 3kHz and 3000GHz¹.

- 3.3.1 Frequency planning in Malaysia normally conforms to the services allocated by the ITU for Region 3. It is important for Region 3 countries to harmonize the use of the bands in each country so as to minimize interference and ease coordination between these countries.
- 3.3.2 Services permitted in Malaysia and countries in Region 3, with the exception of Japan, are a function of the availability of equipment as provided by the manufacturing countries, including Malaysia.
- 3.3.3 If there is a need to open up new services in an existing or a new band, the Commission may conduct a series of studies and monitoring exercise in order to identify existing activities in that band. If required, a planned migration and phasing out of these services shall be effected in a time frame agreed to between the users and the Commission in order to accommodate new services.
- 3.3.4 The Commission may issue from time to time a Standard Radio System Plan (SRSP) to provide the technical guidelines and operational requirements for the efficient use of the frequency bands.

¹ frequencies below 9 kHz and above 275 Ghz are currently unallocated in Malaysia

3.4 Table of Frequency Band Plans

The table of frequency bands is divided into the following column categories:

Frequency Band:	The range of frequencies associated with the allocations (in MHz). The frequency indicated as the start of the band is the centre frequency of the first channel included within the band. The frequency used to denote the end of the band is not included in the band.
Allocation:	This column indicates the main services to which each band is to be allocated. The service types are as defined by the ITU, and the allocations are in most cases consistent with the ITU Radio Regulations for Region 3
Allotments:	This column gives details of any allotments within a band, including proposed usage of the sub-band and range of frequencies. Where no sub-bands are indicated the column may in some cases provide further details of the proposed usage of the band.
Notes and comments :	The comments in the right hand column give further information concerning the band, in particular when changes to its usage are proposed. This may include details such as major utilisation, the nature of the usage and implication for migration.

The following table and supporting notes outlines radio services offered or planned in Malaysia and also the associated channels and/or frequency ranges.

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
0.003 - 0.030	Radionavigation, Fixed, Maritime Mobile, Standard Frequency And Time Signal	Below 9 kHz 9-14kHz Radionavigation 14-19.95kHz Fixed and Maritime Mobile. 19.95-20.05kHz Standard Frequency and Time Signal 20.05-30kHz Fixed and Maritime Mobile.	Not allocated to any service. Not used in Malaysia
0.030-0.300	Radionavigation, Fixed, Maritime Mobile, Maritime Radionavigation And Aeronautical Radionavigation	30-70kHz Fixed and Maritime Mobile 70-90kHz and 110-160 kHz Radionavigation, Fixed, Maritime Mobile 90-110 kHz Radionavigation and Fixed	Used mostly by Department of Civil Aviation and petroleum companies

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		160-190 kHz Fixed and Aeronautical Radionavigation 190-200kHz Aeronautical Radionavigation 285-300kHz Maritime Radionavigation and Aeronautical Radionavigation.	
0.300-3.000	Maritime Radionavigation, Aeronautical Radionavigation, Maritime Mobile, Mobile.	300-526.5kHz For Maritime Radionavigation, Aeronautical Radionavigation and Maritime Mobile 526.5-1800kHz Broadcasting, Fixed, Mobile, Radiolocation and Radionavigation 1800-2000 kHz Amateur, Fixed, Mobile (except Aeronautical Mobile), Radionavigation	500 kHz for Distress and Calling Frequency for Morse Telegraphy and Maritime Mobile. Broadcasting services in the band between 526.5- 1606.5kHz are used mostly by Radio, Television Malaysia (RTM). Used mostly for amateur service and shared with maritime mobiles.

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		2000-2300kHz Fixed, Mobile And Maritime Mobile 2300-2495kHz Fixed, Mobile And Broadcasting 2495-2502kHz Standard Frequency And Time Signal 2505-3025kHz Fixed, Mobile and Aeronautical Mobile	Mobile use mainly for distress calling frequencies for radiotelephony, digital selective calling, narrow band direct printing telegraphy. Assigned for Standard Frequency and Time Signal Band between 1606.5 and 985kHz is assigned for Radiolocation service and the band between 1985 to 3000kHz is allocated to the military applications.
3-30	Aeronautical Mobile (OR), Fixed, Mobile (except aeronautical mobile (R)), Broadcasting, Amateur, Maritime Mobile, Aeronautical Mobile (R), Standard Frequency And Time Signal, Space Research, Amateur Satellite, Radio Astronomy.	3025-3155kHz Aeronautical Mobile (OR) 2850kHz to 3155kHz	Assignments to be coordinated with the regional ICAO Office based in Bangkok, Thailand via The Dept Of Civil Aviation Military Use

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		3400-3500kHz) 3900-3950kHz) 4650-4750kHz) 5480-5730kHz) 6525-6765kHz) 8815-9040kHz) 10005-10100kHz) 11175-11400kHz) 13200-13360kHz) 17900-18030kHz) 21924-22000kHz) 23200-23350kHz) 4000-4438kHz) 6200-6525kHz) 8100-8815kHz) 12230-13200kHz) 16360-17410kHz) 19680-19800kHz) 22000-22855kHz) 25070-25210kHz) 26100-26175kHz) 26175-27500kHz)	<p>Shared Bands Aeronautical Mobile (OR) with Fixed Services.</p> <p>Several bands are allocated for Maritime Mobile Service on a primary basis. Frequency Assignments conforms to Appendix S17 of the ITU Radio Regulation</p> <p>Shared Band Fixed and Mobile</p>

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		HF Broadcasting 3200-3400kHz 3900-4000kHz 4750-4995kHz 5005-5060kHz 5900-6200kHz 7100-7350kHz 9400-9900kHz 11600-12100kHz 13570-13800kHz 15100-15800kHz 17480-17900kHz 18900-19020kHz 21450-21850kHz 25670-26100kHz 26965 - 27275kHz 26957.28 to 27282.72 kHz 27525kHz	Sharing with Fixed and Mobile Service Sharing with Aeronautical Mobile and Fixed Service Sharing with Fixed and Mobile Service Sharing with Fixed Service All assignments are to be coordinated with neighbouring countries and to be registered with ITU Shared use for Personal Communication Service (PRS) and low power device. Refer to Class Assignments/ Exemption Order 2000 for the details

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		3155-3200kHz 4438-4650kHz 5060-5450kHz 5730-5900kHz 6765-7000kHz 7350-8100kHz 9900-9995kHz 10100-11175kHz) 12100-12230kHz) 13410-13570kHz) 13870-14000kHz) 14350-14990kHz) 15800-16360kHz) 17410-17480kHz) 18030-18068kHz) 19020-19680kHz 19800-19990kHz 21850-21924kHz 22855-23000kHz	Fixed and Mobile (except aeronautical mobile (R)) Fixed only Sharing with Mobile Fixed only Fixed only

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		18168-18780kHz 20010-21000kHz 23000-23200kHz 23350-24890kHz 25010-25070kHz 25210-25550kHz 26175-27500kHz	Fixed sharing with Mobile
		Standard Frequency and Time Signal. 4995-5003kHz 5003-5005kHz	Sharing with Space Research
		9995-10003kHz 10003-10005kHz	Sharing with Space Research
		14990-15005kHz	
		15005-15010kHz 19990-19995kHz	Sharing with Space Research.
		19995-20010kHz 24990-25005kHz 25005-25010kHz	Sharing with Space Research.

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		<p>Amateur and Amateur Satellite. 3500-3900kHz 7000-7100kHz 14000-14250kHz 14250-14350kHz 18068-18168kHz 21000-21450kHz 24890-24990kHz 28000-29700kHz</p> <p>Radio Astronomy 13360-13410kHz</p> <p>25550-25670kHz 10000-19000kHz</p>	<p>Sharing with Fixed and Mobile. Sharing with Amateur Satellite Sharing with Amateur Satellite Sharing with Fixed Service Mainly used for Fixed links for very long distance communication and are intended for Government agencies, Military and Embassies applications. Applications for Civilian use could be considered based on non availability of other fixed services- safety and locality</p>

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		3155kHz and 30000kHz	Shared use between Malaysia, Singapore and Brunei which most of it had been assigned for Military, Government, Foreign Embassies and Civilian use.
30 - 300	Space Operation, Fixed, Mobile, Space Research, Aeronautical Radio Navigation, Aeronautical Mobile, Meteorological Satellite, Mobile Satellite, Amateur Satellite, Amateur and Broadcasting.	30 - 70MHz SPACE OPERATION 30.005 - 30.01MHZ 137 - 138MHz 272 - 273MHz VHF Broadcasting 47 - 68MHz (Band I)	Used for broadcasting on primary basis. The Police Dept and military on limited basis also use the band. Sharing with Fixed, Mobile and Space Research Sharing with Meteorological Satellite, Mobile Satellite Space Research, Fixed and Mobile services Sharing with Fixed and Mobile. TV Channels 2 to 4. This Band I is to be gradually vacated to make way for Fixed and Mobile services.

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		<p>87 - 108MHz (Band II)</p> <p>174 - 230MHz (Band III)</p> <p>70 to 79.0MHz</p> <p>74.6 - 74.8MHz and 75.2 - 75.4MHz</p> <p>AERONAUTICAL RADIO NAVIGATION 74.8-75.2MHz 108 - 117.975MHz 223 - 235MHz</p> <p>79.0 - 87.5MHz</p> <p>117.975 - 137MHz</p>	<p>Mainly used for FM Radio Broadcasting.</p> <p>TV Channels 5 to 12. This Band III is gradually to be vacated to make way for Digital Audio Broadcast (DAB) services.</p> <p>Allocated for military and police throughout Malaysia.</p> <p>Assignment for Aeronautical marker beacons only</p> <p>Sharing with Mobile, Fixed and Broadcasting</p> <p>Sharing bands between police, leased channel operators, telemetry service</p> <p>Assigned for Aeronautical Mobile (R) service</p>

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		<p>MOBILE SATELLITE</p> <p>137-137.025MHz 137.75-137.825MHz 148-149.9MHZ 149.9 - 150.05MHz</p> <p>137 – 144 MHz</p> <p>AMATEUR / AMATEUR SATELLITE</p> <p>144 - 146MHz 146 - 148MHz</p> <p>156.7625-156.8375MHz</p> <p>169MHz and 279 - 280MHz</p>	<p>Allocated for the use of Orbcomm Satellite service. Sharing with Radio Navigation Satellite Service.</p> <p>Fixed and Mobile Services</p> <p>Sharing with Fixed and Mobile services</p> <p>For distress and calling. Maritime Mobile service utilizing the International Maritime Hague Plan frequencies, which are available for use for Port Operation and Ship Movement Services. The frequency band for these services is between 156.050 to 157.450MHz.</p> <p>Allocated for Paging services</p>

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		230 - 300MHz	Military use only
300 - 3000	Fixed, Mobile, Radio Astronomy, Aeronautical Radionavigation, Mobile Satellite, Radionavigation Satellite, Standard Frequency and Time Signal, Meteorological Aids, Meteorological Satellite, Space Research, Space Operation, Radiolocation, Broadcasting, Maritime Mobile Satellite Aeronautical Mobile Satellite (R), Earth Exploration Satellite, Broadcasting Satellite, Fixed Satellite.	300 - 399.9MHz 380 - 400MHz AERONAUTICAL RADIONAVIGATION 328.6 - 335.4MHz METEOROLOGICAL AIDS, METEOROLOGICAL SATELLITE 400.15 - 406MHz 405 and 415MHz	Military use Allocated for Digital Trunk Radio Service. Utilized mainly by Dept of Civil Aviation in Malaysia. Sharing with Mobile Satellite, Space Research, Fixed and Mobile. Mainly used by the Meteorological Dept. Allocated for private Fixed service by military and oil and gas companies.

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		<p>MOBILE SATELLITE</p> <p>406 - 406.1MHz</p> <p>FIXED, MOBILE AND BROADCASTING</p> <p>406.1 - 806MHz</p> <p>407 and 417MHz</p> <p>415 - 420MHz and 425 - 430MHz</p> <p>RADIOLOCATION</p> <p>430 - 440MHz</p>	<p>Assigned to Mobile Satellite Service (Earth To Space) and is limited to low power emergency position indicating radio beacons (epirb).</p> <p>Band shared with Fixed, Mobile and Broadcasting services.</p> <p>Band assigned to Trunked Radio Service localized</p> <p>Band assigned to Radio in Local Loop (RILL) in Malaysia. The band is also plan to be used for Digital Trunking in the future.</p> <p>Assigned for Fixed and Mobile service. Assignments are also for Radiolocation Service.</p>

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		439 and 449Mhz	Wireless LAN
		443 and 448MHz	Available for Mobile services for private networks (W/T using repeater stations)
		457 and 467MHz	Radio Leased Channel service throughout Malaysia
		452 - 456.5MHz and 462 - 466.5MHz	Cellular Service (NMT450/ATUR)
		456, 466MHz and 477MHz	Walkie Talkie and Personal Communication Service (PRS). See Exemption Order/Class Assignment for details
		458 and 468MHz	Assigned to Police Dept.
		UHF BROADCASTING	
		470 - 806MHz (Band IV and V)	TV Channels 21 to 62.

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		470 - 518MHz	Channels 21 - 26 are for Mobile Data Service in Malaysia. Channels 27 to 60 are currently used for Analogue TV broadcasting. The band IV and V are planned to be reassigned for Digital Terrestrial Television Broadcasting (DTTB) in the future
		806-960 MHz	Shared bands
		806-821 MHz and 851-866 MHz	800MHz Analog Trunk Radio Service. The band is also planned for Digital Radio Trunking
		824 to 960 MHz	Cellular and Cordless Telephony (CT2).
		929-932 MHz	Paging Service (return path for 280MHz band).
		Aeronautical Radionavigation 960-1215 MHz	Assigned to Department of Civil Aviation Malaysia

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		<p>Radiolocation and Radionavigation Satellite, Earth Exploration Satellite, Radio Astronomy and Space Research 1215-1427 MHz</p> <p>Space Operation, Fixed, Mobile, Broadcasting and Broadcasting Satellite 1427-1525 MHz</p> <p>1525-1660 MHz Mobile Satellite, Aeronautical Radionavigation and Radio Navigation Satellite</p> <p>1660-2300 MHz Radio Astronomy, Mobile Satellite, Space Research, Meteorological Aids, Meteorological Satellite, and Earth Exploration Satellite.</p>	<p>To be assigned when required</p> <p>Shared Bands. Part of the bands also planned for Digital Audio Broadcast (DAB) for both terrestrial and satellite</p> <p>Shared bands. Part of the band is assigned for Mobile Satellite Service (IRIDIUM)</p> <p>Sharing with Fixed and Mobile services. Portion of the band 1885 Mhz to 2025 MHz and 2110 Mhz to 2200 Mhz is allocated for IMT 2000 on primary basis.</p>

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		<p>1710-1785 MHz and 1805-1880MHz</p> <p>1880-2200 MHz</p> <p>2200-3000 MHz. Space Operation, Earth Exploration Satellite, Space Research, Radiolocation, Mobile Satellite, Fixed Satellite, Broadcasting Satellite, Radionavigation and Aeronautical Radionavigation</p> <p>2400-2483 MHz</p> <p>2480-2700 MHz</p>	<p>Band divided into three (3) of 25 MHz band blocks for GSM 1800 [previously known as Personal Communication Network (PCN)] Service in Malaysia</p> <p>Portion of this band is allocated for Cordless Telephony Service and IMT 2000</p> <p>Presently these frequencies are used for microwave fixed link, multi access radio network. (MARS)</p> <p>ISM band for low power application</p> <p>Point to Multipoint including pay TV service in Malaysia</p>

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
3,000-30,000	Radionavigation, Radiolocation, Fixed, Mobile, Fixed Satellite, Aeronautical Radionavigation, Radio Astronomy, Maritime Radionavigation, Meteorological Satellite, Earth Exploration Satellite, Space Research, Broadcasting, Broadcasting Satellite, Intersatellite, Amateur and Amateur Satellite	3300-4200 MHz 4400-5000 MHz 5650-8750 MHz 9800-10450 MHz 10500-10680 Hz 10700-13250 MHz 13400-15350 MHz 15700-17300 MHz 17700-23600 MHz 24250-30000 MHz 3400-3700 MHz 10,000-10,300 MHz 40,000-40,300 MHz 5915-6425 MHz 6430-7110 MHz 7111-7425 MHz 7425-7725 MHz 7725-8275 MHz 8275-8500 MHz 10,550-10,680 MHz 10,700-11,700 MHz	Allocated for Fixed service. The channelling plans for these bands (mostly microwave fixed link) are done according to the ITU-R Recommendation and all assignments are in conformity with these plans. Band 24250 Mhz to 29500 is allocated for LMCS. Allocated for Wireless Local Loop (WLL). Assigned to microwave fixed links on primary basis.

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		5945-6385 MHz 13784-14,404 MHz	The C and KU band frequencies respectively are allocated for Satellite News Gathering (SNG) service in Malaysia.
		Radionavigation 2900-3100 MHz 4200-4400 MHz) 5000-5150 MHz)	Aeronautical Radionavigation
		5150-5250 MHz	Sharing with Fixed Satellite service.
		5470-5670 MHz	Maritime Radio Navigation
		8750-8850 MHz	Aeronautical
		8850-9000 MHz	Maritime
		9000-9200 MHz 9200-9300 MHz	Aeronautical Maritime sharing with Radiolocation.
		9300-9500 MHz 9500-9800 MHz	Sharing with Radiolocation
		13250-13400 MHz 14000-14300 MHz	Aeronautical sharing with Fixed Satellite Service and Fixed Services.

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		15400-15700 MHz 24250-24,450 MHz 3100-3300 MHz 3300-3400 5250-5350 MHz 5650-5850 MHz 8500-8750 MHz 8750-9000 MHz 9200-9300 MHz 9500-10,550 MHz 13400-14000 MHz 15700-17300 MHz 24050-24250 MHz	Sharing with Fixed Satellite services Sharing with Fixed and Mobile Services. Sharing with Fixed and Mobile services. Sharing with Fixed and Mobile services Sharing with Maritime Radionavigation service Sharing with Fixed, Mobile and Fixed Satellite Services
		FIXED SATELLITE 3400-4200 MHz	Sharing with Fixed service (WLL).

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		4500-4800 MHz	Sharing with Fixed and Mobile Services
		5150-5250 MHz	Sharing with Radio Navigation Services
		5850-7075 MHz 7250-7750 MHz 7900-8400 MHz 10,700-11,700 MHz	Sharing with Fixed, Mobile and Meteorological Satellite Services.
		12,500-12,750 MHz 12,700-13,250 MHz	Sharing with Broadcasting Satellite Service
		13750-14800 MHz	Sharing with Fixed, Mobile, Radiolocation and Radionavigation
		15400-15700 MHz	Sharing with Radionavigation
		17300-21200 MHz	Sharing with Fixed, Mobile and Mobile Satellite Services
		24750-25250 MHz	Sharing with Fixed, Mobile services
		27000-30000 MHz	Sharing with mobile, Mobile Satellite and Inter Satellite Services.

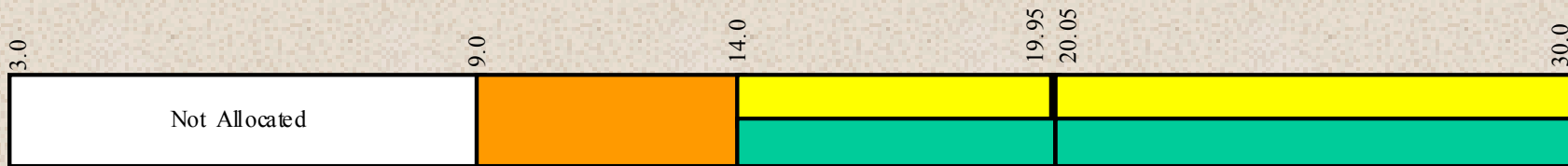
FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		<p>BROADCASTING SATELLITE</p> <p>11.7-12.2GHz 12.5-12.75GHz</p> <p>21.4-22.0GHz</p> <p>EARTH EXPLORATION SATELLITE</p> <p>10.60-10.70GHz 15.35-15.40GHz 21.20-21.40GHz 22.21-22.50GHz 23.60-24.00GHz</p> <p>INTER SATELLITE LINKS</p> <p>23-23.55GHz 24.45-24.75GHz 25.25-27.5GHz</p>	<p>Assigned for Direct to Home (DTH) service in Malaysia (ASTRO)</p> <p>Sharing with Fixed, Mobile, Broadcasting and Fixed Satellite services.</p> <p>Sharing With Fixed, Mobile, Radio Astronomy and Space Research.</p> <p>Sharing With Fixed, Mobile, Radionavigation and Fixed Satellite service.</p>

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		MOBILE SATELLITE 20.1-20.2GHz 29.9-30.0GHz 24.25-29.5 GHz 31.00-31.30GHz	Sharing With Fixed, Mobile, and Fixed Satellite Service Allocated for Local Multipoint Communication Service (LMCS)
30000-300000	Fixed Satellite, Mobile Satellite, Fixed, Mobile, Radioastronomy, Space Research, Radionavigation Meteorological Aids, Radiolocation, Fixed Satellite, Broadcasting Satellite, Broadcasting, Radionavigation Satellite, Amateur, Amateur Satellite, Earth Exploration Satellite, Intersatellite	FIXED SATELLITE 30-31GHz 37.5-40.5GHz 42.5-43.5GHz 47.2-50.2GHz 50.4-51.4GHz 71-75.5GHz 81-84GHz 92-95GHz 102-105GHz 149-164GHz 202-217GHz 231-241GHz 265-275GHz	Sharing with Mobile Satellite service Sharing with Fixed and Mobile Service Part of the frequency bands already assigned to MEASAT Satellite System consisting of the Multimedia Satellite Systems. (Constellation Of LEOs, MEOs and GSO satellites)

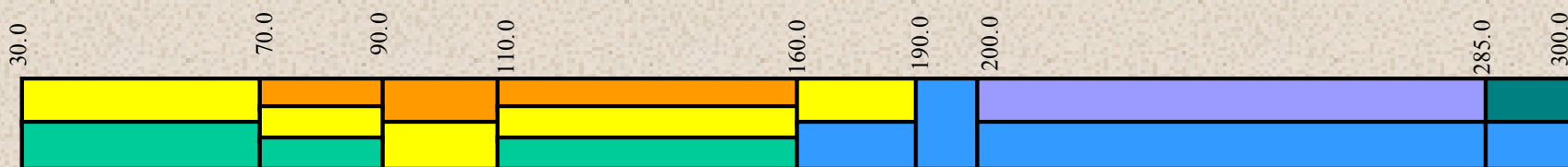
FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		<p>BROADCASTING SATELLITE</p> <p>40.5-42.5GHz and 84-86GHz</p> <p>MOBILE SATELLITE</p> <p>30-31GHz 39.5-40.5GHz 43.5-47GHz 66-74GHz 81-84GHz 95-100GHz 134-142GHz 190-200GHz 252-265GHz</p> <p>EARTH EXPLORATION</p> <p>31.3-31.8GHz 36-37GHz 40-40.5GHz 50.2-50.4GHz 51.4-59GHz 64-66GHz 86-92GHz 100-102GHz</p>	<p>Sharing with Fixed Mobile, and Broadcasting services.</p> <p>Sharing with Fixed Satellite, Fixed, Mobile, Earth Exploration Satellite, Radionavigation and Radionavigation Satellite</p> <p>Sharing With Fixed, Mobile, Space Research, Radioastronomy, Fixed Satellite and Inter Satellite Service</p>

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		105-126GHz 150-151GHz 156-158GHz 164-168GHz 174.5-176.5GHz 182-185GHz 200-202Ghz 217-231GHz 235-238GHz 250-252GHz	
		INTERSATELLITE	
		54.25-58.2GHz 59-64GHz 119.98-134GHz 170-182GHz 185-190GHz	Sharing with Earth Exploration Satellite, Fixed, Mobile, Radiolocation and Space Research
		AMATEUR SATELLITE	
		75.5-76GHz 248-250GHz	Sharing with Amateur Service
		RADIONAVIGATION	
		31.8-33.4GHz	

FREQUENCY BAND (MHz)	ALLOCATION	ALLOTMENT	NOTES/ COMMENTS
		43.5-47GHz 66-71GHz 95-100GHz 134-142GHz 190-200GHz 252-265GHz RADIOLOCATION 33.4-36GHz 59-64GHz 76-81GHz 92-95GHz RADIOASTRONOMY 31.3-31.8GHz 42.5-43.5GHz 86-92GHz 105-116GHz 182-185GHz 265-275GHz	Sharing with Radionavigation Satellite Sharing with Fixed, Mobile, Meteorological Aids And Fixed Satellite Sharing with Earth Exploration Satellite, Space Research, Fixed, Mobile and Fixed Satellite service
275000-300000	NOT ALLOCATED		



VLF BAND 3 - 30 kHz (not used in Malaysia)



LF BAND 30 - 300 kHz

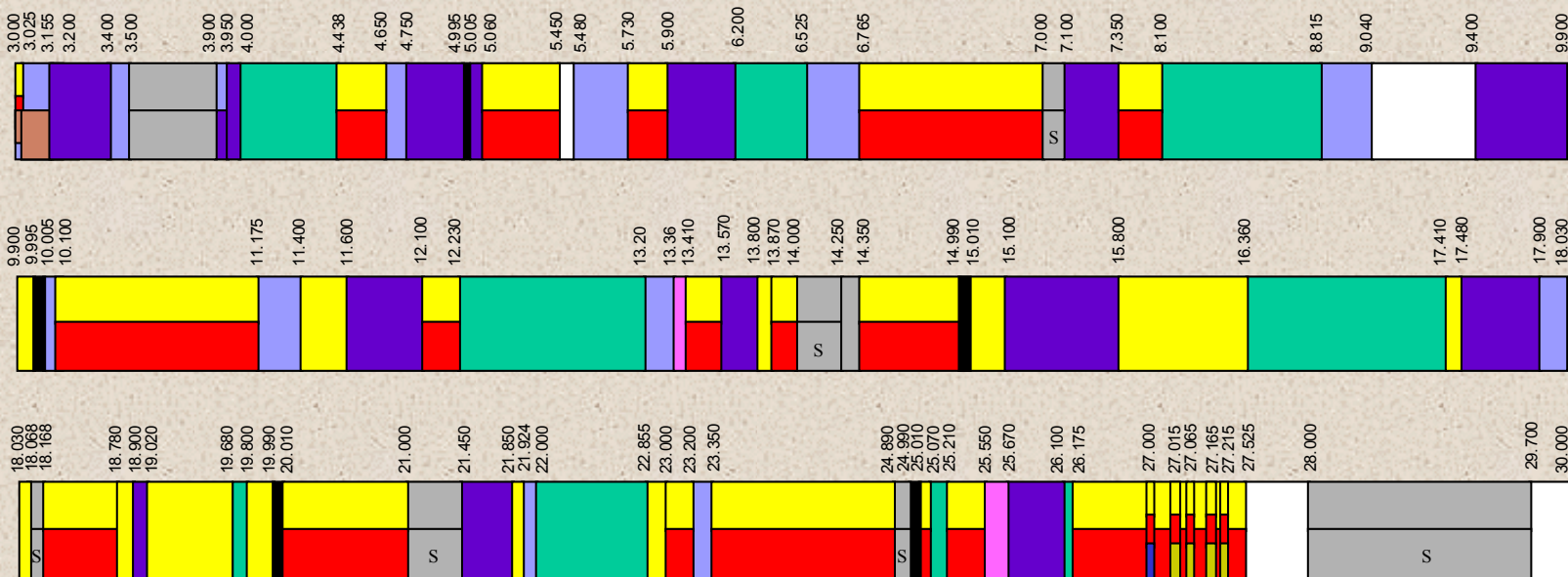


MF BAND 300 - 3000 kHz

Legend:

- | | | | | | |
|--|--------------------------|--|------------------------------------|--|-----------------|
| | Maritime Radionavigation | | Aeronautical Mobile | | Radionavigation |
| | Radionavigation | | Aeronautical Radionavigation | | Amateur |
| | Fixed | | Mobile | | Broadcasting |
| | Maritime Mobile | | Standard Frequency and Time Signal | | |

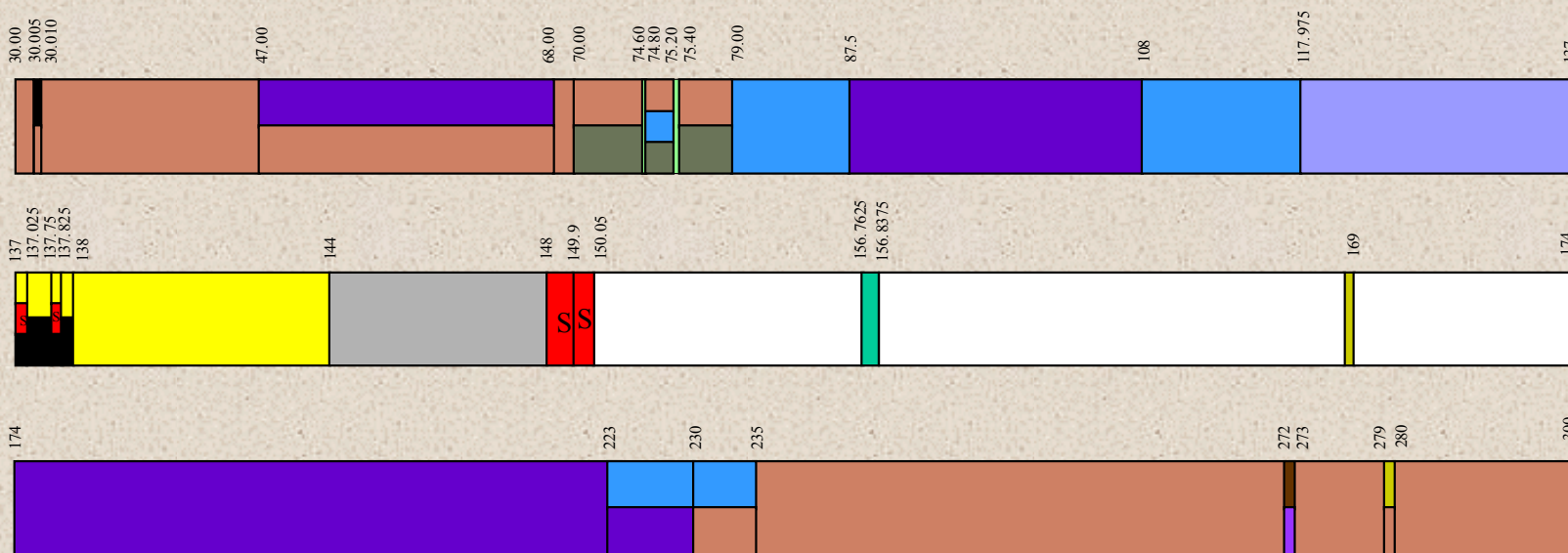
HF BAND 3 - 30 MHz



Legend:

- Fixed Service
- Broadcasting
- Amateur
- Aeronautical Mobile (R) & (OR)
- Maritime Mobile
- Paging
- Mobile
- Radio Astronomy
- S Satellite
- Standard Frequency and Time signal
- Citizen Band (10 Ch. Available)

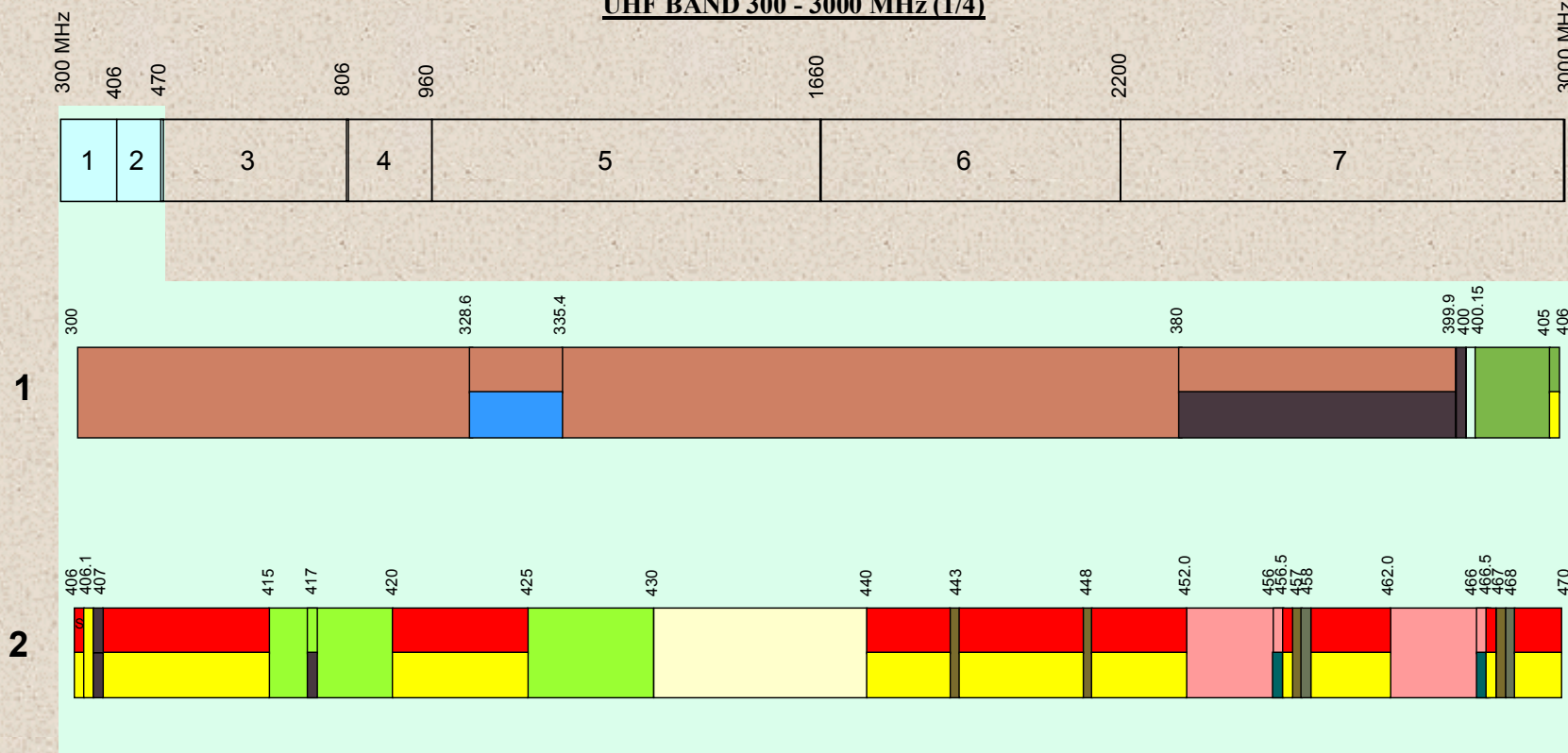
VHF BAND 30 - 300 MHz



Legend:

- | | |
|---|---|
| Military | Aeronautical Mobile |
| Aeronautical Radionavigation | Fixed |
| Aeronautical Marker Beacon (74.6-74.8/75.2-75.4 MHz) | Amateur/Amateur Satellite |
| Police | Paging |
| FM/TV Broadcast TV DSB/ DAB 174-223 | Maritime Mobile (Hague Plan) |
| Mobile | Space Operation |
| S Satellite | |

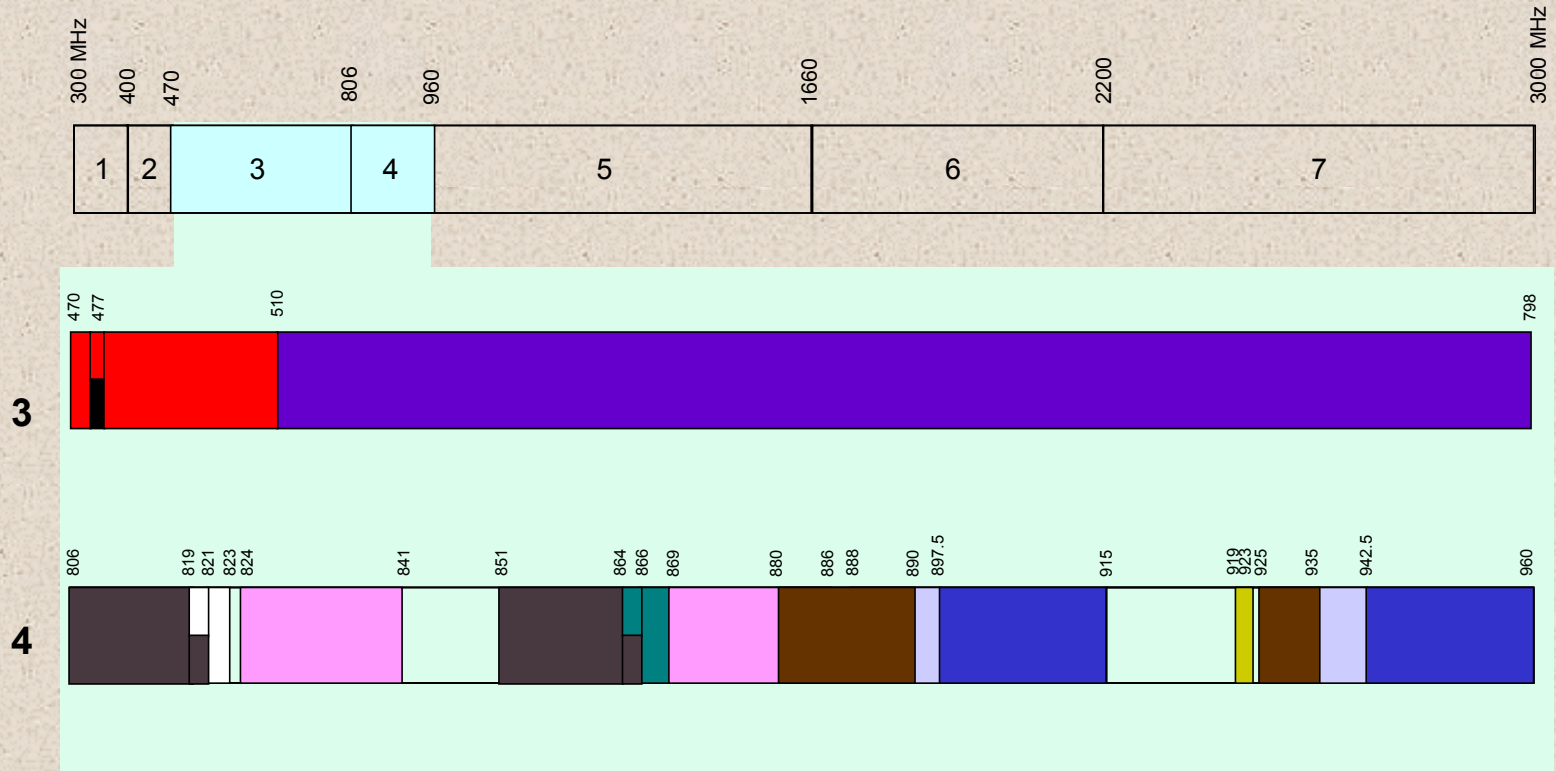
UHF BAND 300 - 3000 MHz (1/4)



Legend:

- | | | |
|--|---|--|
| ■ RILL | ■ Police | ■ NMT 450 |
| ■ Walkie-Talkie & PRS | ■ Fixed | ■ Military |
| ■ Trunk Radio System | ■ Mobile | ■ S Satellite |
| ■ Leased Channel | ■ Radiolocation | |
| ■ Aeronautical Radionavigation | ■ Meteorological Aids/Meteorological Satellite | |

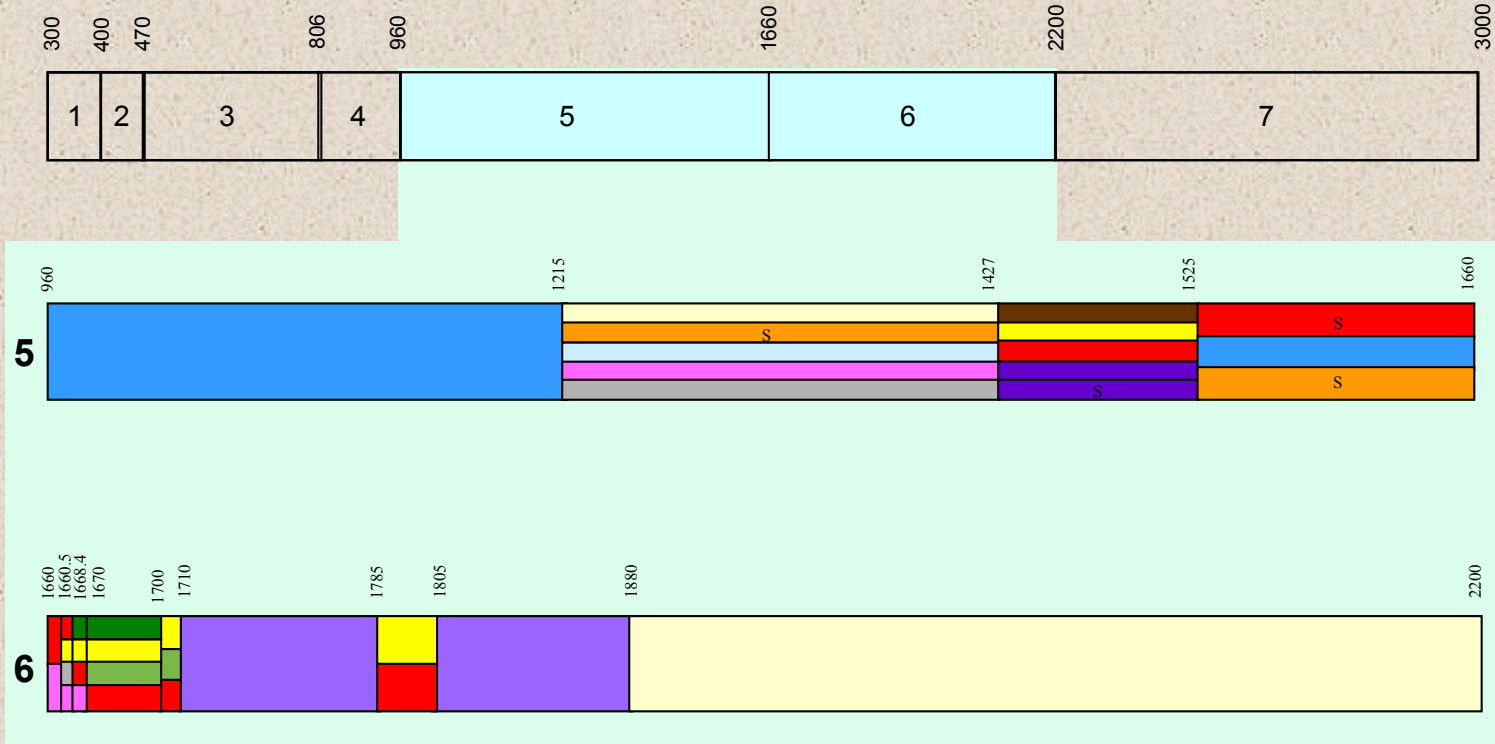
UHF BAND 300 - 3000 MHz (2/4)



Legend:

- | | |
|--|--|
| Trunk Radio System (TRS) | Enhanced Total Access Communication System (ETACS) |
| CT3 PABX | Global System for Mobile (GSM) |
| Advanced Mobile Personal System (AMPS) | EGSM |
| CT2 Telephone | Walkie-Talkie & Citizen Band |
| Television Broadcasting | Mobile Data |
| Paging | |

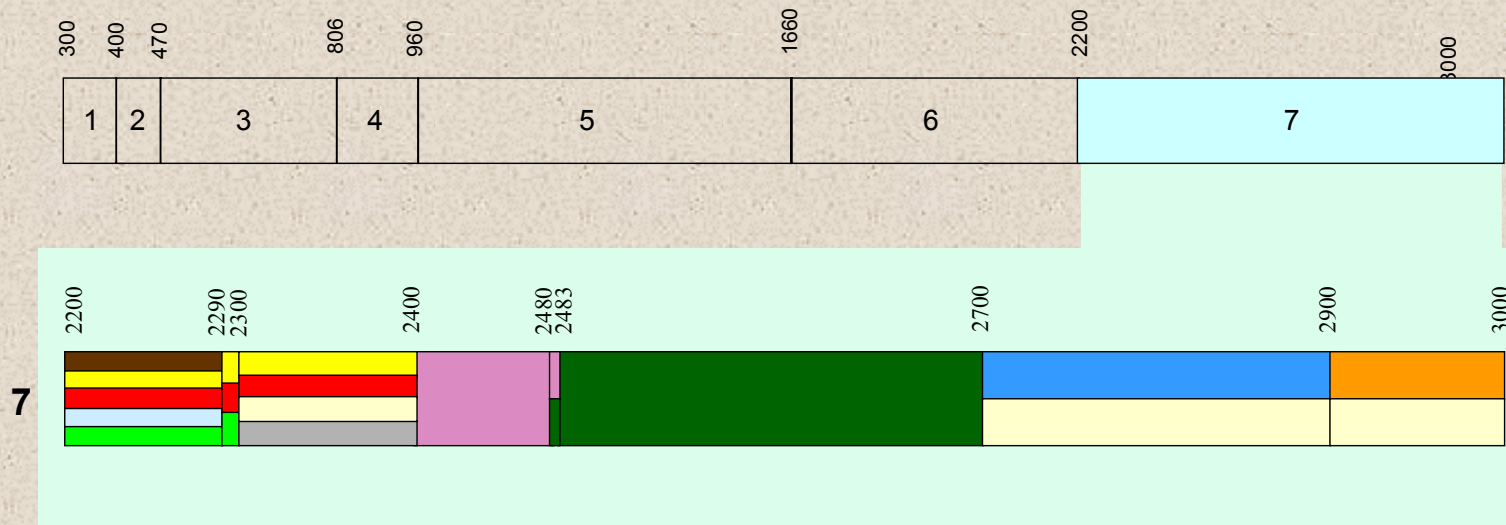
UHF BAND 300 - 3000 MHz (3/4)



Legend:

- | | | |
|------------------------------|-----------------|--|
| Fixed | Radio Astronomy | GSM 1800 |
| Meteorological Satellite | Space Research | Earth Exploration Satellite |
| Meteorological Aids | Mobile | Mobile & Cordless Telephone (Including IMT 2000) |
| Space Operation | Radiolocation | Broadcasting |
| Aeronautical Radionavigation | Radionavigation | Satellite (S) |

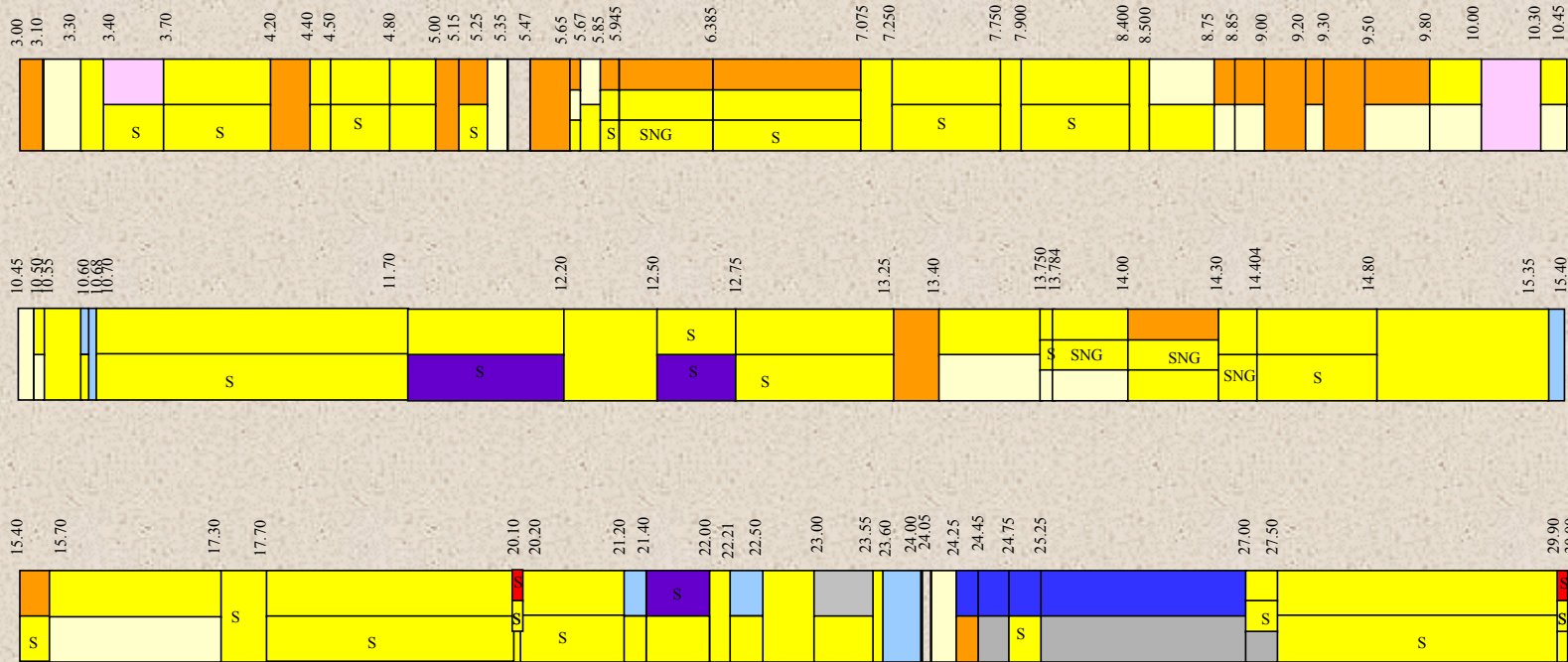
UHF BAND 300 - 3000 MHz (4/4)



Legend:

- Fixed
- Space Research
- Earth Exploration Satellite
- Space Operation
- Mobile
- Point-to-Multipoint Service
- Aeronautical Radionavigation
- Amateur
- ISM = Industrial, Research and Medical
- Radiolocation
- Radionavigation

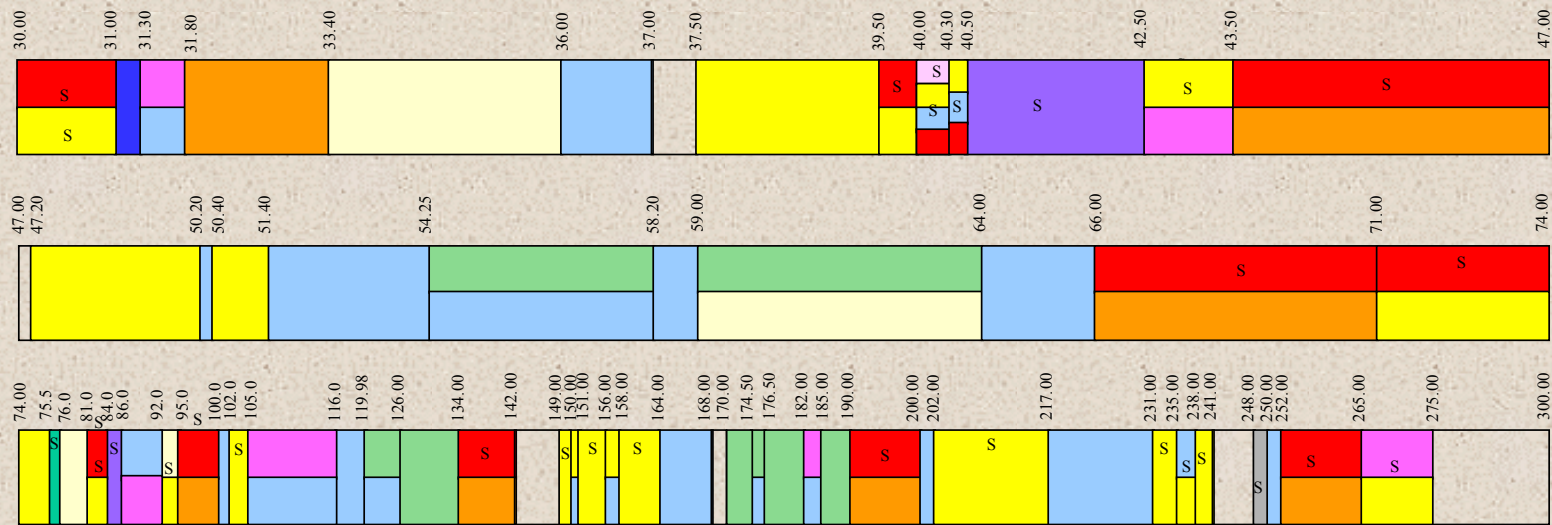
SHF BAND 3 - 30 GHz



Legend:

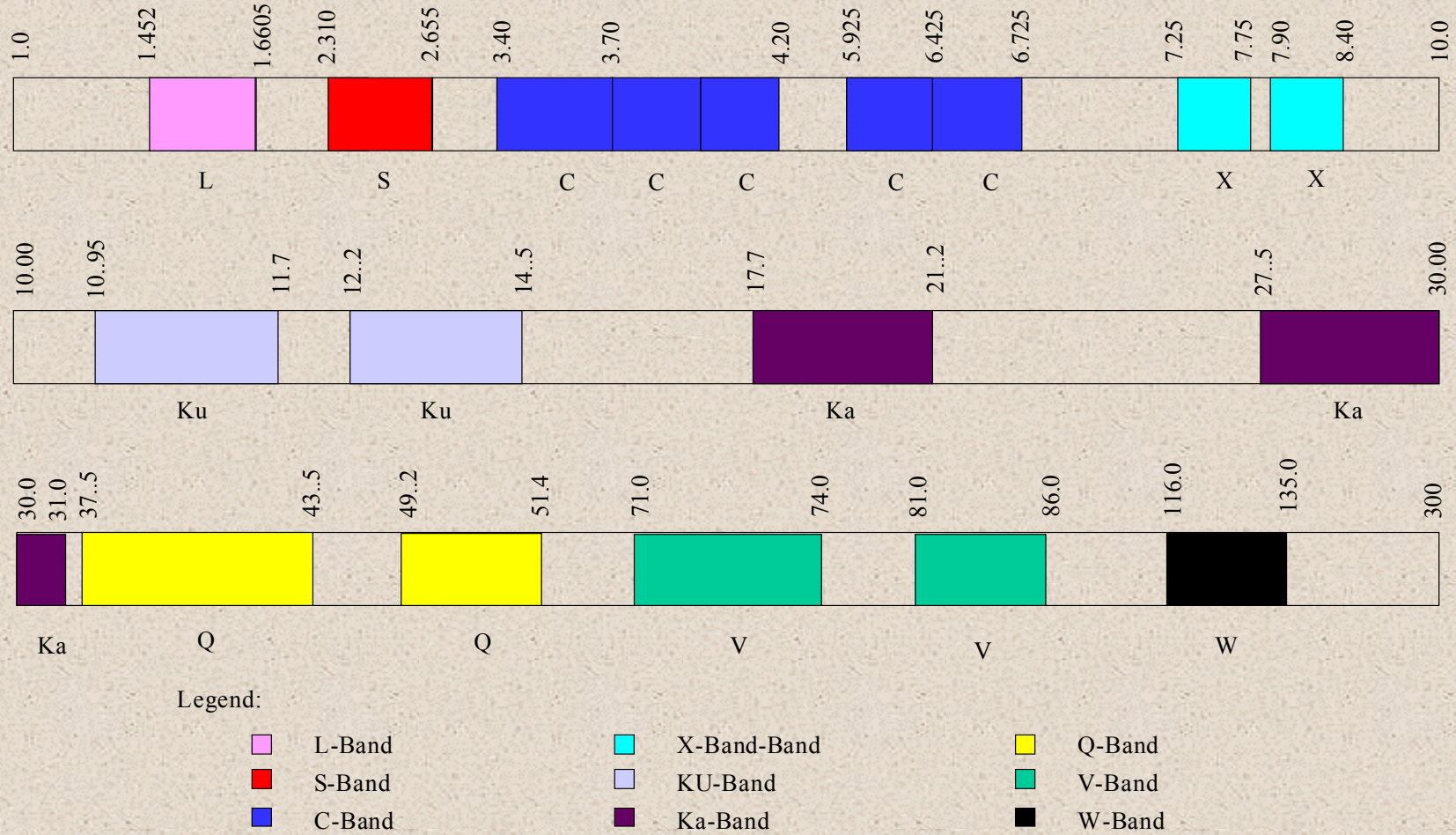
- | | | |
|---|---|---|
| Fixed Service | Local Multipoint Communications Service (LMCS) | Mobile |
| Aeronautical Radionavigation | Radionavigation | Broadcasting |
| Radiolocation | Wireless Local Loop (WLL) | SNG Satellite News Gathering |
| Inter-Satellite | Earth Exploration Satellite | S Satellite |

EHF BAND 30 - 300 GHz



- | | | |
|-----------------|--|-----------------|
| Amateur | Local Multipoint Communications Service (LMCS) | Mobile |
| Fixed Service | Radionavigation | Broadcasting |
| Radio Astronomy | Wireless Local Loop (WLL) | Inter-Satellite |
| Radio location | Earth Exploration Satellite | Satellite |

SPACE RADIOCOMMUNICATIONS FREQUENCY BANDS (GHz)



3.5 Table of General Frequency Information

3.5.1 Radio Broadcast Frequency Bands

Service	Lower Frequency Limits	Upper Frequency Limit
FM Radio Broadcast	87.5 MHz	108.0 MHz
Digital Audio Broadcast (DAB/L Band) (DAB/Shared with Band III TV)	1452 MHz 174 MHz	1492 MHz 230 MHz

3.5.2 VHF Television Broadcasting Channels

Channel Number	Frequency Band (MHz)	Channel Number	Frequency Band (MHz)
2	47 - 54	8	195 - 202
3	54 - 61	9	202 - 209
4	61 - 68	10	209 - 216
5	174 - 181	11	216 - 223
6	181 - 188	12	223 - 230
7	188 - 195		

3.5.3 UHF Television Broadcasting Channels

Channel Number	Frequency Band (MHz)	Channel Number	Frequency Band (MHz)
26	510 - 518	44	654 - 662
27	518 - 526	45	662 - 670
28	526 - 534	46	670 - 678
29	534 - 542	47	678 - 686
30	542 - 550	48	686 - 694
31	550 - 558	49	694 - 702
32	558 - 566	50	702 - 710
33	566 - 574	51	710 - 718
34	574 - 582	52	718 - 726
35	582 - 590	53	726 - 734
36	590 - 598	54	734 - 742
37	598 - 606	55	742 - 750
38	606 - 614	56	750 - 758
39	614 - 622	57	758 - 766
40	622 - 630	58	766 - 774
41	630 - 638	59	774 - 782
42	638 - 646	60	782 - 790
43	646 - 654	61	790 - 798

3.5.4 Integrated Receive Decoder (IRD) Channels

Service Area	Channel No	Frequency Band (MHz)
Malaysia (except Johor, Langkawi and Lawas)	39	614 - 622
Langkawi	38	606 - 614
Lawas (Sarawak)	40	622 - 630

3.5.5 Video Cassette Recorder (VCR) Channels

Service Area	Channel No	Frequency Band (MHz)
Wilayah Persekutuan, Langkawi, Lawas, Negeri Sembilan, Pahang, Selangor, Trengganu	30	542 - 550
Johor, Kedah, Kelantan, Melaka, Penang	31	550 - 558
Perlis	32	558 - 566
Perak	30, 32	542 - 550, 558 - 566
Sarawak	33	566 - 574
Labuan, Sabah,	30, 34	542 - 550, 574 - 582

3.5.6 Point to Multipoint Radio systems

Service	Lower Frequency Limits	Upper Frequency Limit
Microwave Multi-Distribution System (MMDS)	2504 MHz	2688 MHz
Microwave Link (point-to-point/point-to-multipoint)	5725 MHz	5875 MHz
Wireless Local Loop (WLL)	3400 MHz 10000 MHz 40000 MHz	3700 MHz 10300 MHz 40300 MHz
Local Multipoint Communications Service (LMCS)	24.50 GHz 27.50 GHz (reserved) 31.00 GHz (reserved)	26.50 GHz 29.50 GHz (reserved) 31.30 GHz (reserved)

3.5.7 Industrial, Scientific and Medical (ISM)

(These applications are not considered to be a telecommunication service.)

Lower Frequency Limit	Upper Frequency Limit	Centre Frequency
6 765 kHz	6 795 kHz	6 780 kHz
13 553 kHz	13 567 kHz	13 560 kHz
26 957 kHz	27 283 kHz	27 120 kHz
40.660 MHz	40.700 MHz	40.680 MHz
2 400 MHz	2 500 MHz	2 450 MHz
5 725 MHz	5 875 MHz	5 800 MHz
24.000 GHz	24.250 GHz	24.125 GHz
61.000 GHz	61.500 GHz	61.250 GHz
122.000 GHz	123.000 GHz	122.500 GHz
244.000 GHz	246.000 GHz	245.000 GHz

3.5.8 Maritime International Distress Frequencies

System	Frequency
Radiotelegraph	500.0 kHz
Narrow-Band Direct Printing Telegraphy	2 174.5 kHz
	4 177.5 kHz
	6 268.0 kHz
	8 376.5 kHz
	12 520.0 kHz
	16 695.0 kHz
Radiotelephone	2 182.0 kHz
	156.800 MHz
Digital Selective Calling	2 187.5 kHz
	4 207.5 kHz
	6 312.0 kHz
	8 414.5 kHz
	12 577.0 kHz
	16 804.5 kHz
	156.525 MHz

3.5.9 Low Power Devices

	Type of devices	POWER (mW)	Frequency bands (MHz)	Note
1	Cordless telephone	<1000 (eirp)	40.0250 to 40.2750 46.6100 to 46.9700 49.6700 to 49.9700 819.1000 to 823.1000 864.1000 to 868.1000 1880 to 1885	Exemption Order 2000
2	Remote controlled consumer device - boat, car model/garage door/camera/toy robot, crane, etc	<50 (eirp)	26.9650 to 27.2750 434 to 435 187.5 THz to 420 THz (Infra Red)	Exemption Order 2000
3	Industrial, Scientific and Medical (ISM) device and telemetry	<1000 (eirp)	27.5250 162.9750 to 163.1250 460.0000 to 460.9000 450.6250 to 450.6750 460.6250 to 460.6750 450.7250 460.7250 405.5250 415.5250 405.5750 to 405.6000 415.5750 to 415.6000 404.0000 to 405.0000 414.0000 to 415.0000 2400.0000 – 2483.5000 5725.0000 – 5875.0000 24.000 Ghz – 24.25 Ghz	Exemption Order 2000
4	Security device - radio detection and alarm	<50 (eirp)	228.0063 to 228.9937 303.0000 to 320.0000 400.0000 to 402.0000	Exemption order 2000
5	Wireless microphone system	<50 (eirp)	26.95728 to 27.28272 40.4350 to 40.9250 187.5 THz to 420 THz (Infra Red)	Exemption order 2000
		-	-	

3.5.10 Cellular Mobile Radio Services

Service		Lower Frequency Limits	Upper Frequency Limit
NMTS 450	(Base Rx)	452.000 MHz	456.275 MHz
	(Base Tx)	462.000 MHz	466.275 MHz
ETACS 900	(Base Rx)	872.000 MHz	888.500 MHz (Band A)
	(Base Tx)	917.000 MHz	933.500 MHz
	(Base Rx)	888.500 MHz	905.000 MHz (Band B)
AMPS A/D 800	(Base Tx)	933.500 MHz	950.000 MHz
	(Base Rx)	824.000 MHz	835.000 MHz (Band A)
	(Base Tx)	869.000 MHz	880.000 MHz
	(Base Rx)	845.000 MHz	846.500MHz (Additional)
	(Base Tx)	890.000 MHz	891.500 MHz
	(Base Rx)	835.000 MHz	845.000 MHz (Band B)
	(Base Tx)	880.000 MHz	890.000 MHz
	(Base Rx)	846.500 MHz	849.000MHz (Additional)
	(Base Tx)	891.500 MHz	894.000 MHz
GSM	(Base Rx)	890.000 MHz	915.000 MHz
	(Base Tx)	935.000 MHz	960.000 MHz
GSM1800	(Base Rx)	1710 MHz	1785 MHz
	(Base Tx)	1805 MHz	1880 MHz
IMT 2000		TDD : 1885 – 1920 Mhz and 2010 – 2025 Mhz MSS : 1980 – 2010 Mhz and 2170 – 2200 Mhz FDD : 1920 – 1980 Mhz and 2110 – 2170 Mhz	

3.5.11 Other Mobile Radio Services

Service		Lower Frequency Limit	Upper Frequency Limit
VHF Mobile Radio	(Base Rx)	138.000 MHz	139.400 MHz
	(Base Tx)	142.600 MHz	144.000 MHz
Walkie-Talkie VHF (point-to-point)		141 MHz	142 MHz
UHF Mobile Radio	(Base Rx)	443.0125 MHz	443.9875 MHz
	(Base Tx)	448.0125 MHz	448.9875 MHz
Walkie-Talkie UHF (point-to-point)		456.525 MHz	456.975 MHz
		466.525 MHz	466.975 MHz
		477.000 MHz	477.250 MHz
Mobile Data	(Base Rx)	478 MHz	484 MHz
	(Base Tx)	488 MHz	494 MHz
Trunked Radio (Analogue)	(Base Rx)	806.0125 MHz	817.9875 MHz
	(Base Tx)	851.0125 MHz	862.9875 MHz
Trunked Radio (Digital)	(Base Rx)	380 MHz	390 MHz
	(Base Tx)	390 MHz	400 MHz

3.5.12 Frequency Bands Filed for MEASAT Satellite Network

MEASAT Networks	Uplink Frequency (MHz)	Downlink Frequency (MHz)	Inter-Satellite Links (MHz)	Type of Service
MEASAT-1	5925-6725	3400-4200	22550-23550	FSS
	7900-8400	7250-7750	32000-33000	FSS
	13750-14500	10950-11200 11450-11700 12200-12750	54250-58200 59000-71000 116000-134000	FSS
	27000-31000	17700-21200		FSS
	42500-43500 47200-50200 50400-51400	37500-40500		FSS
	71000-74000 92000-95000	37500-40500 81000-84000		FSS
	1626.5-1645.5	1525-1544		Maritime-MSS
	1656.5-1660.5	1555-1559		Land-MSS
	5925-6725 13750-14500	1452-1492 2310-2360 2535-2655		DAB
	47200-49200	40500-42500		BSS
	27500-30000 24750-25250 18100-18400	21400-22000		HDTV
MEASAT-2	5925-6725	3400-4200	22550-23550	FSS
	7900-8400	7250-7750	32000-33000	FSS
	13750-14500	10950-11200 11450-11700 12200-12750	54250-58200 59000-71000 116000-134000	FSS
	27000-31000	17700-21200		FSS
	42500-43500 47200-50200 50400-51400	37500-40500		FSS
	71000-74000 92000-95000	37500-40500 81000-84000		FSS
	1626.5-1645.5	1525-1544		Maritime-MSS
	1656.5-1660.5	1555-1559		Land-MSS
	5925-6725 13750-14500	1452-1492 2535-2655		DAB
	47200-49200	40500-42500		BSS
	27500-30000 24750-25250 18100-18400	21400-22000		HDTV
MEASAT-3	5925-6725	3400-4200	22550-23550	FSS
	7900-8400	7250-7750	32000-33000	FSS
	13750-14500	10950-11200 11450-11700 12200-12750	54250-58200 59000-64000 116000-134000	FSS
	27000-31000	17700-21200		FSS
	42500-43500	37500-40500		FSS

MEASAT Networks	Uplink Frequency (MHz)	Downlink Frequency (MHz)	Inter-Satellite Links (MHz)	Type of Service
	49200-50200 50400-51400			
	71000-74000 92000-95000	37500-40500 81000-84000		FSS
	1626.5-1645.5	1525-1544		Maritime-MSS
	1656.5-1660.5	1555-1559		Land-MSS
	5925-6725 13750-14500	1452-1492 2310-2360 2535-2655		DAB
	27500-30000 24750-25250 18100-18400	21400-22000		HDTV
MEASAT-4	6425-6725	3400-3700	22550-23550	FSS
	7900-8400	7250-7750	32000-33000	FSS
	13750-14500	10950-11200 11450-11700	54250-58200 59000-64000 116000-134000	FSS
	27000-31000	17700-21200		FSS
	42500-43500 49200-50200 50400-51400	37500-40500		FSS
	71000-74000 92000-95000	37500-40500 81000-84000		FSS
	1626.5-1645.5	1525-1544		Maritime-MSS
	1656.5-1660.5	1555-1559		Land-MSS
	5925-6725 13750-14500	1452-1492 2310-2360 2535-2655		DAB
	27500-30000 24750-25250 18100-18400	21400-22000		HDTV
MEASAT-SA1	5925-6725	3400-4200	22550-23550 32000-33000	FSS
	7900-8400	7250-7750	54250-58200	FSS
	13750-14500	10950-11200 11450-11700 11700-12200 12500-12750	59000-71000 116000-134000	FSS
	27000-31000	17700-21200		FSS
	42500-43500 47200-50200 50400-51400	37500-40500		FSS
	71000-74000 92000-95000	37500-40500 81000-84000		FSS
	1626.5-1645.5	1525-1544		Maritime-MSS
	1656.5-1660.5	1555-1559		Land-MSS
	5925-6725 13750-14500	1452-1492 2535-2655		DAB
	47200-49200	40500-42500		BSS
	27500-30000 18100-18400	21400-22000		HDTV

MEASAT Networks	Uplink Frequency (MHz)	Downlink Frequency (MHz)	Inter-Satellite Links (MHz)	Type of Service
MEASAT-SA2	5925-6725	3400-4200	22550-23550 32000-33000	FSS
	7900-8400	7250-7750	54250-58200	FSS
	13750-14500	10950-11200 11450-11700 11700-12200 12200-12750	59000-64000 116000-134000	FSS
	27000-31000	17700-21200		FSS
	42500-43500 49200-50200 50400-51400	37500-40500		FSS
	71000-74000 92000-95000	37500-40500 81000-84000		FSS
	1626.5-1645.5	1525-1544		Maritime-MSS
	1656.5-1660.5	1555-1559		Land-MSS
	5925-6725 13750-14500	1452-1492 2535-2655		DAB
	27500-30000 18100-18400	21400-22000		HDTV
MEASAT-SA3	5925-6725	3400-4200	22550-23550 32000-33000	FSS
	7900-8400	7250-7750	54250-58200	FSS
	13750-14500	10950-11200 11450-11700 12200-12500	59000-64000 116000-134000	FSS
	27000-31000	17700-21200		FSS
	42500-43500 49200-50200 50400-51400	37500-40500		FSS
	71000-74000 92000-95000	37500-40500 81000-84000		FSS
	1626.5-1645.5	1525-1544		Maritime-MSS
	1656.5-1660.5	1555-1559		Land-MSS
	5925-6725 13750-14500	1452-1492 2310-2360 2535-2655		DAB
	27500-30000 18100-18400	21400-22000		HDTV
MEASAT-SA4	5925-6725	3400-4200	22550-23550 32000-33000	FSS
	7900-8400	7250-7750	54250-58200	FSS
	13750-14500	10950-11200 11450-11700 12200-12500	59000-64000 116000-134000	FSS
	27000-31000	17700-21200		FSS
	42500-43500 49200-50200 50400-51400	37500-40500		FSS
	71000-74000 92000-95000	37500-40500 81000-84000		FSS
	1626.5-1645.5	1525-1544		Maritime-MSS
	1656.5-1660.5	1555-1559		Land-MSS

MEASAT Networks	Uplink Frequency (MHz)	Downlink Frequency (MHz)	Inter-Satellite Links (MHz)	Type of Service
	5925-6725 13750-14500	1452-1492 2310-2360 2535-2655		DAB
	27500-30000 18100-18400	21400-22000		HDTV
MEASAT-LA1	5925-6725	3400-4200	22550-23550 32000-33000	FSS
	7900-8400	7250-7750	54250-58200	FSS
	13750-14500	10950-11200 11450-11700 11700-12200	59000-71000 116000-134000	FSS
	27000-31000	17700-21200		FSS
	42500-43500 47200-50200 50400-51400	37500-40500		FSS
	71000-74000 92000-95000	37500-40500 81000-84000		FSS
	1626.5-1645.5	1525-1544		Maritime-MSS
	1656.5-1660.5	1555-1559		Land-MSS
	5925-6725 13750-14500	1452-1492 2310-2360 2535-2655		DAB
	47200-49200	40500-42500		BSS
	24750-25250 27500-30000 18100-18400	17300-17800		HDTV

3.5.13 International Mobile-Satellite Services

Service	Frequency Band	
IRIDIUM	Between User Terminal and Satellite Intersatellite Satellite to Earth Station (downlink) Earth Station to Satellite (uplink)	L-band : 1616 - 1626.5 MHz Ka-band: 23.18 - 23.38 GHz Ka-band: 19.4 - 19.6 GHz Ka-band: 29.1 - 29.3 GHz
ORBCOMM	Satellite to User Terminal (Downlink) User terminal to Satellite (Uplink)	(a) 137 - 138 MHz (b) 400.00 MHz, 400.15 MHz 148.00 - 150.50 GHz
INTERMEDIATE CIRCULAR ORBIT (ICO)	User Terminal and Satellite (Uplink) Satellite to User Terminal (Downlink) Earth Station to Satellite (Uplink) Satellite to Earth Station (Downlink)	1985 - 2015 MHz 2170 - 2200 GHz 5150 - 5250 GHz 6975 - 7075 GHz

CHAPTER 4

Spectrum & Apparatus Assignment Procedures

Malaysian Spectrum Plan
Malaysian Spectrum Plan

4. SPECTRUM & APPARATUS ASSIGNMENT PROCEDURES

4.1 Assignments in the CMA 1998

The Communications and Multimedia Act (CMA) 1998, under section 177, states that the spectrum plan may include procedures for spectrum assignments and apparatus assignments by tender, auction or fixed price. In principle the methods and procedures described in this section may be used for both spectrum assignments and apparatus assignments.

However, the use of such procedures in the issuance of apparatus assignments will be at the Commission's discretion and unless otherwise indicated the normal process described in the CMA 1998 and accompanying Spectrum Regulations must be applied to apparatus assignments. The CMA 1998 does not make any reference to 'beauty contest'. However, as this method is construed as an extension of the 'tender' part, it is considered as a possible method that may be employed to decide on assignments. The term assignments in this chapter mean spectrum assignments and apparatus assignments.

4.2 Definitions

'applicant' means either a single entity or joint venture that is legally incorporated in Malaysia under the Companies Act 1965. A joint venture refers to a situation where two or more parties enter into an arrangement to work together in order to strengthen their ability to deliver the relevant service arrangement.

An **'auction'** is a selection mechanism where the actual award of an assignment is given on the basis of the financial offer (or offers) only. Other criteria may be applied before the auction takes place, but the auction mechanism is the decisive factor for the award of an assignment.

A **'beauty contest'** is a selection mechanism where the actual award of an assignment is given on the basis of criteria other than a financial offer. The assignment price may be fixed in advance, but is not a factor in the award of the assignment.

'comparative tender with price' means a full standard tender in which both an implementation plan and a price are submitted for evaluation. This is in contrast to beauty contest where the price is fixed.

'fixed pricing' is where the price/fee for an assignment is determined before the assignment process and is therefore known to all applicants from the outset.

'implementation plan' means the applicants offer for the rollout of infrastructure and other measures to facilitate the usage of the spectrum by the end user.

A **'tender'** is a selection mechanism that gives weight to both financial and non-financial criteria in order to decide which offers are the best for award of an assignment;

4.3 Overview of Bidding Procedures

As previously stated, spectrum and apparatus assignments may be assigned through an auction, tender or fixed price. These methods have similar processes and can be categorised as follows:

- I Information for Applicants – This category covers topics such as the Marketing Plan, AIP, briefing session, trial auction (if applicable), financial requirements and evaluation criteria.
- II Assignment Process – The actual assignment process through a tender, fixed price or auction will be covered in this category. Topics such as registration, submission of applications, evaluation and bidding requirements will also be covered.
- III The Grant - Upon completion of the assignment process, provisional results are released and winners notified. This category covers topics such as obtaining clearance, payment and registration of assignment to the successful applicant.

4.4 Information for Applicants

Once a method has been chosen for the assignment of spectrum, a Marketing Plan is prepared and issued. This is then followed by the issuance of an Applicant Information Package (AIP). An announcement is made to notify the public of the exercise and invite interested parties to obtain the documents and participate in the assignment process.

4.4.1 Marketing Plan

The Marketing plan will define the method, procedures and timetable that are to be followed for issuing of the assignment. It will apportion the relevant frequency bands in the spectrum plan for the purpose of issuing the assignment and set out the conditions that are to be applied. It will also set out the fees and deposits that are applicable to the assignment and the terms and options for payment. The Marketing Plan will be made available for public comment and all comments received within a reasonable timeframe will be considered. The Marketing Plan is an important document that sets out the Commission's objectives in respect to the assignment.

4.4.2 Applicant Information Package (AIP)

The information contained within the AIP will essentially be similar to that of the Marketing Plan with some additional information designed to help applicants understand and follow the application process. The AIP will contain information such as:

- Method & Procedures of Application
- Pre-Condition & Evaluation Criteria
- Details of the Bidding Process & Assignment
- Assignment fees and payment options
- Details of Business or Implementation plan (where applicable)
- Instructions for Applications
- Attachments
- Key dates
- Details of the information/briefing session

Further, the AIP will provide instructions on how to submit applications to bid for the assignment. The application shall incorporate (but not limited to) the following:

- I. Letter of Application
- II. Declaration Form
- III. Application Form
- IV. Summary of Application
- V. The Business/Implementation Plan (where applicable)
- VI. Supporting Documents
- VII. Supplementary Documents
- VIII. Fees, Deposits and Guarantees

Interested and eligible applicants are advised to follow the procedures and satisfy the requirements detailed within the AIP.

4.4.3 Information Session

The information session is held to provide interested parties with an opportunity to clarify any matters relating to the assignment. Queries on the details of contained within the AIP will be addressed at this event. If the method of assignment is through the conduct of an auction, a trial auction process may be held to familiarise the bidders on how the auction will be run.

4.5 The Assignment Methods

4.5.1 Tendering

Tendering covers a wide variety of different methods and those considered the most applicable to the assignment process are described below.

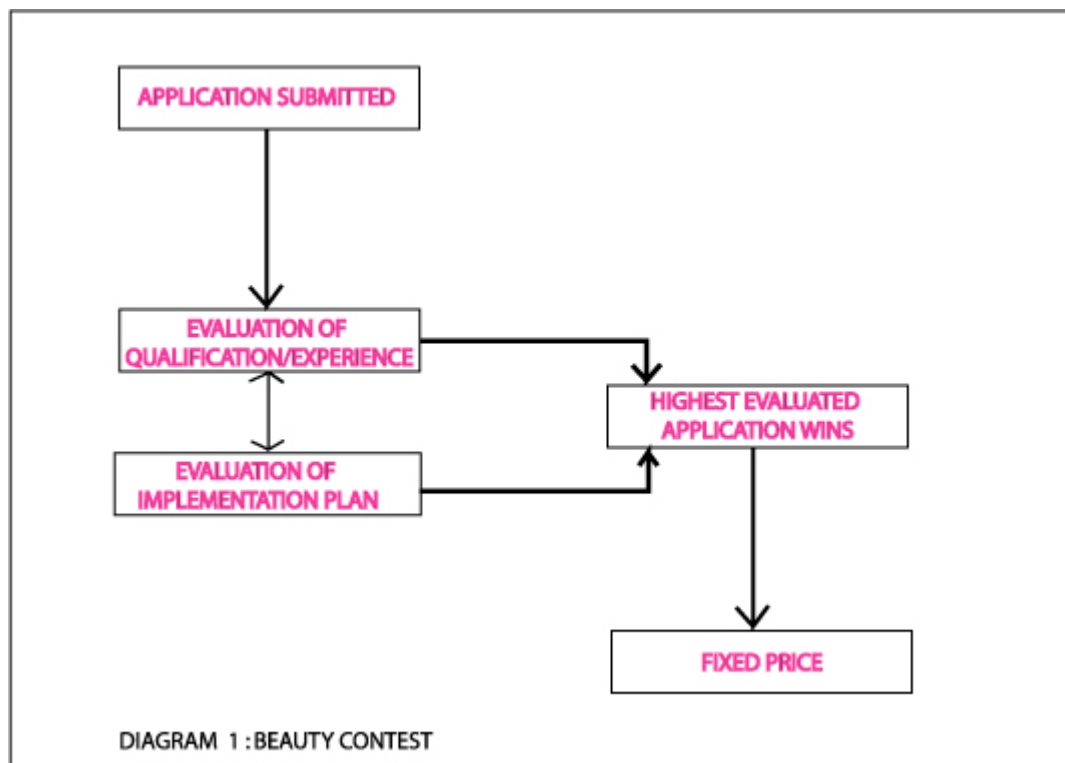
4.5.1.1 'Beauty Contest'

As previously stated, beauty contest are regarded as an extension of a tender process. In a beauty contest applicants for an assignment are assessed on the basis of criteria other than a financial offer. In instances where a beauty contest is chosen as the method for assigning spectrum, then the criteria and evaluation process will be defined in the Marketing Plan and AIP.

These criteria may include an evaluation of the applicant's experience, financial capability and implementation plan. The criteria may also require that the applicant demonstrate their commitment to specific service objectives and national priorities.

An evaluation committee will vet all applications made in accordance with the procedures defined in the AIP. The successful applicants will be drawn from those that have scored the highest in the evaluation process and will then be subject to a fixed price that has been pre-determined by the Commission.

The diagram below depicts a 'beauty contest'.



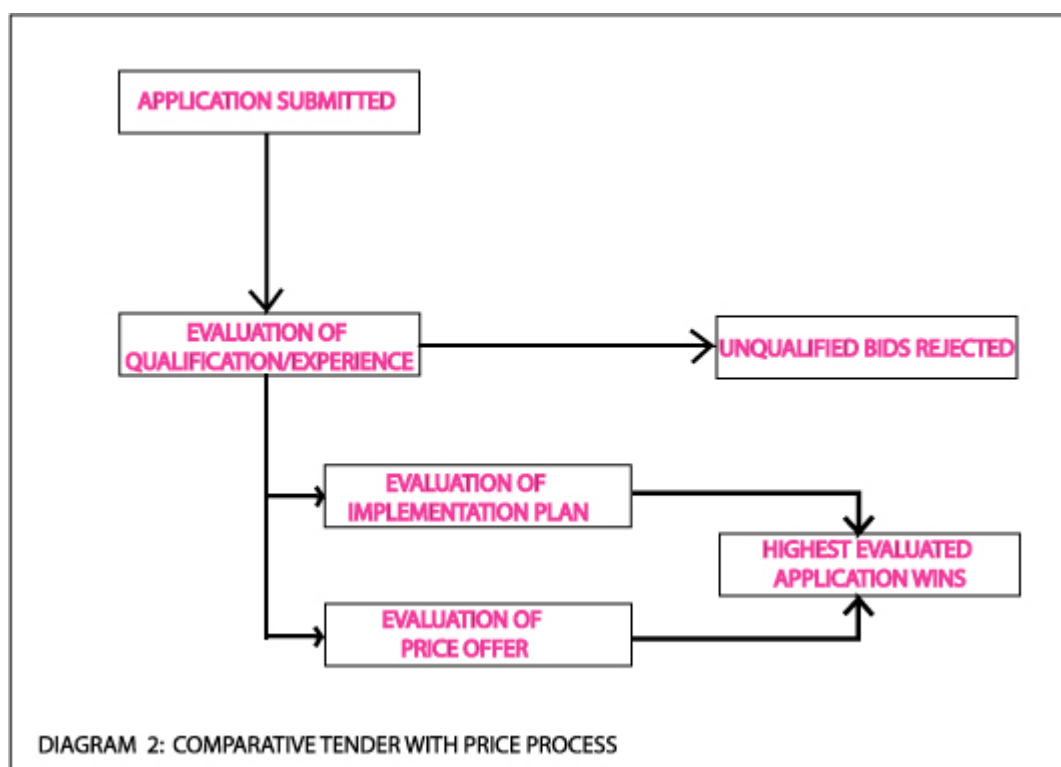
4.5.1.2 Comparative Tender with Price

A comparative tender with price is similar to a beauty contest in that it includes an evaluation process by which applicants are assessed based on set criteria. However, the main difference is that this tender process includes an evaluation of a price offer.

This method requires that applicants submit a sealed bid price offer as part of their application. In the evaluation process 'weight' is given to this price offer and, again, the successful applicants are drawn from those that have scored the highest. The exact 'weightage' (importance) given to the price offer and other criteria will depend on the tender design and objectives of the Commission. The other evaluation criteria will be similar to those described in the section above on beauty contest.

If this method is used for assigning spectrum, then the Marketing Plan and AIP will specify the evaluation criteria and weightage (in percentage or equivalent) that represents the importance of each criterion in the overall submission.

The diagram below depicts a comparative tender with price process.



4.5.2 Fixed Pricing

Fixed pricing refers to a situation where assignments are offered on a fixed price basis. If this approach is adopted, the successful applicant will be determined solely by his willingness to pay this price. Therefore, in situations where there are many applicants demanding a limited number of assignments, fixed pricing may not be a viable option. In such cases it may be better to use a tender or auction as a method for making the assignment.

Examples where the Commission may use fixed pricing are in situations: -

- where there is no competition for an assignment, meaning that the number of applicants equals the number of available assignments or;
- where the Commission has decided to offer a spectrum assignment to an existing user operating under an apparatus assignment (Conversion process) or;
- where an existing user is offered a renewal of an assignment once the validity of the current assignment has expired.

The above are examples only and do not in any way limit the Commission's ability to utilize this method for the assignment of spectrum in any other way deemed necessary.

4.5.3 Auctions

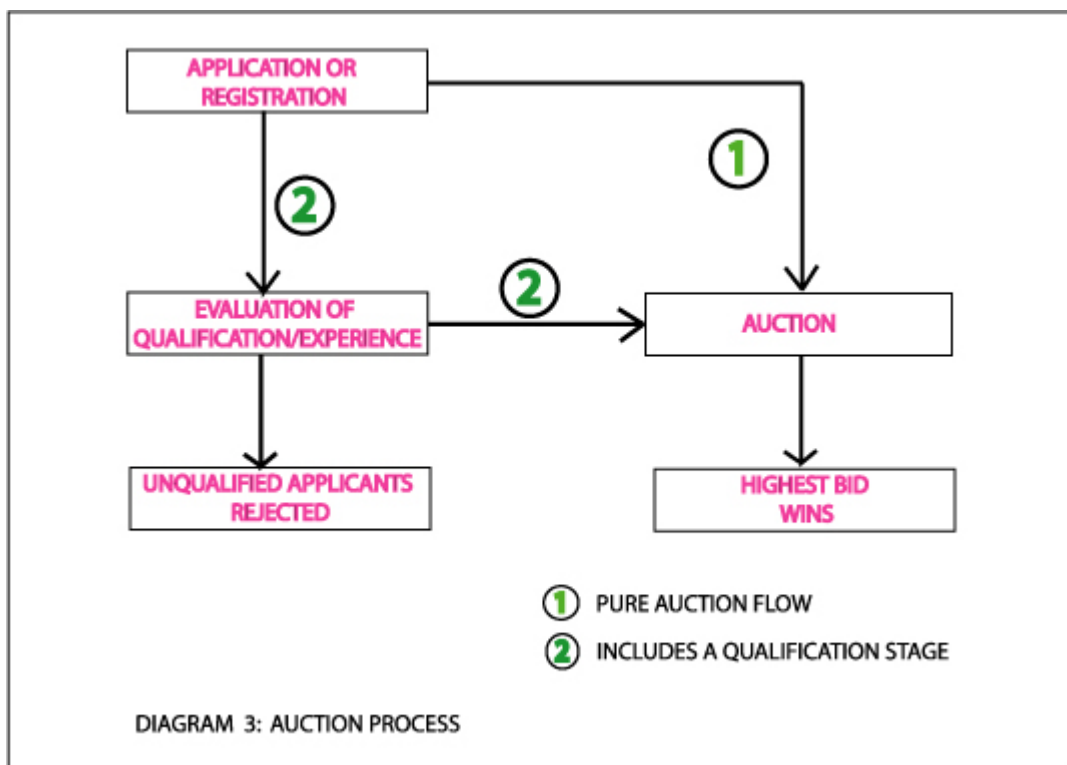
In an auction, the award of the assignment will be based solely on a competitive price offer. If an auction is chosen as a method of assigning spectrum, then the Marketing Plan and AIP will specify details regarding the auction process, including registration, bidding procedures and the number of lots available. Minimum bids or reserve prices will also be established and these represent the minimum amount that an applicant may offer for each lot.

Interested parties must register with the Commission in accordance with the timetable for registration indicated in the AIP, specifying the lot(s) of interest and the names of their representatives authorized to bid in the auction process. The registration procedure may also call for the submission of deposits and/or bank guarantees.

On the auction date, defined in the AIP, bidding will commence and the highest bidder wins.

Auctions may include a qualification stage, where elements of the tender process are incorporated into the auction design. If a qualification stage is included, then the qualification criteria will be detailed in the Marketing Plan and AIP. The qualification stage is not part of the final assignment process. Applicants that pass the qualification stage become eligible to enter into the auction process where the price offer determines the winner. This is in contrast to the comparative tender with price described in 4.5.1.2 above, where the price offer is evaluated together with other set criteria, and the winners are drawn from those that have scored the highest in the full evaluation process.

The following diagram depicts an auction process.



4.6 The Grant

Successful applicants will receive a letter formally notifying the Commission's provisional acceptance of their successful bid(s) and an invoice will be generated by the Commission. Payments must be made in accordance to one of the payment options defined in the AIP. The Commission will proceed to register the assignment and issue the grant.

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International Telecommunication Union (ITU)