

# NATIONAL SPECTRUM PLAN (2025 – 2028)

**Consultation Document** 

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#### INTRODUCTION

The Utilities Regulation and Competition Authority (URCA) is the independent regulator and competition body for the Electronic Communications Sector (ECS) in The Bahamas, which includes fixed and mobile telecommunications services, broadcasting, and the management of spectrum and numbering resources.

URCA is charged with promoting the main objectives of the Electronic Communications Policy set out in section 4 of the Communications Act 2009 (Comms Act). These objectives include, among other things, furthering the interests of consumers by promoting competition and, in particular, the optimal use of state assets, including radio spectrum.

URCA has undertaken a comprehensive revision of the National Spectrum Plan (NSP) in full compliance with Part V of the Comms Act. The updated plan, designated as the National Spectrum Plan 2025–2028 (hereinafter referred to as "NSP" or "Spectrum Plan"), reflects URCA's continued commitment to the efficient and structured management of The Bahamas' radio frequency spectrum resources.

The proposed revisions are rooted in the legislative and regulatory framework established under the Comms Act and aligned with the objectives of the Electronic Communications Sector Policy 2024–2027 (ECS Policy 2024-2027). These proposed revisions are intended to optimise spectrum usage, accommodate the evolving needs of the ECS, and support the Government's digital transformation goals. The revised NSP acts as a strategic roadmap, harmonising domestic regulatory practices with international standards while fostering innovation and development.

## 1.1 Background

Under the Comms Act, URCA is mandated to develop NSPs in consultation with the Minister responsible for the ECS. These plans must comply with the International Telecommunication Union Radio Regulations (ITU-RR), an international treaty ratified by ITU Member States, including The Bahamas. The ITU-RR codifies global spectrum allocation principles and is updated by successive World Radiocommunication Conferences (WRCs).

In March 2020, URCA published the third NSP (2020–2023) under ECS 02/2020. Section 31(4) of the Comms Act requires a revised NSP every three years. Accordingly, URCA has developed this fourth iteration, covering 2025–2028, for submission to the Minister.

#### 1.2 Objectives of this NSP

The principal objective of the revised NSP is to set forth strategic policies for the efficient management of radio spectrum, a finite and critical national resource. This edition aligns with

national priorities set out in ECS Policy 2024-2027 and incorporates updates from the 2024 ITU-RR, following WRC-23 (Dubai, 2023).

NSP 2025-2028 builds on its predecessors (2010, 2014, and 2020), which incorporated ITU recommendations up to WRC-19. The 2025–2028 Plan continues this alignment by integrating outcomes from WRC-23.

Consultation Question 1: Objectives of the revised National Spectrum Plan

Do you agree/disagree with the overarching objectives of the NSP 2025-2028? Please give reasons why you disagree.

## 1.3 Legal Framework

The Comms Act establishes the legal and regulatory foundation for managing the radio frequency spectrum in The Bahamas. URCA's statutory duties and powers concerning spectrum management are set out in Part V (sections 29–38) of the Comms Act. These include spectrum planning, allocation, licensing, monitoring, enforcement, and international coordination responsibilities. Section 31 further mandates URCA to develop and publish an NSP in consultation with the Minister responsible for the ECS ("the Minister").

## 1.3.1 Ministerial Oversight

Pursuant to sections 30(1) and (2) of the Comms Act, the Minister is vested with specific powers relating to the assignment of premium spectrum and associated spectrum fees or methodology for fee calculation. The Minister's strategic role in spectrum management includes:

- Approving or amending the NSP to ensure alignment with national development objectives and international obligations, including those of the ITU; and
- Overseeing the assignment of premium spectrum bands and associated fee structures in alignment with the Comms Act and national priorities, particularly in high-demand frequency bands critical for technological advancement and economic development.

In exercising these powers, the Minister is required to adhere to the objectives of radio spectrum management set out in section 32 of the Comms Act, as noted below.

The statutory framework of the Comms Act ensures that ministerial policy direction complements URCA's technical expertise and operational mandate.

# 1.3.2 Joint URCA and Minister Responsibilities

Under section 32 of the Comms Act, the Minister and URCA are responsible for ensuring that the objectives of radio spectrum management are achieved by conducting spectrum management in a manner that is:

- **Transparent and Inclusive**: Allocation and licensing processes must be open, fair, and non-discriminatory;
- Economically Efficient: Spectrum must be managed to meet current and anticipated demand, supporting emerging technologies, and
- **Standards-Driven**: Industry standards may be adopted, and license conditions may be imposed to manage interference effectively.

URCA is also empowered to promote technological innovation, address spectrum interference, and enhance the effective utilisation of spectrum resources.

# 1.3.3 URCA Responsibilities

**Part V (sections 29–38)** of the Comms Act articulates URCA's statutory functions in relation to spectrum management. These responsibilities encompass spectrum planning, allocation, licensing, regulation, enforcement, and coordination with national and international stakeholders.

Under **section 29**, URCA is vested with the exclusive right to manage, allocate, and assign all frequencies in the radio spectrum, subject only to the Minister's limited oversight regarding premium spectrum bands. This authority includes the issuance of individual and class spectrum licences and exemption determinations under section 35, as well as the development of technical rules and usage standards necessary to ensure efficient and interference-free use of radio frequencies.

URCA is further mandated under section 31 to formulate and publish an NSP in consultation with the Minister. This plan must align with international standards and treaties, particularly those of the International Telecommunication Union (ITU), and is to be revised at least every three years.

To ensure alignment with public and sectoral needs, section 34 of the Communications Act empowers URCA to consult relevant stakeholders, including government departments and electronic communications providers. In this regard, URCA may establish liaison committees involving agencies such as the Royal Bahamas Police Force, Royal Bahamas Defence Force, Civil Aviation Department, and other emergency or regulatory entities, to support coordinated planning and spectrum management.

URCA also holds enforcement authority under section 32(3) to protect licensed bands from interference and shall take prompt regulatory action as necessary. URCA may also vacate or reassign spectrum without compensation under the conditions set out in sections 36 and 37, such as non-use, misrepresentation, or broader policy needs. Additionally, section 38 permits URCA to regulate spectrum trading through rules that govern the transfer of spectrum rights between licensees.

Collectively, these provisions empower URCA to ensure that spectrum is managed in the national interest, effectively balancing economic efficiency, technological innovation, and compliance with international obligations.

# 1.3.4 International Alignment

The Bahamas' spectrum management framework is informed by international best practices and treaties to ensure harmonisation with global standards. Section 31(2) of the Comms Act requires URCA to comply with international obligations, notably the ITU Radio Regulations (ITU-RR), which are revised quadrennially at the World Radiocommunication Conferences (WRCs).

As a Member State of both the International Telecommunication Union (ITU) and the Inter-American Telecommunication Commission (CITEL), The Bahamas aligns its spectrum policies to:

- Facilitate cross-border cooperation;
- Address harmful interference; and
- Support international interoperability of emerging technologies.

This dual emphasis on harmonisation and national sovereignty ensures that spectrum policies serve global coordination objectives and domestic priorities.

## 1.4 How to Respond to this Consultation

URCA invites written responses from all stakeholders. Submissions must be received by 5:00 p.m. on 2 July 2025.

Responses should be addressed to the Director of Electronic Communications (or designate) and sent either:

• By mail to P.O. Box N 4860, Nassau, The Bahamas; or

• By email: info@urcabahamas.bs.

Respondents must provide justifications for their submissions and indicate the corresponding sections or consultation questions being addressed.

URCA reserves the right to make all responses available to the public by posting responses on its website at <u>www.urcabahamas.bs</u>. Responses marked 'confidential' should document supporting reasoning to assist with URCA's evaluation of the request for confidentiality. URCA may, in its sole discretion, choose whether to publish any confidential document or submission. Further information on URCA's procedure for handling information marked 'confidential' submitted by consultation respondents and URCA's consultation procedures in general can be found in URCA's Consultation Procedure Guidelines<sup>1</sup>.

Please take note that any response to this Consultation Document that does not comply with the requirements set out herein may not be considered by URCA.

## 1.5 Structure of the NSP

This document is structured as follows:

- Sections 2–8 detail key spectrum management areas: principles, allocation, band planning, pricing, authorisation, monitoring, compliance, and international coordination.
- Section 9 presents the implementation plan, including action items, performance indicators, risk mitigation, and timelines.
- Section 10 summarises the next steps following consultation.
- **Appendices** contain the revised National Frequency Allocation Table (NFAT) and standardised definitions.

<sup>&</sup>lt;sup>1</sup> URCA 04/2017 available at <u>https://urcabahamas.bs/wp-content/uploads/2017/07/URCA-042017-URCA-</u> <u>Consultation-Procedure-Guidelines.pdf</u>

#### SPECTRUM MANAGEMENT

The Government of The Bahamas recognises that effective spectrum management is critical to the development of national electronic communications infrastructure. In an environment where the demand for wireless technologies is rapidly expanding, it is essential to manage radio signals efficiently to avoid interference between users and services. Failure to do so may undermine the reliability of wireless communication systems, with consequences for both individuals and businesses.

In the more densely populated and technologically advanced islands of the archipelago, inadequate spectrum planning and regulatory oversight pose heightened risks. These could include inefficient spectrum use, artificial scarcity, limited access to critical frequencies, and stifled innovation. Consequently, economic opportunities may be constrained, and digital inequalities may be exacerbated.

To address these challenges, the Government of The Bahamas, in partnership with URCA, is committed to implementing robust spectrum management practices. This is viewed not only as a technical necessity but as a cornerstone of national development, fostering greater connectivity, inclusion, and economic empowerment.

#### 1.6 Principles and Strategic Objectives

The revised NSP is guided by key principles and strategic objectives that aim to optimise spectrum usage and is directly aligned towards achieving national development priorities. The principles include:

- Efficiency Ensure optimal spectrum allocation and use, responsive to technological advancements and market demands;
- **Transparency** Uphold open and fair processes, as outlined in Section 1.3.2 above;
- Non-Discrimination Promote equitable access to spectrum, fostering competition and digital inclusivity;
- **Technological Neutrality** Permit flexible technology deployment unless interoperability is required; and
- International Harmonisation Align with global standards to support cross-border cooperation and economies of scale.

#### Consultation Question 2: Guiding principles for spectrum management

Do you agree/disagree with URCA's guiding principles for spectrum management? Please give reasons why you disagree.

To operationalise these principles, the NSP 2025–2028 establishes the following strategic objectives:

- Optimised Spectrum Utilisation Manage spectrum to maximise its social, economic, and technological value;
- Equitable Access Expand access to underserved and remote communities;
- Support for Innovation Enable deployment of technologies such as 5G, IoT, and AI; and
- Alignment with National Development Goals Use spectrum policy to support public safety, digital inclusion, and sustainable development.

URCA notes that the foregoing objectives are designed to foster a responsive, inclusive, and forward-looking spectrum management framework in The Bahamas.

## **Consultation Question 3: Strategic objectives for spectrum Management**

Do you agree/disagree with URCA's strategic objectives for spectrum management? Please give reasons why you disagree.

## 1.7 National and International Priorities

As acknowledged above, the strategic direction of spectrum management over the 2025–2028 planning period is shaped by both global imperatives and national development priorities. Internationally, the outcomes of WRC-23 reaffirm the essential role of spectrum in enabling the deployment of transformative technologies and safeguarding critical services. Nationally, the ECS Policy 2024–2027 articulates The Bahamas' vision for leveraging modern technology for growth and fostering innovation to achieve digital transformation, inclusion, and sustainable development.

Together, these global and national priorities provide the foundation for URCA's strategic approach in the NSP 2025–2028. This alignment ensures that spectrum governance remains

forward-looking and development-focused, while also reinforcing The Bahamas' role in the international regulatory community.

#### International Priorities

As demand for seamless connectivity and technological advancement increases, spectrum allocations are crucial for enabling innovation, ensuring safety, supporting space and Earth observation, and maintaining accurate global timekeeping. The relevant international priorities include, inter alia:

- Spectrum for Emerging Technologies: New spectrum resources to support IMT technologies such as 4G, 5G, and future 6G. This includes frequency bands such as 3300–3400 MHz and 6425–7125 MHz. High-Altitude and High-Infrastructure Base Stations (HIBS/HAPS) have also been assigned portions of the 2 GHz and 2.6 GHz bands to improve mobile broadband access in remote areas, in addition to dedicated frequencies for high-speed broadband on vehicles, vessels, and aircraft (ESIMs).
- Enhancements in Safety and Navigation: Regulatory measures to modernise the Global Maritime Distress and Safety System (GMDSS) and allocations for Aeronautical Mobile Services, improving digital communications in the maritime and aviation sectors.
- Advancements in Space and Earth Observation: New provisions supporting the use of inter-satellite links, enhance monitoring of space weather interference, and improve data collection for disaster risk management and weather forecasting.
- **Global Timekeeping:** By 2035, Coordinated Universal Time (UTC) will be adopted as the global time standard for synchronising communication systems.

With 151 of 193 ITU Member States endorsing WRC-23 outcomes, these developments will guide future global wireless technology deployment. URCA has been tasked with incorporating these developments into the NSP.

#### National Priorities

The ECS Policy 2024–2027 outlines The Bahamas' national strategy to modernise and expand its communications infrastructure and promote sustainable and inclusive economic development. National Priorities include:

- Promoting adoption of transformative technologies such as 5G and AI-powered applications;
- Expanding broadband access to underserved areas, including the Family Islands;

- Encouraging investment in innovative technologies;
- Minimising cross-border interference by aligning the NFAT with international standards;
- Reviewing the current Universal Service Obligations (USOs) framework to ensure all the public have equal access to high-quality communications services;
- Where appropriate, the establishment of a Universal Service Fund (USF) framework to support the Government's USO agenda; and
- Integrating ICTs into broader national development efforts, particularly for employment, education, and the UN 2030 Sustainable Development Agenda.

These priorities highlight the essential role that modern technologies can play in achieving The Bahamas' development goals. URCA notes that effective spectrum management is critical to the attainment of these priorities.

As such, in the NSP 2025–2028, URCA articulates a clear strategy to maintain The Bahamas' leadership in spectrum governance while delivering tangible social and economic benefits.

## 1.8 Scope of the Revised Plan

Further to the above, the revised NSP addresses the *regulatory, technical, financial, and geographical* dimensions of spectrum management as required under section 32 of the Comms Act. While these statutory objectives define the scope of the NSP, the Plan also serves to advance the broader goals in ECS Policy 2024–2027 by ensuring that spectrum management is effective and supportive of national priorities such as digital transformation, inclusion, and innovation.

## **Regulatory Scope**

On the regulatory front, URCA has integrated international standards, national objectives, and statutory obligations into this strategic spectrum plan. Implementation will ensure continued coordination of wireless electronic communication networks and services, while advancing the statutory objectives of the Comms Act and supporting the broader national priorities of the ECS Policy 2024–2027, as noted above.

## Technical Scope

The electromagnetic spectrum covers the categories below.

# **Electromagnetic Frequency Spectrum**





Infra-Red Frequency

Visible Light **Frequency Spectrum** 

Ultra-Violet **Frequency Spectrum** 

75 THz – 3 PHz

Gamma Ray & X-ray Frequency Spectrum

3 kHz – 3,000 GHz

4 THz – 75 THz

3 PHz – >1EHz

# Figure 1: Classification of the Electromagnetic Frequency Spectrum

As illustrated in Figure 1, the lowest end of this range—the radio frequency spectrum—is most relevant for telecommunications. This band, from 3 kHz to 3,000 GHz, supports radio and television broadcasting, mobile communications, Wi-Fi, radar, and satellite services.

In the revised NSP, URCA focuses on implementing outcomes from WRC-23, including:

- New IMT spectrum allocations supporting 4G, 5G, and future 6G in the 3.3–3.4 GHz, 3.6– • 3.8 GHz, and 6.425–7.125 GHz bands;
- Designation of the 2110–2160 MHz and 2500–2690 MHz bands for High-Altitude Platform Stations (HAPS/HIBS);
- Identification of frequencies for Earth Stations in Motion (ESIMs) enabling broadband for land vehicles, vessels, and aircraft; and
- Regulatory enhancements to the Global Maritime Distress and Safety System (GMDSS).

## Financial Scope

URCA notes that under section 93(2) of the Comms Act, it may impose charges on standard spectrum to promote efficient use. Accordingly, URCA is reviewing ESIM-related pricing as part of a broader satellite framework launched in 2024. The review of ESIM-related pricing will address the satellite industry's concerns, including pricing and authorisation of spectrum in satellite bands.

Meanwhile, section 93(1) empowers the Minister to set or prescribe charges for the premium spectrum. While URCA advises the Minister when requested, it does not determine the level of pricing and/or pricing methodology for premium spectrum. Under sections 91 and 93(4), URCA collects spectrum licence fees, which are fully remitted to the Public Treasury.

# Geographical Scope

Spectrum management operates under the principle of territorial sovereignty. Accordingly, the geographical scope of this NSP includes all lands, territorial waters, and airspace comprising the Commonwealth of The Bahamas.

# 1.9 Radio Spectrum Management Strategy

URCA intends to address the regulatory, technical, financial, and geographical considerations outlined in Subsection 2.3 below by implementing and updating, as necessary, five core spectrum management processes: spectrum allocation, band planning, spectrum pricing, spectrum authorisation, and compliance monitoring and enforcement, as illustrated in Figure 2.



Figure 2: The Strategy Model for National Spectrum Management

The coordinated functioning of these five processes is internationally recognised as an effective means to promote digital inclusion, technological advancement, and sustainable competition in electronic communications markets. According to the ITU, such a strategy fosters economic and social progress. Ensuring public access to electronic communications services enhances productivity, competitiveness, and growth and helps bridge the development gap in education, healthcare, financial inclusion, economic diversification, etc. Such outcomes are most effectively realised when national spectrum allocation strategies are harmonised with those of the global community.

#### **Consultation Question 4:**

Do you agree/disagree with URCA's guiding principles and strategic objectives for spectrum management? Please give reasons why you disagree.

#### SPECTRUM ALLOCATION

Article 1 of the ITU Radio Regulations (ITU-RR) defines spectrum allocation as an entry in a frequency allocation table specifying the use of a given frequency band for particular terrestrial and satellite radio communication services. These allocations are internationally harmonised under the auspices of the ITU.

The Government of The Bahamas, through URCA, reaffirms its commitment to a modern, equitable, and innovation-driven approach to the allocation and assignment of spectrum resources. In response to increasing demand for digital connectivity and evolving technologies, URCA will implement a forward-looking framework that promotes efficient use, fair distribution, and alignment with national development priorities and international best practices.

## 1.10 Strategic Objectives of Spectrum Allocation and Assignment

URCA's spectrum allocation framework supports the Government's vision of a digitally inclusive and economically resilient Bahamas. The overarching objectives of the NSP at Section 1.2 above are advanced through the application of the following complementary principles:

- Service Needs Assessment: Allocations will be based on strategic assessments of national service requirements, including public safety, broadband expansion, and media.
- International Harmonisation: Allocations will align with international and regional frequency plans to facilitate cross-border coordination and global interoperability.
- Flexibility and Adaptability: URCA will maintain the ability to reallocate spectrum in response to technological evolution and market dynamics.
- **Interference Management**: Allocation decisions will include measures to mitigate harmful interference and maintain service quality.

## 1.11 National Frequency Allocation Table (NFAT)

The NFAT is URCA's principal tool for coordinating national spectrum use and harmonising it with international practices. It classifies the spectrum for services such as maritime and aeronautical radionavigation, broadcasting, mobile and fixed broadband, satellite, amateur radio, and public safety.

A summary of service categories in the NFAT is illustrated in Figure 3.

Radio Frequency Spectrum Allocation						
VLF 3 kHz-0.3 MHz	<b>LF</b> 0.3-3MHz	MF 3MHz-30MHz	VHF 30MHz-300MHz	UHF 300MHz-3GHz	SHF 3GHz-30GHz	<b>EHF</b> 30GHz-3000 GHz
Maritime mobile Maritime & Aeronautical Radio- navigation	Broadcasting Navigation Beacons Near-Field Comms	Broadcasting Maritime Amateur Citizen Band	FM Broadcasting Private & Public Land Base Radio Aeronautical Maritime	Broadcasting Mobile Telephone Fixed & Mobile Broadband Trunking	Fixed & Mobile Broadband Point to Point Links Satellite Fixed Wireless	Satellite Point to Point Links Multimedia Systems Amateur

Figure 2: Identification of Service Categories in the National Frequency Allocation Table

The NFAT, provided in full in Appendix A, reflects the structure of the ITU-RR for Region 2, which includes The Bahamas. URCA will continue to maintain and update the NFAT in accordance with the most recent ITU-RR amendments adopted at successive World Radiocommunication Conferences. The NFAT will do the following:

- Reflect both international and national priorities;
- Distinguish between primary and secondary service allocations as defined by the ITU; and
- Include allocations for essential services such as mobile broadband, broadcasting, satellite communications, and public safety.

## 1.12 Key Amendments to the National Frequency Allocation Table

On the basis of WRC-23 and resulting revisions to the ITU-RR, URCA has introduced the following amendments to The Bahamas' NSP:

IMT Spectrum Allocation: These are the new frequency bands to support IMT services, including 3300–3400 MHz (Region 1), 3600–3800 MHz (Regions 2 and 3), 4800–4990 MHz (Region 3), and 6425–7125 MHz (licensed in Regions 1 and 3, with Region 2 subject to national decisions).

- **High-Altitude Platform Stations (HAPS/HIBS)**: The following approved frequency bands in the 2 GHz and 2.6 GHz bands for HIBS operating as IMT base stations, enabling mobile broadband access in rural and remote areas:
  - 1885–1980 MHz (uplink)
  - o 2010–2025 MHz (downlink)
  - 2500–2690 MHz (paired/unpaired TDD, as regionally appropriate)
- **Earth Stations in Motion (ESIMs)**: New frequencies for ESIMs enhance broadband connectivity for moving platforms such as aircraft, vessels, and land vehicles:
  - 17.7–18.6 GHz (downlink)
  - o 27.5–29.5 GHz (uplink)
- Global Maritime Distress and Safety System (GMDSS): Regulatory improvements were made to modernise the GMDSS, including provisional recognition of the BeiDou Satellite Messaging Service, subject to further coordination.
- **Space Science Services**: Additional frequencies were allocated to support Earth observation, climate monitoring, and air traffic control in remote areas:
  - 36–37 GHz and 42.5–43.5 GHz (Earth exploration satellites)
  - 117.975–137 MHz and 137–137.025 MHz (aeronautical mobile satellite services)

These amendments balance innovation, interference management, and equitable spectrum access across geographic and technological contexts.

## **Consultation Question 5: Amendments to National Frequency Allocation Table**

Do you agree/disagree with URCA's proposed amendments to the NFAT? Please give reasons why you disagree.

#### SPECTRUM BAND PLANNING

A band plan is a technical framework used to coordinate frequency assignments and mitigate harmful in-band and out-of-band interference. To ensure the effective use of spectrum as outlined in the NFAT, URCA intends to develop new spectrum band plans following the publication of the revised NSP. These band plans will not be included in this document but will be formulated as part of subsequent technical planning exercises.

#### 1.13 Key Parameters

Each spectrum band plan will include the technical parameters necessary for efficient and interference-free use. These parameters are outlined in Table 5A and include:

- **Centre Frequency**: The central frequency of a given band, ensuring alignment with regulatory allocations and reducing interference.
- **Bandwidth**: The total range of frequencies used by a signal, determining data rates and channel capacity.
- **Guard Band**: A buffer zone between frequencies to prevent adjacent channel interference.
- **Spectral Mask**: Limits on signal emissions beyond allocated frequencies to reduce interference.
- **Modulation**: The technique used to transmit information, impacting throughput, robustness, and spectral efficiency.

All band plans will align with national and ITU-R allocation tables, ensuring regional and global standards are compatible. Spectrum assignments will be granted only in accordance with the established band plans.

#### **Consultation Question 6:**

Do you agree/disagree with URCA's proposal to formulate spectrum band plans?

Do you agree with URCA's proposed use of the above standardised technical parameters for development of spectrum band plans? Please suggest any additional technical or policy elements that should inform band planning.

# 1.14 Policy Considerations in Spectrum Band Planning

Band planning is driven by increased demand for new or improved wireless services. The goals of this process include:

- Harmonising spectrum access to enable interoperability and economies of scale;
- Promoting efficient spectrum use; and
- Improving access to ICT services throughout The Bahamas.

URCA will pursue these goals by:

- Setting policy priorities for spectrum assignments;
- Harmonising national band plans with regional and international frameworks;
- Coordinating assignments across mobile, maritime, aeronautical, and public safety services;
- Facilitating access for both public and private users; and
- Promoting sustainable innovation and competition.

URCA will utilise software-based tools to support strategic spectrum planning, monitor global developments, and forecast user demand. These tools will inform short-term, medium-term, and long-term planning to ensure optimal resource deployment.

Band plans must reflect current trends, encourage competition, and support service compatibility. Assignments may be exclusive or shared, and URCA will establish technical compliance rules and conduct random occupancy surveys to ensure adherence.

## 1.15 Opening New Spectrum Bands

To promote high-quality, diverse content services and facilitate market entry, URCA proposes to open previously unassigned or administratively restricted spectrum bands. While the NFAT reflects permitted services in accordance with the ITU-RR, the act of opening a band refers to URCA's administrative process of making a band available for licensing and use. This process includes the formulation of band plans, assignment rules, and pricing structures. Bands proposed for opening include those designated for expansion of IMT-2000, IMT-Advanced, and IMT-2020 services.

In April 2018, URCA issued a Final Determination regarding the Proposal to Open Standard Spectrum Band (ECS 04/2018). ECS 04/2018 outlines the process URCA follows when opening

previously closed standard bands. URCA advises that, except in extenuating circumstances, it will adhere to the procedures specified in that document for the opening of new spectrum bands.

# 1.16 Determination of Spectrum Band Plans

# Consultation Question 7:

Do you support URCA's proposal to open previously closed spectrum bands to increase market access? What considerations should guide the selection and provisioning of new spectrum bands?

New band plans will be opened in adherence to ECS 04/2018 while conforming to the ITU-RR and will be harmonised with the ITU Region 2 allocation plan. These plans aim to:

- Enable harmonised access and interoperability;
- Improve spectrum efficiency; and
- Enhance access to ICT services across The Bahamas.

In proposing such policies, URCA will assess the economic impact on users and prioritise harmonisation with international markets to maximise potential benefits.

# 1.17 Premium and Standard Spectrum

The Comms Act allows for the classification of spectrum as either Premium or Standard. The NFAT identifies which bands fall into each category.

**Premium Spectrum** refers to high-demand bands essential for services like mobile broadband. These bands are:

- Determined based on demand, technological suitability, potential for competition, and the efficiency of competitive award mechanisms.
- Assigned with recommendation from ITU and CITEL, and therefore reflects global harmonisation trends.

Four new Premium Spectrum bands have been added in this NSP, supplementing those previously identified in the 2014–2017 Plan. Table 5A lists these bands.

Lower Limit		Upper Limit	Band	Availability	Allocating (i.e., Assignment) Method
470 MHz	-	698MHz	Sub-700 MHz band	Open	Determined by the Minister
698 MHz	-	806 MHz	700 MHz Band	Open	Determined by the Minister
824 MHz	-	849 MHz	9 MHz 850 MHz Band Uplink Open Determined b		Determined by the Minister
869 MHz		894 MHz	850 MHz Band Downlink	Open	Determined by the Minister
1350 MHz	-	1400 MHz	L- Band	Open (new)	Determined by the Minister
1427 MHz	-	1518 MHz	L-Band	Open (new)	Determined by the Minister
1710 MHz	-	1785 MHz	1700 MHz Band	Open	Determined by the Minister
1850 MHz	-	1915 MHz	1900 MHz Band Uplink	Open	Determined by the Minister
1930 MHz	-	1995 MHz	1900 MHz Band Downlink	Open	Determined by the Minister
2110 MHz	-	2185 MHz	2100 MHz Band	Open	Determined by the Minister
2305 MHz	-	2320 MHz	2300 MHz Band Uplink	Open	Determined by the Minister
2345 MHz	-	2360 MHz	2300 MHz Band Downlink	Open	Determined by the Minister
2500 MHz	-	2690 MHz	2600 MHz Band	Open (new)	Determined by the Minister
3400 MHz	-	4200 MHz	C-Band	Open (New)	Determined by the Minister

**Table 5A: List of Premium Spectrum Bands** 

URCA may (after consultation) reclassify Standard bands as Premium if demand significantly exceeds supply, and vice versa.

## 1.18 Technical Standards

Under section 32 of the Comms Act, URCA may adopt voluntary industry standards and must act to protect licensed spectrum from interference. Standardisation supports harmonisation, interoperability, and economies of scale.

URCA focuses on the physical and media control layers of communication systems, ensuring multi-vendor compatibility. It tracks global standards from recognised bodies and enforces accurate Quality of Service (QoS) claims by licensees.

QoS standards for IMT technologies (3G to 6G) are detailed in Table 5B.

Generation	IMT Standard	Launch / Standardised	Main Goals	Peak Data Rates	Technologies	Key Features
3G	IMT-2000	Early 2000s	Enable global roaming and support data services beyond voice	384 kbps (mobile), 2 Mbps (stationary)	WCDMA (UMTS), CDMA2000, TD-SCDMA	Mobile internet, multimedia services, global compatibility
4G	IMT- Advanced	2012	Provide a true mobile broadband experience	100 Mbps (mobile), 1 Gbps (stationary)	LTE- Advanced, WiMAX- Advanced	All-IP network, high spectral efficiency, low latency (~20–30 ms), seamless handoff, HD video, VoIP
5G	IMT-2020	2020	High-speed, ultra- reliable, low-latency connectivity	20 Gbps (downlink), 10 Gbps (uplink)	5G NR, mmWave, Massive MIMO	URLLC, eMBB, mMTC, network slicing, latency < 1 ms, loT, autonomous vehicles, smart cities
6G (Future)	IMT-2030	Expected ~2030	Immersive experiences, human– machine convergence	100 Gbps or more	Sub-THz, AI/ML integration, satellite, digital twins	Holographic comms, tactile internet, sustainable networks, ambient intelligence

Table 5B: Global QoS Standards for International Mobile Telecommunications (IMT)

Additionally:

- URCA will not assign broadcasting services in the 698–806 MHz range, which is allocated to mobile, fixed broadband, and public safety.
- Digital TV broadcasting must follow the ATSC standard; other digital television standards require URCA approval.

## 1.19 Refarming of Spectrum

The growing demand for spectrum, driven by more efficient technologies, may necessitate reallocating frequencies—a process known as refarming.

URCA may consider refarming during the NSP's lifecycle. Before doing so, URCA will evaluate:

- National interest;
- Stakeholder input;
- Existing private sector investment;
- Reconfiguration and migration costs; and
- Government usage requirements.

Key considerations include who bears transition costs and how such changes affect market structure, technical efficiency, and regulatory obligations.

## SPECTRUM PRICING

The Comms Act—specifically sections 30, 32, 92, and 93—provides the legislative framework for the pricing of radio spectrum in The Bahamas. This framework aligns with the principle of efficient spectrum use as outlined in Section 3.1 above. URCA adopts spectrum pricing policies designed to:

- Encourage efficient use by discouraging hoarding and underutilisation;
- Reflect market value through dynamic and demand-responsive pricing mechanisms;
- Ensure fairness via consistent and transparent fee structures;
- Recover the cost of regulatory planning, oversight, and monitoring; and
- Promote national development priorities, particularly in areas of connectivity and innovation.

## 1.20 Spectrum Classification and Pricing Authority

As already noted in Sections 1.3.1 and 2.3, the Minister is responsible for the pricing of **Premium Spectrum** under section 30 of the Comms Act. The Minister has the power to set fees or prescribe fee-setting methodologies that support optimal use of these high-demand frequency bands.

- As explained in Section 2.3, URCA is authorised to determine fees for Standard Spectrum.
  Under section 93, URCA may apply pricing principles based on usage, efficiency, and demand.
- Section 92 of the Comms Act further empowers URCA to impose administrative charges related to its spectrum management functions on Premium and Standard Spectrum.

## 1.21 Spectrum Pricing Models and Methods

URCA may apply a combination of pricing methods tailored to the characteristics of the spectrum band and prevailing market conditions, including:

- 1. **Cost-Based Pricing**: Fees calculated based on bandwidth and geographic coverage to promote efficient spectrum utilisation.
- 2. **Market-Based Pricing**: Competitive bidding or auctions for high-demand bands to ensure spectrum is allocated to those who value it most.
- 3. **Incentive Pricing**: Usage-based fees designed to discourage hoarding and promote active use of assigned frequencies.

4. **Dynamic Pricing Models**: Adaptive pricing schemes that adjust fees in response to realtime demand and market changes.

These methods may be selected on a case-by-case basis, having regard to the nature of the spectrum band, its intended use, and overarching regulatory goals, amongst other considerations.

# 1.22 Incentive Fee Formula for Standard Spectrum

For exclusive-use Standard Spectrum bands, URCA applies an incentive-based fee formula that accounts for technical, economic, and social considerations. The formula is expressed as:

## $Fee = C \times BW \times TF \times CF \times FBF$

Where:

- **C** = A constant reflecting economic and social factors and service type;
- **BW** = Bandwidth assigned (in MHz);
- **TF** = Time factor (duration of assignment);
- **CF** = Coverage factor (based on population served); and
- **FBF** = Frequency Band Factor (captures scarcity, propagation characteristics, and cost of management).

This formula provides a structured and scalable method for setting fees that reflect the true value of the spectrum to the licensee. For shared-use bands, such as those allocated to public broadcasters or other community-based services, flat-rate fees may be applied, subject to periodic review by URCA.

## **Consultation Question 8:**

Do you agree/disagree with URCA's updated framework for spectrum pricing? Please give reasons why you disagree. Are there additional considerations or methodologies URCA should explore to enhance fairness, innovation, and efficiency?

#### SPECTRUM AUTHORISATION

Spectrum authorisation is the legal mechanism by which URCA grants rights to use specific frequencies. It ensures that spectrum use is controlled, interference is managed, and users adhere to their regulatory obligations. The authorisation framework is central to achieving equitable and efficient access to the national spectrum resource.

#### 1.23 Licensing Regimes

URCA employs a range of licensing approaches depending on the type of service, market conditions, and public interest considerations. These include:

- Individual Licences: Granted to users who require exclusive rights to the licensed spectrum. These licenses typically include certain mobile network operators, private and public terrestrial, maritime, aeronautical services, and broadcasters.
- **Class Licences**: Granted to a general class of users for specific uses under uniform conditions. Common for low-power and shared-use applications.
- **Exemptions**: Certain services may be exempt from licensing where interference risk is minimal and use is consistent with public interest.

Each approach reflects the principle that authorisation requirements must be proportionate to the nature, scope, and risk of the service involved.

## 1.24 Commercial Use of Licence-Exempt Spectrum

Licence-exempt spectrum bands are traditionally designated for low-power devices and applications with minimal interference concerns. Typically, these bands are used by individuals or organisations that do not directly use this spectrum for commercial gain and do not incur regulatory fees. However, the use of licence-exempt spectrum for commercial gains raises concerns for URCA. Indeed, URCA considers that using this spectrum for commercial purposes warrants a reassessment of the current regulatory framework. As such, URCA proposes the development of a new framework for the commercial use of licence-exempt spectrum. This framework should consider the need for appropriate technical conditions, determine whether licensing or registration is necessary, and evaluate whether regulatory fees should be imposed on commercial users. This anticipatory policy shift acknowledges market trends while preserving the public value of licence-exempt resources.

#### **Consultation Question 9:**

URCA is considering a new regulatory framework for commercial use of licence-exempt spectrum. Do you support this initiative? What safeguards or conditions should be considered?

#### **1.25** Assignment Process

Spectrum assignments are conducted through administrative procedures, comparative evaluations, or competitive bidding. URCA determines the most appropriate mechanism based on Government policy (especially in the case of premium spectrum), spectrum scarcity, demand, and national priorities. URCA advises that:

- Administrative Assignment is applied where the spectrum is not scarce and the risk of interference is low.
- **Comparative Evaluation** is used when multiple qualified applicants exist, but auctioning is not appropriate.
- **Competitive Bidding** is applied to high-demand spectrum to ensure efficient allocation and fair market valuation.

Assignment criteria include service quality, geographic coverage, rollout obligations (inclusive of timelines), contribution to the Government's digital inclusion agenda, technical competence, and financial capability.

## 1.26 Licence Conditions

All licenses issued by URCA are subject to specific terms and conditions, including:

- Compliance with technical standards and operational rules;
- Service quality and coverage obligations;
- Restrictions on transfer or leasing, unless otherwise approved;
- Payment of applicable spectrum and regulatory fees; and
- Provisions for renewal, suspension, or revocation.

URCA periodically reviews license compliance and may conduct audits or inspections to enforce regulatory obligations.

# **1.27** Duration and Renewal

Licences are typically granted for periods ranging from 1 to 15 years, depending on the service and investment horizon. Renewal is not automatic; licensees must demonstrate continued compliance with and relevance to the service.

URCA will provide clear criteria and timelines for renewal evaluations and will conduct stakeholder consultations where policy changes are proposed.

## 1.28 Shared and Dynamic Access Models

To improve spectrum efficiency and support emerging technologies, URCA is exploring shared and dynamic access models. These approaches allow multiple users to access spectrum on a timeor location-specific basis under clearly defined technical and regulatory conditions. URCA recognises that such models can enhance spectrum availability, especially for rural, enterprise, and innovation-driven applications.

In view of this, URCA will:

- Identify suitable bands for shared or dynamic use;
- Define sharing frameworks and technical standards; and
- Consult stakeholders on implementation and safeguards.

**Consultation Question 10:** Do you gree with URCA's proposed licensing and authorisation framework? Are there additional authorisation mechanisms or licence conditions that should be considered to meet national connectivity, innovation, or competition goals?

#### MONITORING AND COMPLIANCE

Effective spectrum management requires robust monitoring and compliance mechanisms to ensure that frequency use aligns with authorisations and does not cause harmful interference. URCA is committed to enforcing spectrum regulations and promoting responsible use by all licensees.

#### 1.29 Monitoring Systems

URCA maintains a national spectrum monitoring system capable of identifying and analysing spectrum usage. Key capabilities include:

- Detecting unauthorised transmissions and sources of interference;
- Verifying compliance with technical licence conditions; and
- Assessing spectrum occupancy and utilisation trends.

These monitoring efforts support proactive regulation and informed decision-making. URCA continues to enhance its monitoring tools and geographic coverage, including in remote islands.

#### 1.30 Interference Management

URCA responds to interference complaints and investigates potential violations of spectrum rights. The interference management process includes:

- Receiving and logging complaints;
- Investigating signal sources and technical parameters;
- Coordinating with affected users and international counterparts, where applicable; and
- Enforcing remedial actions or sanctions where necessary.

URCA prioritises coordination and transparency in resolving interference, particularly in shared bands and bands subject to cross-border propagation.

#### **1.31** Compliance Enforcement

URCA may initiate enforcement actions in response to non-compliance with licence conditions, unauthorised use, or harmful interference. Possible enforcement actions include:

- Issuing warnings or directives;
- Licence suspension or revocation; and
- Financial penalties or legal proceedings, pursuant to the Comms Act.

URCA applies a proportionate enforcement approach, taking into account the severity, frequency, and impact of violations.

#### 1.32 Public Awareness and Stakeholder Engagement

URCA promotes public understanding of spectrum obligations and user responsibilities. Outreach initiatives include:

- Public notices and educational materials;
- Stakeholder workshops and consultations; and
- Targeted engagement with high-risk sectors (e.g., broadcasters, maritime operators, and amateur radio users).

Greater awareness fosters voluntary compliance and reduces the likelihood of disputes or infractions.

## **Consultation Question 11: Spectrum Monitoring and Compliance**

Do you support URCA's approach to monitoring and compliance? Are there specific technologies, procedures, or engagement strategies you believe URCA should adopt to strengthen enforcement and stakeholder cooperation?

#### INTERNATIONAL COORDINATION

It bears repeating that The Bahamas' spectrum management framework is closely aligned with international standards to ensure interoperability, minimise cross-border interference, and support global innovation. URCA actively engages with regional and global partners to harmonise frequency use, participate in policy development, and facilitate information sharing.

#### 1.33 ITU and CITEL Participation

As a Member State of the International Telecommunication Union (ITU), the Inter-American Telecommunication Commission (CITEL), and the Caribbean Telecommunications Union (CTU), The Bahamas plays an active role in shaping international spectrum policy.

URCA represents The Bahamas in:

- ITU Radiocommunication Sector (ITU-R) Study Groups and Working Parties;
- CITEL Permanent Consultative Committee II (PCC.II);
- World Radiocommunication Conferences (WRCs) and Regional Preparatory Meetings (RPMs); and
- CTU Meetings.

These engagements help URCA:

- Align national policies with ITU Radio Regulations (ITU-RR);
- Stay informed of global trends and emerging technologies; and
- Build regional consensus and coordination in the Americas.

#### 1.34 Bilateral and Multilateral Coordination

URCA participates in bilateral and multilateral efforts to manage cross-border frequency issues. These efforts are essential for preventing harmful interference and ensuring service continuity in The Bahamas and neighbouring jurisdictions.

As such, URCA will continue to:

- Negotiate coordination agreements for satellite, maritime, and aeronautical services;
- Participate in regional monitoring initiatives and data-sharing arrangements;
- Facilitate emergency communications interoperability.

# 1.35 Global Harmonisation and Trade

Harmonising national spectrum practices with international standards enhances The Bahamas' ability to:

- Promote global equipment compatibility and economies of scale;
- Attract foreign investment in telecommunications infrastructure; and
- Enable international roaming and access to advanced services.

URCA will maintain its commitment to global alignment while protecting national interests and regulatory autonomy.

#### IMPLEMENTATION PLAN

URCA recognises that the successful implementation of the National Spectrum Plan (NSP) 2025–2028 requires clear timelines, defined responsibilities, performance monitoring, and effective stakeholder engagement. URCA will adopt a structured approach to ensure the timely and transparent delivery of the Plan's strategic objectives.

## 1.36 Implementation Roadmap

URCA will prioritise actions according to urgency, resource requirements, and regulatory dependencies. Key implementation activities include:

- Finalising spectrum band plans;
- Reviewing and updating licensing frameworks;
- Developing new policies for shared spectrum access and refarming;
- Conducting pricing reviews and stakeholder consultations;
- Enhancing spectrum monitoring and enforcement capabilities.

The roadmap will be regularly updated to reflect evolving sectoral needs and international developments.

## **1.37** Timelines and Milestones

URCA will publish an implementation schedule that includes:

- Key milestones for each strategic initiative;
- Timelines for consultation, policy finalisation, and execution;
- Responsibilities assigned to URCA departments and relevant stakeholders.

Progress will be reviewed quarterly, and adjustments will be made where necessary.

## 1.38 Performance Indicators

URCA will evaluate implementation outcomes using defined performance indicators. These will measure:

- Spectrum utilisation rates and efficiency improvements;
- Stakeholder participation in consultations and compliance audits;
- Expansion of service coverage in underserved areas;
- Number and scope of new or revised band plans and policies;

• Resolution rates of interference and non-compliance cases.

These indicators will help URCA assess impact and ensure accountability.

## 1.39 Risk Management

URCA recognises the importance of identifying and mitigating implementation risks. These include:

- Delays in stakeholder engagement or Ministerial approvals;
- Insufficient technical or financial resources;
- Unanticipated interference or cross-border issues;
- Rapid technological change or market disruption.

Risk mitigation strategies include contingency planning, early stakeholder engagement, phased implementation, and continued alignment with international best practices.

# 1.40 Stakeholder Engagement

Successful implementation depends on the collaboration of government agencies, ECS licensees, consumer groups, and international partners. URCA will facilitate ongoing engagement through the following:

- Public consultations and workshops;
- Targeted briefings with key industry players;
- Regional and global forums;
- Online updates and feedback channels.

URCA remains committed to a transparent and inclusive implementation process.

# **Consultation Question 12: Implementation Plan**

Do you agree/disagree with URCA's proposed implementation approach? What specific risks, milestones, or performance metrics should be prioritised to ensure effective delivery of the NSP 2025–2028?

#### **CONCLUSION AND NEXT STEPS**

The National Spectrum Plan (NSP) 2025–2028 establishes a strategic, policy-driven approach to spectrum management in The Bahamas. It outlines the legal framework, regulatory objectives, technical guidelines, and implementation mechanisms necessary to promote efficient, inclusive, and forward-looking use of the national spectrum resource.

Through this Plan, URCA reaffirms its commitment to regulatory transparency, international harmonisation, innovation enablement, and universal access to electronic communication services. The NSP also reflects The Bahamas' alignment with the evolving global digital landscape, incorporating outcomes from WRC-23 and national objectives under the ECS Policy 2024–2027.

URCA recognises that realising the goals of this Plan will require sustained collaboration with all stakeholders, including government ministries, ECS licensees, technology developers, international partners, and the Bahamian public.

After this consultation, URCA will take the following steps:

- 1. Review all responses and evaluate the suggestions received; then, amend the draft as appropriate;
- 2. Submit the revised draft to the Minister for approval. Afterwards, either the Minister or URCA will publish a Final Spectrum Plan;
- 3. Begin the execution of the Implementation Plan (as outlined in Section 9); and
- 4. Monitor and report on progress toward achieving the objectives of the Plan.

Stakeholder input remains a critical element of URCA's regulatory process. All responses will be given due consideration, and URCA will maintain an open and participatory approach throughout the finalisation and rollout of the NSP 2025–2028.

#### **Consultation Question 13: Conclusion and Next Steps**

Do you have any final comments or recommendations regarding the structure, priorities, or implementation of the National Spectrum Plan 2025–2028?
# APPENDIX A: NATIONAL FREQUENCY ALLOCATION TABLE (NFAT)

The National Frequency Allocation Table (NFAT) has been revised in accordance with the 2024 edition of the Radio Regulations as revised, approved and adopted by the World Radiocommunication Conference (Dubai, 2023). This NFAT is consistent with the international table of frequency allocations set out in the ITU Radio Regulations. It covers the range of frequencies from 0 kHz to 3000 GHz.

In accordance with international standards, allocations are made on a primary or secondary basis. Stations of a secondary service cannot cause harmful interference to stations of primary services to which frequencies are already assigned or to which frequencies may be assigned later. Neither can stations of a secondary service claim protection from another secondary service, frequencies of which may be assigned later.

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
Below 8.3	kHz	(Not allocated) 5.53 5.54	STANDARD SPECTRUM	
8.3-9	kНz	METEOROLOGICAL AIDS 5.54A 5.54B 5.54C	STANDARD SPECTRUM	
9-11.3	kHz	METEOROLOGICAL AIDS 5.54A RADIONAVIGATION	STANDARD SPECTRUM	
11.3-14	kНz	RADIONAVIGATION	STANDARD SPECTRUM	

Frequency		Service Allocations	Classification
14-19.95	kHz	FIXED MARITIME MOBILE 5.57 5.55 5.56	STANDARD SPECTRUM
19.95-20.05	kНz	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	STANDARD SPECTRUM
20.05-70	kHz	FIXED MARITIME MOBILE 5.57 5.56 5.58	STANDARD SPECTRUM
70-90	kHz	FIXED MARITIME MOBILE 5.57 MARITIME RADIONAVIGATION 5.60 Radiolocation 5.61	STANDARD SPECTRUM
90-110	kНz	RADIONAVIGATION 5.62 Fixed 5.64	STANDARD SPECTRUM
110-130	kНz	FIXED MARITIME MOBILE MARITIME RADIONAVIGATION 5.60 Radiolocation 5.61 5.64	STANDARD SPECTRUM
130-135.7	kHz	FIXED MARITIME MOBILE 5.64	STANDARD SPECTRUM
135.7-137.8	kHz	FIXED MARITIME MOBILE Amateur 5.67A 5.64	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
137.8-160	kНz	FIXED MARITIME MOBILE 5.64	STANDARD SPECTRUM	
160-190	kНz	FIXED	STANDARD SPECTRUM	
190-200	kHz	AERONAUTICAL RADIONAVIGATION	STANDARD SPECTRUM	
200-275	kHz	AERONAUTICAL RADIONAVIGATION Aeronautical mobile	STANDARD SPECTRUM	
275-285	kНz	AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radio navigation (radio beacons)	STANDARD SPECTRUM	
285-315	kHz	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radio beacons) 5.73	STANDARD SPECTRUM	
315-325	kHz	MARITIME RADIONAVIGATION (radio beacons) 5.73 Aeronautical radionavigation	STANDARD SPECTRUM	
325-335	kHz	AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radio beacons)	STANDARD SPECTRUM	

Frequency		Service Allocations	Classification
335-405	kHz	AERONAUTICAL RADIONAVIGATION Aeronautical mobile	STANDARD SPECTRUM
405-415	kHz	RADIONAVIGATION 5.76 Aeronautical mobile	STANDARD SPECTRUM
415-472	kHz	MARITIME MOBILE 5.79 Aeronautical radionavigation 5.77 5.80 5.78 5.82	STANDARD SPECTRUM
472-479	kHz	MARITIME MOBILE 5.79 Amateur 5.80A Aeronautical radionavigation 5.77 5.80 5.80B 5.82	STANDARD SPECTRUM
479-495	kНz	MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.77 5.80 5.82	STANDARD SPECTRUM
495-505	kНz	MARITIME MOBILE 5.82C 5.82D	STANDARD SPECTRUM
505-510	kHz	MARITIME MOBILE 5.79	STANDARD SPECTRUM
510-525	kHz	MOBILE 5.79A 5.84 AERONAUTICAL RADIONAVIGATION	STANDARD SPECTRUM
525-535	kHz	BROADCASTING 5.86 AERONAUTICAL RADIONAVIGATION	STANDARD SPECTRUM

NATIONAL	FREQUENCY ALLOCATION TABLE	

Frequency		Service Allocations	Classification
535-1 605	kHz	BROADCASTING	STANDARD SPECTRUM
1 605-1 625	kHz	BROADCASTING 5.89 5.90	STANDARD SPECTRUM
1 625-1 705	kHz	FIXED MOBILE BROADCASTING 5.89 Radiolocation 5.90	STANDARD SPECTRUM
1 705-1 800	kНz	FIXED MOBILE RADIOLOCATION AERONAUTICAL RADIONAVIGATION	STANDARD SPECTRUM
1 800-1 850	kНz	AMATEUR	STANDARD SPECTRUM
1 850-2 000	kHz	AMATEUR FIXED MOBILE except for aeronautical mobile RADIOLOCATION RADIONAVIGATION 5.102	STANDARD SPECTRUM
2 000-2 065	kНz	FIXED MOBILE	STANDARD SPECTRUM
2 065-2 107	kHz	MARITIME MOBILE 5.105 5.106	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE			
Frequency		Service Allocations	Classification
2 107-2 170	kНz	FIXED MOBILE	STANDARD SPECTRUM
2 170-2 173.5	kНz	MARITIME MOBILE	STANDARD SPECTRUM
2 173.5-2 190.5	kНz	MOBILE (distress and calling) 5.108 5.109 5.110 5.111	STANDARD SPECTRUM
2 190.5-2 194	kHz	MARITIME MOBILE	STANDARD SPECTRUM
2 194-2 300	kHz	FIXED MOBILE 5.112	STANDARD SPECTRUM
2 300-2 495	kHz	FIXED MOBILE BROADCASTING 5.113	STANDARD SPECTRUM
2 495-2 501	kHz	STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	STANDARD SPECTRUM
2 501-2 502	kHz	STANDARD FREQUENCY AND TIME SIGNAL Space Research	STANDARD SPECTRUM

NATIONAL ERFO	LIENCY		ION TABLE
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Frequency		Service Allocations	Classification
2 502-2 505	kНz	STANDARD FREQUENCY AND TIME SIGNAL	STANDARD SPECTRUM
2 505-2 850	kНz	FIXED MOBILE	STANDARD SPECTRUM
2 850-3 025	kHz	AERONAUTICAL MOBILE (R) 5.111 5.115	STANDARD SPECTRUM
3 025-3 155	kHz	AERONAUTICAL MOBILE (OR)	STANDARD SPECTRUM
3 155-3 200	kНz	FIXED MOBILE except aeronautical mobile (R) 5.116 5.117	STANDARD SPECTRUM
3 200-3 230	kНz	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	STANDARD SPECTRUM
3 230-3 400	kHz	FIXED MOBILE except for aeronautical mobile BROADCASTING 5.113 5.116 5.118	STANDARD SPECTRUM
3 400-3 500	kНz	AERONAUTICAL MOBILE (R)	STANDARD SPECTRUM

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NATIONAL	FREQUEIN	

Frequency		Service Allocations	Classification
3 500-3 750	kНz	AMATEUR 5.119	STANDARD SPECTRUM
3 750-4 000	kНz	AMATEUR FIXED MOBILE except aeronautical mobile (R) 5.122 5.125	STANDARD SPECTRUM
4 000-4 063	kHz	FIXED MARITIME MOBILE 5.127 5.126	STANDARD SPECTRUM
4 063-4 438	kHz	MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128	STANDARD SPECTRUM
4 438-4 488	kHz	FIXED MOBILE except for aeronautical mobile (R) RADIOLOCATION 5.132A	STANDARD SPECTRUM
4 488-4 650	KHz	FIXED MOBILE except aeronautical mobile (R)	STANDARD SPECTRUM
4 650-4 700	kНz	AERONAUTICAL MOBILE (R)	STANDARD SPECTRUM
4 700-4 750	kНz	AERONAUTICAL MOBILE (OR)	STANDARD SPECTRUM

NATIONA		ENCV AL		TADIE
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Frequency		Service Allocations	Classification
4 750-4 850	kHz	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113	STANDARD SPECTRUM
4 850-4 995	kНz	FIXED LAND MOBILE BROADCASTING 5.113	STANDARD SPECTRUM
4 995-5 003	kHz	STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	STANDARD SPECTRUM
5 003-5 005	kHz	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD SPECTRUM
5 005-5 060	kНz	FIXED BROADCASTING 5.113	STANDARD SPECTRUM
5 060-5 250	kНz	FIXED Mobile except for aeronautical mobile 5.133	STANDARD SPECTRUM
5 250-5 275	kHz	FIXED MOBILE except for aeronautical mobile RADIOLOCATION 5.132A	STANDARD SPECTRUM
5 275-5 351.5	kНz	FIXED MOBILE except for aeronautical mobile	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
5 351.5-5 366.5	kHz	FIXED MOBILE except for aeronautical mobile Amateur 5.133B	STANDARD SPECTRUM
5 366.5-5 450	kHz	FIXED MOBILE except for aeronautical mobile	STANDARD SPECTRUM
5 450-5 480	kHz	AERONAUTICAL MOBILE (R)	STANDARD SPECTRUM
5 480-5 680	kHz	AERONAUTICAL MOBILE (R) 5.111 5.115	STANDARD SPECTRUM
5 680-5 730	kHz	AERONAUTICAL MOBILE (OR) 5.111 5.115	STANDARD SPECTRUM
5 730-5 900	kНz	FIXED MOBILE except for aeronautical mobile (R)	STANDARD SPECTRUM
5 900-5 950	kHz	BROADCASTING 5.134 5.136	STANDARD SPECTRUM
5 950-6 200	kНz	BROADCASTING	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
6 200-6 525	kHz	MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137A 5.137	STANDARD SPECTRUM
6 525-6 685	kНz	AERONAUTICAL MOBILE (R)	STANDARD SPECTRUM
6 685-6 765	kHz	AERONAUTICAL MOBILE (OR)	STANDARD SPECTRUM
6 765-7 000	kHz	FIXED MOBILE except aeronautical mobile (R) 5.138	STANDARD SPECTRUM
7 000-7 100	kHz	AMATEUR AMATEUR-SATELLITE 5.140 5.141 5.141A	STANDARD SPECTRUM
7 100-7 200	kНz	AMATEUR 5.141A 5.141B	STANDARD SPECTRUM
7 200-7 300	kНz	AMATEUR 5.142	STANDARD SPECTRUM
7 300-7 400	kHz	BROADCASTING 5.134 5.143 5.143A 5.143B 5.143C 5.143D	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
7 400-7 450	kHz	FIXED MOBILE except for aeronautical mobile (R)	STANDARD SPECTRUM	
7 450-8 100	kHz	FIXED MOBILE except for aeronautical mobile (R) 5 144	STANDARD SPECTRUM	
8 100-8 195	kHz	FIXED MARITIME MOBILE	STANDARD SPECTRUM	
8 195-8 815	kНz	MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111	STANDARD SPECTRUM	
8 815-8 965	kHz	AERONAUTICAL MOBILE (R)	STANDARD SPECTRUM	
8 965-9 040	kHz	AERONAUTICAL MOBILE (OR)	STANDARD SPECTRUM	
9 040-9 400	kНz	FIXED	STANDARD SPECTRUM	
9 400-9 500	kНz	BROADCASTING 5.134 5.146	STANDARD SPECTRUM	

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
9 500-9 900	kHz	BROADCASTING 5.147	STANDARD SPECTRUM	
9 900-9 995	kНz	FIXED	STANDARD SPECTRUM	
9 995-10 003	kНz	STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 5.111	STANDARD SPECTRUM	
10 003-10 005	kНz	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	STANDARD SPECTRUM	
10 005-10 100	kНz	AERONAUTICAL MOBILE (R) 5.111	STANDARD SPECTRUM	
10 100-10 150	kНz	FIXED Amateur	STANDARD SPECTRUM	
10 150-11 175	kHz	FIXED Mobile except for aeronautical mobile (R)	STANDARD SPECTRUM	
11 175-11 275	kHz	AERONAUTICAL MOBILE (OR)	STANDARD SPECTRUM	

NATIONAL	FREQUENCY	ALLOCATION	TABLE

Frequency		Service Allocations	Classification
11 275-11 400	kНz	AERONAUTICAL MOBILE (R)	STANDARD SPECTRUM
11 400-11 600	kНz	FIXED	STANDARD SPECTRUM
11 600-11 650	kНz	BROADCASTING 5.134 5.146	STANDARD SPECTRUM
11 650-12 050	kНz	BROADCASTING 5.147	STANDARD SPECTRUM
12 050-12 100	kНz	BROADCASTING 5.134 5.146	STANDARD SPECTRUM
12 100-12 230	kНz	FIXED	STANDARD SPECTRUM
12 230-13 200	kHz	MARITIME MOBILE 5.109 5.110 5.132 5.137A 5.145	STANDARD SPECTRUM
13 200-13 260	kHz	AERONAUTICAL MOBILE (OR)	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
13 260-13 360	kHz	AERONAUTICAL MOBILE (R)	STANDARD SPECTRUM
13 360-13 410	kНz	FIXED RADIO ASTRONOMY 5.149	STANDARD SPECTRUM
13 410-13 450	kHz	FIXED Mobile except aeronautical mobile (R)	STANDARD SPECTRUM
13 450-13 550	kНz	FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132A	STANDARD SPECTRUM
13 550-13 570	kHz	FIXED Mobile except aeronautical mobile (R) 5.150	STANDARD SPECTRUM
13 570-13 600	kHz	BROADCASTING 5.134 5.151	STANDARD SPECTRUM
13 600-13 800	kHz	BROADCASTING	STANDARD SPECTRUM
13 800-13 870	kHz	BROADCASTING 5.134 5.151	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
13 870-14 000	kHz	FIXED Mobile except for aeronautical mobile (R)	STANDARD SPECTRUM
14 000-14 250	kНz	AMATEUR AMATEUR-SATELLITE	STANDARD SPECTRUM
14 250-14 350	kHz	AMATEUR 5.152	STANDARD SPECTRUM
14 350-14 990	kHz	FIXED Mobile except for aeronautical mobile (R)	STANDARD SPECTRUM
14 990-15 005	kHz	STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 5.111	STANDARD SPECTRUM
15 005-15 010	kHz	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD SPECTRUM
15 010-15 100	kНz	AERONAUTICAL MOBILE (OR)	STANDARD SPECTRUM
15 100-15 600	kНz	BROADCASTING	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
15 600-15 800	kHz	BROADCASTING 5.134 5.146	STANDARD SPECTRUM	
15 800-16 100	kHz	FIXED 5.153	STANDARD SPECTRUM	
16 100-16 200	kHz	FIXED RADIOLOCATION 5.145A	STANDARD SPECTRUM	
16 200-16 360	kHz	FIXED	STANDARD SPECTRUM	
16 360-17 410	kHz	MARITIME MOBILE 5.109 5.110 5.132 5.145	STANDARD SPECTRUM	
17 410-17 480	kHz	FIXED	STANDARD SPECTRUM	

17 480-17 550

17 550-17 900

kHz

kHz

**BROADCASTING 5.134** 

BROADCASTING

5.146

STANDARD SPECTRUM

STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE			
Frequency		Service Allocations	Classification
17 900-17 970	kHz	AERONAUTICAL MOBILE (R)	STANDARD SPECTRUM
17 970-18 030	kНz	AERONAUTICAL MOBILE (OR)	STANDARD SPECTRUM
18 030-18 052	kНz	FIXED	STANDARD SPECTRUM
18 052-18 068	kНz	FIXED Space research	STANDARD SPECTRUM
18 068-18 168	kНz	AMATEUR AMATEUR-SATELLITE 5.154	STANDARD SPECTRUM
18 168-18 780	kНz	FIXED Mobile except for aeronautical mobile	STANDARD SPECTRUM
18 780-18 900	kHz	MARITIME MOBILE	STANDARD SPECTRUM
18 900-19 020	kHz	BROADCASTING 5.134 5.146	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE			
Frequency		Service Allocations	Classification
19 020-19 680	kHz	FIXED	STANDARD SPECTRUM
19 680-19 800	kHz	MARITIME MOBILE 5.132	STANDARD SPECTRUM
19 800-19 990	kHz	FIXED	STANDARD SPECTRUM
19 990-19 995	kHz	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD SPECTRUM
		5.111	
19 995-20 010	kHz	STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 5.111	STANDARD SPECTRUM
20 010-21 000	kНz	FIXED Mobile	STANDARD SPECTRUM
21 000-21 450	kHz	AMATEUR AMATEUR-SATELLITE	STANDARD SPECTRUM
21 450-21 850	kHz	BROADCASTING	STANDARD SPECTRUM

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Frequency		Service Allocations	Classification
21 850-21 870	kНz	FIXED 5.155A 5.155	STANDARD SPECTRUM
21 870-21 924	kНz	FIXED 5.155B	STANDARD SPECTRUM
21 924-22 000	kHz	AERONAUTICAL MOBILE (R)	STANDARD SPECTRUM
22 000-22 855	kHz	MARITIME MOBILE 5.132 5.156	STANDARD SPECTRUM
22 855-23 000	kНz	FIXED 5.156	STANDARD SPECTRUM
23 000-23 200	kHz	FIXED Mobile except for aeronautical mobile (R) 5.156	STANDARD SPECTRUM
23 200-23 350	kНz	FIXED 5.156A AERONAUTICAL MOBILE (OR)	STANDARD SPECTRUM
23 350-24 000	kHz	FIXED Mobile except aeronautical mobile 5.157	STANDARD SPECTRUM

NATIONAL	FREOUENC	Ύ ΑΠΟΓΑΤ	ION TABLE

Frequency		Service Allocations	Classification
24 000-24 450	kНz	FIXED LAND MOBILE	STANDARD SPECTRUM
24 450-24 650	kНz	FIXED LAND MOBILE RADIOLOCATION 5.132A	STANDARD SPECTRUM
24 650-24 890	kHz	FIXED LAND MOBILE	STANDARD SPECTRUM
24 890-24 990	kНz	AMATEUR AMATEUR-SATELLITE	STANDARD SPECTRUM
24 990-25 005	kHz	STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	STANDARD SPECTRUM
25 005-25 010	kНz	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD SPECTRUM
25 010-25 070	kHz	FIXED MOBILE except for aeronautical mobile	STANDARD SPECTRUM
25 070-25 210	kHz	MARITIME MOBILE	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
25 210-25 550	kHz	FIXED MOBILE except for aeronautical mobile	STANDARD SPECTRUM
25 550-25 670	kНz	RADIO ASTRONOMY 5.149	STANDARD SPECTRUM
25 670-26 100	kHz	BROADCASTING	STANDARD SPECTRUM
26 100-26 175	kHz	MARITIME MOBILE 5.132	STANDARD SPECTRUM
26 175-26 200	kНz	FIXED MOBILE except for aeronautical mobile	STANDARD SPECTRUM
26 200-26 420	kНz	FIXED MOBILE except for aeronautical mobile RADIOLOCATION 5.132A	STANDARD SPECTRUM
26 420-27 500	kHz	FIXED MOBILE except for aeronautical mobile 5.150	STANDARD SPECTRUM
27.5-28	MHz	METEOROLOGICAL AIDS FIXED MOBILE	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
28-29.7	MHz	AMATEUR AMATEUR-SATELLITE	STANDARD SPECTRUM	
29.7-30.005	MHz	FIXED MOBILE	STANDARD SPECTRUM	
30.005-30.01	MHz	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	STANDARD SPECTRUM	
30.01-37.5	MHz	FIXED MOBILE	STANDARD SPECTRUM	
37.5-38.25	MHz	FIXED MOBILE Radio astronomy 5.149	STANDARD SPECTRUM	
38.25-39.986	MHz	FIXED MOBILE	STANDARD SPECTRUM	
39.986-40.00	MHz	FIXED MOBILE Space research	STANDARD SPECTRUM	
40.00-40.02	MHz	FIXED MOBILE Earth exploration-satellite (active) 5.195A Space Research	STANDARD SPECTRUM	

Frequency		Service Allocations	Classification
40.02-40.98		FIXED MOBILE Earth exploration-satellite (active) 5.195A	STANDARD SPECTRUM
40.98-41.015	MHz	FIXED MOBILE Earth exploration-satellite (active) Spaceresearch 5.160 5.161	STANDARD SPECTRUM
41.015-42	MHz	FIXED MOBILE Earth exploration-satellite (active) 5.160 5.161 5.161A	STANDARD SPECTRUM
42-42.5	MHz	FIXED MOBILE Earth exploration-satellite (active)5.161	STANDARD SPECTRUM
42.5-44	MHz	FIXED MOBILE Earth exploration-satellite (active) 5.160 5.161 5.161A	STANDARD SPECTRUM
44-47	MHz	FIXED MOBILE Earth exploration-satellite (active) 5.162 5.162A	STANDARD SPECTRUM
47-50	MHz	FIXED MOBILE Earth exploration-satellite (active)	STANDARD SPECTRUM
50-54	MHz	AMATEUR 5.162A 5.167 5.167A 5.168 5.170	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE			
Frequency		Service Allocations	Classification
54-68	MHz	BROADCASTING Fixed Mobile	STANDARD SPECTRUM
68-72	MHz	BROADCASTING Fixed Mobile 5.173	STANDARD SPECTRUM
72-73	MHz	FIXED MOBILE	STANDARD SPECTRUM
73-74.6	MHz	RADIO ASTRONOMY 5.178	STANDARD SPECTRUM
74.6-74.8	MHz	FIXED MOBILE	STANDARD SPECTRUM
74.8-75.2	MHz	AERONAUTICAL RADIONAVIGATION 5.180 5.181	STANDARD SPECTRUM
75.2-75.4	MHz	FIXED MOBILE 5.179	STANDARD SPECTRUM
75.4-76	MHz	FIXED MOBILE	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
76-88	MHz	BROADCASTING Fixed Mobile	STANDARD SPECTRUM	
88-100	MHz	BROADCASTING	STANDARD SPECTRUM	
100-108	MHz	BROADCASTING 5.192 5.194	STANDARD SPECTRUM	
108-117.975	MHz	AERONAUTICAL RADIONAVIGATION 5.197 5.197A	STANDARD SPECTRUM	
117.975-137	MHz	AERONAUTICAL MOBILE (R) AERONAUTICAL MOBILE-SATELLITE (R) 5.198A 5.198B 5.111 5.200 5.201 5.202	STANDARD SPECTRUM	
137-137.025	MHz	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except for aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	STANDARD SPECTRUM	
137.025-137.175	MHz	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 Mobile except for aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	STANDARD SPECTRUM	
137.175-137.825	MHz	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Fixed	STANDARD SPECTRUM	

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
		Mobile except for aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208		
137.825-138	MHz	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 Mobile except for aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	STANDARD SPECTRUM	
138-143.6	MHz	FIXED MOBILE RADIOLOCATION Space research (space-to-Earth)	STANDARD SPECTRUM	
143.6-143.65	MHz	FIXED MOBILE RADIOLOCATION SPACE RESEARCH (space-to-Earth	STANDARD SPECTRUM	
143.65-144	MHz	FIXED MOBILE RADIOLOCATION Space research (space-to-Earth)	STANDARD SPECTRUM	
144-146	MHz	AMATEUR AMATEUR-SATELLITE 5.216	STANDARD SPECTRUM	
146-148	MHz	AMATEUR 5.217	STANDARD SPECTRUM	
148-149.9	MHz	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.209	STANDARD SPECTRUM	
		5.218 5.219 5.221		

Frequency		Service Allocations	Classification
149.9-150.05	MHz	MOBILE-SATELLITE (Earth-to-space) 5.209 5.220	STANDARD SPECTRUM
150.05-154	MHz	FIXED MOBILE	STANDARD SPECTRUM
154-156.4875	MHz	FIXED MOBILE 5.226	STANDARD SPECTRUM
156.4875-156.5625	MHz	MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227	STANDARD SPECTRUM
156.5625-156.7625	MHz	FIXED MOBILE 5.226	STANDARD SPECTRUM
156.7625-156.7875	MHz	MARITIME MOBILE MOBILE-SATELLITE (Earth-to-space) 5.111 5.226 5.228	STANDARD SPECTRUM
156.7875-156.8125	MHz	MARITIME MOBILE (distress and calling) 5.111 5.226	STANDARD SPECTRUM
156.8125-156.8375	MHz	MARITIME MOBILE MOBILE-SATELLITE (Earth-to-space) 5.111 5.226 5.228	STANDARD SPECTRUM

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Frequency		Service Allocations	Classification
156.8375-161.9375	MHz	FIXED	STANDARD SPECTRUM
		MOBILE	
		5.226	
161.9375-161.9625	MHz	FIXED MOBILE	STANDARD SPECTRUM
		Maritime mobile-satellite (Earth-to-space) 5.228AA	
		5.226	
161.9625-161.9875	MHz	AERONAUTICAL MOBILE (OR)	STANDARD SPECTRUM
		MARITIME MOBILE	
		MOBILE-SATELLITE (Earth-to-space)	
		5 2280 5 2280	
161 0975 162 0125	N411-		
101.9875-102.0125	WINZ	MOBILE	STANDARD SPECTRUM
		Maritime mobile-satellite (Earth-to-space) 5.228AA	
		5.226	
162.0125-162.0375	MHz	AERONAUTICAL MOBILE (OR)	STANDARD SPECTRUM
		MARITIME MOBILE	
		MOBILE-SATELLITE (Earth-to-space)	
		5 2280 5 2280	
162 0275 174	N/11-		
162.0375-174	IVIHZ	MOBILE	STANDARD SPECTRUM
		5.226 5.230 5.231	
174-216	MHz	BROADCASTING	STANDARD SPECTRUM
		Fixed	
		MODIE	

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
216-220	MHz	FIXED MARITIME MOBILE Radiolocation 5.241 5.242	STANDARD SPECTRUM	
220-225	MHz	AMATEUR FIXED MOBILE Radiolocation 5.241	STANDARD SPECTRUM	
225-235	MHz	FIXED MOBILE	STANDARD SPECTRUM	
235-267	MHz	FIXED MOBILE 5.111 5.252 5.254 5.256 5.256A	STANDARD SPECTRUM	
267-272	MHz	FIXED MOBILE Space operation (space-to-Earth) 5.254 5.257	STANDARD SPECTRUM	
272-273	MHz	SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	STANDARD SPECTRUM	
273-312	MHz	FIXED MOBILE 5.254	STANDARD SPECTRUM	
312-315	MHz	FIXED MOBILE Mobile-satellite (Earth-to-space) 5.254 5.255	STANDARD SPECTRUM	

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
315-322	MHz	FIXED MOBILE 5.254	STANDARD SPECTRUM	
322-328.6	MHz	FIXED MOBILE RADIO ASTRONOMY 5.149	STANDARD SPECTRUM	
328.6-335.4	MHz	AERONAUTICAL RADIONAVIGATION 5.258 5.259	STANDARD SPECTRUM	
335.4-387	MHz	FIXED MOBILE 5.254	STANDARD SPECTRUM	
387-390	MHz	FIXED MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255	STANDARD SPECTRUM	
390-399.9	MHz	FIXED MOBILE 5.254	STANDARD SPECTRUM	
399.9-400.05	MHz	MOBILE-SATELLITE (Earth-to-space) 5.209 5.220	STANDARD SPECTRUM	
400.05-400.15	MHz	STANDARD FREQUENCY AND TIME SIGNAL SATELLITE (400.1 MHz) 5.261 5.262	STANDARD SPECTRUM	

Frequency		Service Allocations	Classification
400.15-401	MHz	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) 5.263 Space operation (space-to-Earth) 5.262 5.264	STANDARD SPECTRUM
401-402	MHz	METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except for aeronautical mobile	STANDARD SPECTRUM
402-403	MHz	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except for aeronautical mobile	STANDARD SPECTRUM
403-406	MHz	METEOROLOGICAL AIDS Fixed Mobile except for aeronautical mobile 5.265	STANDARD SPECTRUM
406-406.1	MHz	MOBILE-SATELLITE (Earth-to-space) 5.265 5.266 5.267	STANDARD SPECTRUM
406.1-410	MHz	FIXED MOBILE except for aeronautical mobile RADIO ASTRONOMY 5.149 5.265	STANDARD SPECTRUM
410-420	MHz	FIXED MOBILE except for aeronautical mobile SPACE RESEARCH (space-to-space) 5.268	STANDARD SPECTRUM
420-430	MHz	FIXED MOBILE except for aeronautical mobile Radiolocation 5.269 5.270 5.271	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
430-432	MHz	RADIOLOCATION Amateur	STANDARD SPECTRUM
		5.271 5.276 5.278 5.279	
432-438	MHz	RADIOLOCATION Amateur Earth exploration-satellite (active) 5.279A 5.271 5.276 5.278 5.279 5.281 5.282	STANDARD SPECTRUM
438-440	MHz	RADIOLOCATION Amateur 5.271 5.276 5.278 5.279	STANDARD SPECTRUM
440-450	MHz	FIXED MOBILE except for aeronautical mobile Radiolocation 5.269 5.270 5.271 5.284 5.285 5.286	STANDARD SPECTRUM
450-455	MHz	FIXED MOBILE 5.286AA 5.209 5.271 5.286 5.286A 5.286B 5.286C 5.286D 5.286E	STANDARD SPECTRUM
455-456	MHz	FIXED MOBILE 5.286AA MOBILE-SATELLITE (Earth-to-space) 5.209 5.286A 5.286B 5.286C	STANDARD SPECTRUM
456-459	MHz	FIXED MOBILE 5.286AA 5.271 5.287 5.288	STANDARD SPECTRUM
459-460	MHz	FIXED MOBILE 5.286AA MOBILE-SATELLITE(Earth-to-space) 5.209 5.286A 5.286B 5.286C	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
460-470	MHz	FIXED MOBILE 5.286AA Meteorological-satellite (space-to-Earth) 5.287 5.288 5.289 5.290	STANDARD SPECTRUM
470-512	MHz	BROADCASTING Fixed Mobile 5.292 5.293 5.295	PREMIUM SPECTRUM
512-608	MHz	BROADCASTING 5.295 5.297	PREMIUM SPECTRUM
608-614	MHz	RADIO ASTRONOMY Mobile-satellite except aeronautical mobile-satellite (Earth-to-space)	PREMIUM SPECTRUM
614-698	MHz	BROADCASTING Fixed Mobile 5.293 5.308 5.308A 5.309	PREMIUM SPECTRUM
698-806	MHz	MOBILE 5.317A BROADCASTING Fixed 5.293 5.309	PREMIUM SPECTRUM
806-890	MHz	FIXED MOBILE 5.317A 5.317A BROADCASTING 5.317 5.318	PREMIUM SPECTRUM
890-902	MHz	FIXED MOBILE except aeronautical mobile 5.312B 5.317A Radiolocation 5.318 5.325	PREMIUM AND STANDARD SPECTRUM

Frequency		Service Allocations	Classification
902-928	MHz	FIXED Amateur Mobile except for aeronautical mobile 5.312B 5.325A Radiolocation 5.325	PREMIUM AND STANDARD SPECTRUM
928-942	MHz	FIXED	STANDARD SPECTRUM
		MOBILE except for aeronautical mobile	
		5.312B 5.317A	
		Radiolocation	
		5.325	
942-960	MHz	FIXED MOBILE 5.312B 5.317A	STANDARD SPECTRUM
960-1 164	MHz	AERONAUTICAL MOBILE (R) 5.327A	STANDARD SPECTRUM
		AERONAUTICAL RADIONAVIGATION 5.328	
		5.328AA	
1 164-1 215	MHz	AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to- space) 5.328B 5.328A	STANDARD SPECTRUM
1 215-1 240	MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to- space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332	STANDARD SPECTRUM
1 240-1 300	MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to- space) 5.328B 5.329 5.329A SPACE RESEARCH (active) Amateur 5.282 5.330 5.331 5.332 5.335 5.335A	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
1 300-1 350	MHz	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION-SATELLITE (Earth-to-space) 5.149 5.337A	STANDARD SPECTRUM	
1 350-1 400	MHz	RADIOLOCATION 5.338A 5.149 5.334 5.339	STANDARD SPECTRUM	
1 400-1 427	MHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	STANDARD SPECTRUM	
1 427-1 429	MHz	SPACE OPERATION (Earth-to-space) FIXED MOBILE except for aeronautical mobile 5.341A 5.341B 5.341C 5.338A 5.341	PREMIUM/ STANDARD SPECTRUM	
1 429-1 452	MHz	FIXED MOBILE 5.341B 5.341C 5.343 5.338A 5.341	PREMIUM/ STANDARD SPECTRUM	
1 452-1 492	MHz	FIXED MOBILE 5.341B 5.343 5.346A BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5344 5345	PREMIUM/ STANDARD SPECTRUM	
1 492-1 518	MHz	FIXED MOBILE 5.341B 5.343 5.341 5.344	PREMIUM/ STANDARD SPECTRUM	
Frequency		Service Allocations	Classification	
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1 518-1 525	MHz	FIXED MOBILE 5.343 MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A 5.341 5.344	STANDARD SPECTRUM	
1 525-1 530	MHz	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A Earth exploration-satellite Fixed Mobile 5.343 5.341 5.351 5.354	STANDARD SPECTRUM	
1 530-1 535	MHz	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A Earth exploration-satellite Fixed Mobile 5.343 5.341 5.351 5.354	STANDARD SPECTRUM	
1 535-1 559	MHz	MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.341 5.351 5.353A 5.354 5.355 5.356 5.357 5.357A 5.359 5.362A	STANDARD SPECTRUM	
1 559-1 610	MHz	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to- space) 5.208B 5.328B 5.329A 5.341	STANDARD SPECTRUM	
1 610-1 610.6	MHz	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	STANDARD SPECTRUM	
1 610.6-1 613.8	MHz	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION RADIODETERMINATION SATELLITE(Earth-to-space)	STANDARD SPECTRUM	

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
		5.149 5.341 5.364 5.366 5.367 5.368 5.370 5.372		
1 613.8-1 621.35	MHz	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION RADIODETERMINATION SATELLITE (Earth-to-space) Mobile-satellite (space-to-Earth) 5.208B 5.341 5.364 5.365 5.366 5.367 5.368 5.370 5.372	STANDARD SPECTRUM	
1 621.35-1 626.5	MHz	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION RADIODETERMINATION SATELLITE (Earth-to-space) Mobile-satellite (space-to-Earth) 5.208B 5.341 5.364 5.365 5.366 5.367 5.368 5.370 5.372	STANDARD SPECTRUM	
1 626.5-1 660	MHz	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.341 5.351 5.353A 5.354 5.355 5.357A 5.359 5.362A 5.374 5.375 5.376	STANDARD SPECTRUM	
1 660-1 660.5	MHz	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.362A 5.376A	STANDARD SPECTRUM	
1 660.5-1 668	MHz	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except for aeronautical mobile 5.149 5.341 5.379 5.379A	STANDARD SPECTRUM	
1 668-1 668.4	MHz	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except for aeronautical mobile 5.149 5.341 5.379 5.379A	STANDARD SPECTRUM	

Frequency		Service Allocations	Classification
1 668.4-1 670	MHz	METEOROLOGICAL AIDS FIXED MOBILE except for aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY 5.149 5.341 5.379D 5.379E	STANDARD SPECTRUM
1 670-1 675	MHz	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.341 5.379D 5.379E 5.380A	STANDARD SPECTRUM
1 675-1 690	MHz	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except for aeronautical mobile 5.341	STANDARD SPECTRUM
1 690-1 700	MHz	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth)	STANDARD SPECTRUM
1 700-1 710	MHz	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except for aeronautical mobile 5.289 5.341	STANDARD SPECTRUM
1 710-1 930	MHz	FIXED MOBILE 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.386 5.387 5.388	PREMIUM SPECTRUM
1 930-1 970	MHz	FIXED MOBILE 5.388A 5.388B Mobile-satellite (Earth-to-space) 5.388	PREMIUM SPECTRUM

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Frequency		Service Allocations	Classification
1 970-1 980	MHz	FIXED MOBILE 5.388A	PREMIUM SPECTRUM
1 980-2 010	MHz	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B 5.389F	PREMIUM SPECTRUM
2 010-2 025	MHz	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.388 5.389C 5.389E	PREMIUM SPECTRUM
2 025-2 110	MHz	SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to- space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to-space) (space-to-space)	STANDARD SPECTRUM
2 110-2 120	MHz	FIXED MOBILE 5.388A SPACE RESEARCH (deep space) (Earth-to-space) 5.388	PREMIUM SPECTRUM
2 120-2 160	MHz	FIXED MOBILE 5.388A Mobile-satellite (space-to-Earth) 5.388	PREMIUM SPECTRUM
2 160-2 170	MHz	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.388 5.389C 5.389E	PREMIUM SPECTRUM

Frequency		Service Allocations	Classification
2 170-2 200	MHz	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A 5.389F	STANDARD SPECTRUM
2 200-2 290	MHz	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	STANDARD SPECTRUM
2 290-2 300	MHz	FIXED MOBILE except for aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	STANDARD SPECTRUM
2 300-2 450	MHz	FIXED MOBILE 5.384A RADIOLOCATION Amateur 5.150 5.282 5.393 5.394 5.396	PREMIUM/ STANDARD SPECTRUM
2 450-2 483.5	MHz	FIXED MOBILE RADIOLOCATION 5.150	STANDARD SPECTRUM
2 483.5-2 500	MHz	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIOLOCATION RADIODETERMINATION-SATELLITE (space-to-Earth) 5.398 5.150 5.368 5.372A 5.402	STANDARD SPECTRUM
2 500-2 520	MHz	FIXED 5.410 FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A 5.409A	PREMIUM AND STANDARD SPECTRUM

Frequency		Service Allocations	Classification
2 520-2 655	MHz	FIXED 5.410 FIXED-SATELLITE(space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416	PREMIUM AND STANDARD SPECTRUM
2 655-2 670	MHz	5.339 5.418B 5.418C FIXED 5.410 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.415 MOBILE except for aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.208B	PREMIUM AND STANDARD SPECTRUM
2 670-2 690	MHz	FIXED 5.410 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.208B 5.415 MOBILE except for aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149	PREMIUM AND STANDARD SPECTRUM
2 690-2 700	MHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.422	STANDARD SPECTRUM
2 700-2 900	MHz	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424	STANDARD SPECTRUM
2 900-3 100	MHz	RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
3 100-3 300	MHz	RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.149 5.428	STANDARD SPECTRUM	
3 300-3 400	MHz	MOBILE except aeronautical mobile 5.429G RADIOLOCATION Amateur Fixed 5.149 5.429C 5.429D	STANDARD SPECTRUM	
3 400-3 500	MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except for aeronautical mobile 5.431A 5.431B Amateur Radiolocation 5.433 5.282	PREMIUM AND STANDARD SPECTRUM	
3 500-3 600	MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.431B Radiolocation 5.433	PREMIUM AND STANDARD SPECTRUM	
3 600-3 700	MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.434 Radiolocation 5.433	PREMIUM AND STANDARD SPECTRUM	
3 700-4 200	MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except for aeronautical mobile 5.435B	PREMIUM AND STANDARDS SPECTRUM	
4 200-4 400	MHz	AERONAUTICAL MOBILE (R) 5.436 AERONAUTICAL RADIONAVIGATION 5.438 5.437 5.439 5.440	STANDARD SPECTRUM	

NATIONAL FREQUENCY ALLOCATION TABLE			
Frequency		Service Allocations	Classification
4 400-4 500	MHz	FIXED MOBILE 5.440A	STANDARD SPECTRUM
4 500-4 800	MHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE 5.440A	STANDARD SPECTRUM
4 800-4 990	MHz	FIXED MOBILE 5.440A 5.441A 5.441B 5.442 Radio astronomy 5.149 5.339 5.443	STANDARD SPECTRUM
4 990-5 000	MHz	FIXED MOBILE except for aeronautical mobile RADIO ASTRONOMY Space research (passive) 5.149	STANDARD SPECTRUM
5 000-5010	MHz	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-space)	STANDARD SPECTRUM
5 010-5 030	MHz	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to- space) 5.328B 5.443B	STANDARD SPECTRUM
5 030-5 091	MHz	AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION 5.444	STANDARD SPECTRUM
5 091-5 150	MHz	FIXED-SATELLITE (Earth-to-space) 5.444A AERONAUTICAL MOBILE 5.444B AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION 5.444	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
5 150-5 250	MHz	FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B AERONAUTICAL RADIONAVIGATION 5.446 5.446C 5.447 5.447B 5.447C	STANDARD SPECTRUM
5 250-5 255	MHz	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH 5.447D 5.447E 5.448 5.448A	STANDARD SPECTRUM
5 255-5 350	MHz	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH (active) 5.447E 5.448 5.448A	STANDARD SPECTRUM
5 350-5 460	MHz	EARTH EXPLORATION-SATELLITE (active) 5.448B SPACE RESEARCH (active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D	STANDARD SPECTRUM
5 460-5 470	MHz	RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION 5.448D SPACE RESEARCH (active) 5.448B	STANDARD SPECTRUM
5 470-5 570	MHz	EARTH EXPLORATION-SATELLITE (active) MOBILE except for aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION SPACE RESEARCH (active) 5.448B 5.450 5.451	STANDARD SPECTRUM
5 570-5 650	MHz	MARITIME RADIONAVIGATION MOBILE except for aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B 5.450 5.451 5.452	STANDARD SPECTRUM
5 650-5 725	MHz	RADIOLOCATION MOBILE except for aeronautical mobile 5.446A 5.450A Amateur Space research (deep space) 5.282 5.451 5.453 5.454 5.455	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
5 725-5 830	MHz	RADIOLOCATION Amateur	STANDARD SPECTRUM	
5 830-5 850	MHz	RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.453 5.455	STANDARD SPECTRUM	
5 850-5 925	MHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Amateur Radiolocation 5.150	STANDARD SPECTRUM	
5 925-6 700	MHz	FIXED 5.457 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B MOBILE 5.457C 5.457D 5.457E 5.457F 5.149 5.440 5.458	STANDARD SPECTRUM	
6 700-7 075	MHz	FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE 5.457D 5.457E 5.457F 5.458 5.458A 5.458B	STANDARD SPECTRUM	
7 075-7 145	MHz	FIXED MOBILE 5.457E 5.457F 5.458 5.459	STANDARD SPECTRUM	
7 145-7 190	MHz	FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) 5.458 5.459	STANDARD SPECTRUM	
7 190-7 235	MHz	EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A 5.460B FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460	STANDARD SPECTRUM	

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
		5.458 5.459		
7 235-7 250	MHz	EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A FIXED MOBILE 5.458	STANDARD SPECTRUM	
7 250-7 300	MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 5.461	STANDARD SPECTRUM	
7 300-7 375	MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except for aeronautical mobile 5.461	STANDARD SPECTRUM	
7 375-7 450	MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except for aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-earth) 5.461AA 5.461AB 5.461AC	STANDARD SPECTRUM	
7 450-7 550	MHz	FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL- SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB 5.461A 5.461AC	STANDARD SPECTRUM	
7 550-7 750	MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except for aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-earth) 5.461AA 5.461AB	STANDARD SPECTRUM	
7 750-7 900	MHz	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B MOBILE except for aeronautical mobile	STANDARD SPECTRUM	

Frequency		Service Allocations	Classification
7 900-8 025	MHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB 5.461AC	STANDARD SPECTRUM
8 025-8 175	MHz	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	STANDARD SPECTRUM
8 175-8 215	MHz	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	STANDARD SPECTRUM
8 215-8 400	MHz	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	STANDARD SPECTRUM
8 400-8 500	MHz	FIXED MOBILE except for aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.465 5.466	STANDARD SPECTRUM
8 500-8 550	MHz	RADIOLOCATION 5.468 5.469	STANDARD SPECTRUM
8 550-8 650	MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469 5.469A	STANDARD SPECTRUM
8 650-8 750	MHz	RADIOLOCATION 5.468 5.469	STANDARD SPECTRUM

NATIONAL EPEOLENCY ALLOCAT	ION TABLE
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Frequency		Service Allocations	Classification
8 750-8 850	MHz	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 5.471	STANDARD SPECTRUM
8 850-9 000	MHz	RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473	STANDARD SPECTRUM
9 000-9 200	MHz	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 5.471 5.473A	STANDARD SPECTRUM
9 200-9 300	MHz	EARTH-EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474 5.474D	STANDARD SPECTRUM
9 300-9 500	MHz	RADIONAVIGATION EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.427 5.474 5.475 5.475A 5.475B 5.476A	STANDARD SPECTRUM
9 500-9 800	MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	STANDARD SPECTRUM
9 800-9 900	MHz	RADIOLOCATION Earth exploration-satellite (active) Fixed Space research (active) 5.477 5.478 5.478A 5.478B	STANDARD SPECTRUM
9 900-10 000	MHz	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Fixed 5.474D 5.477 5.478 5.479	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
10-10.4	GHz	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Amateur	STANDARD SPECTRUM
10.4-10.45	GHz	S.474D S.479 S.480 S.480A   RADIOLOCATION   Amateur   5.480 S.480A	STANDARD SPECTRUM
10.45-10.5	GHz	RADIOLOCATION Amateur Amateur-satellite 5.480A 5.481	STANDARD SPECTRUM
10.5-10.55	GHz	FIXED MOBILE RADIOLOCATION	STANDARD SPECTRUM
10.55-10.6	GHz	FIXED MOBILE except for aeronautical mobile Radiolocation	STANDARD SPECTRUM
10.6-10.68	GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except for aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482 5.482A	STANDARD SPECTRUM
10.68-10.7	GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.483	STANDARD SPECTRUM
10.7-10.95	GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE except for aeronautical mobile	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
10.95-11.2	GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B MOBILE except for aeronautical mobile	STANDARD SPECTRUM
11.2-11.45	GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE except for aeronautical mobile	STANDARD SPECTRUM
11.45-11.7	GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B MOBILE except for aeronautical mobile	STANDARD SPECTRUM
11.7-12.1	GHz	FIXED 5.486 FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.488 Mobile except for aeronautical mobile 5.485	STANDARD SPECTRUM
12.1-12.2	GHz	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.488 5.485 5.489	STANDARD SPECTRUM
12.2-12.7	GHz	FIXED MOBILE except for aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492 5.487A 5.488 5.490	STANDARD SPECTRUM
12.7-12.75	GHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE except aeronautical mobile	STANDARD SPECTRUM
12.75-13.25	GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.441 5.496A MOBILE Space research (deep space) (space-to-Earth)	STANDARD SPECTRUM

ΝΑΤΙΟΝΑΙ	EREQUENCY	ALLOCATION TABLE	
NATIONAL	FREQUENCE	ALLOCATION TABLE	

Frequency		Service Allocations	Classification
13.25-13.4	GHz	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A 5.499	STANDARD SPECTRUM
13.4-13.65	GHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.499C 5.499D Standard frequency and time signal-satellite (Earth-to-space) 5.499 5.500 5.501 5.501B	STANDARD SPECTRUM
13.65-13.75	GHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A Standard frequency and time signal-satellite (Earth-to-space) 5.499 5.500 5.501 5.501B	
13.75-14	GHz	FIXED-SATELLITE (Earth-to-space) 5.484A RADIOLOCATION Earth exploration-satellite Standard frequency and time signal-satellite (Earth-to-space) Space research 5.499 5.500 5.501 5.502 5.503	STANDARD SPECTRUM
14-14.25	GHz	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.504C 5.506A Space research 5.504A 5.505	STANDARD SPECTRUM
14.25-14.3	GHz	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.508A Space research 5.504A 5.505 5.508	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
14.3-14.4	GHz	FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A 5.484B 5.506 5.506B Mobile-satellite (Earth-to-space) 5.506A Radionavigation-satellite 5.504A	STANDARD SPECTRUM
14.4-14.47	GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B MOBILE except for aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Space research (space-to-Earth) 5.504A	STANDARD SPECTRUM
14.47-14.5	GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B MOBILE except for aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Radio astronomy 5.149 5.504A	STANDARD SPECTRUM
14.5-14.75	GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.509B 5.509C 5.509D 5.509E 5.509F 5.510 MOBILE Space research 5.509G	STANDARD SPECTRUM
14.75-14.8	GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.510 MOBILE Space research 5.509G	STANDARD SPECTRUM
14.8-15.35	GHz	FIXED MOBILE SPACE RESEARCH 5.510A 5.339	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE			
Frequency		Service Allocations	Classification
15.35-15.4	GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.511	STANDARD SPECTRUM
15.4-15.41	GHz	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	STANDARD SPECTRUM
15.41-15.43	GHz	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	STANDARD SPECTRUM
15.43-15.63	GHz	FIXED-SATELLITE (Earth-to-space) 5.511A RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511C	STANDARD SPECTRUM
15.63-15.7	GHz	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	STANDARD SPECTRUM
15.7-16.6	GHz	RADIOLOCATION 5.512 5.513	STANDARD SPECTRUM
16.6-17.1	GHz	RADIOLOCATION Space research (deep space) (Earth-to-space) 5.512 5.513	STANDARD SPECTRUM
17.1-17.2	GHz	RADIOLOCATION 5.512 5.513	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
17.2-17.3	GHz	EARTH EXPLORATION-SATELLITE (active)	STANDARD SPECTRUM
		RADIOLOCATION	
		SPACE RESEARCH (active)	
		5.512 5.513 5.513A	
17.3-17.7	GHz	FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.484A 5.515A 5.515B 5.517	STANDARD SPECTRUM
		BROADCASTING-SATELLITE	
		Radiolocation5.514 5.515	
17.7-17.8	GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.517 5.517A 5.517B (Earth-to-space) 5.516	STANDARD SPECTRUM
		BROADCASTING-SATELLITE	
		Mobile 5.515	
17.8-18.1	GHz	FIXED	STANDARD SPECTRUM
		FIXED-SATELLITE (space-to-Earth) 5.484A 5.517A 5.517B (Earth-to-space) 5.516	
		MOBILE 5.519	
18.1-18.4	GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A 5.517B (Earth-to-space) 5.520	STANDARD SPECTRUM
		INTER-SATELLITE 5.521A	
		MOBILE 5.519 5.521	
18.4-18.6	GHz	FIXED	STANDARD SPECTRUM
		FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A 5.517B	
		INTER-SATELLITE 5.521A	
		MOBILE	
18.6-18.8	GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.522B MOBILE except for aeronautical mobile SPACE RESEARCH (passive)	STANDARD SPECTRUM
		5.522A	
18.8-19.3	GHz	FIXED	STANDARD SPECTRUM
		FIXED-SATELLITE (space-to-Earth) 5.516B 5.517A 5.517B 5.523A	
		INTER-SATELLITE 5.521A	
		MOBILE	

Frequency		Service Allocations	Classification
19.3-19.7	GHz	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.517A 5.523B 5.523C 5.523D 5.523E	STANDARD SPECTRUM
		INTER-SATELLITE 5.521A 5.523DA MOBILE	
19.7-20.1	GHz	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.517B 5.527A	STANDARD SPECTRUM
		INTER-SATELLITE 5.521A	
		MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528 5.529	
20.1-20.2	GHz	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.517B 5.527A	STANDARD SPECTRUM
		INTER-SATELLITE 5.521A	
		MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528	
20.2-21.2	GHz	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) 5.524	STANDARD SPECTRUM
21.2-21.4	GHz	FIXED-SATELLITE (space-to-Earth)	STANDARD SPECTRUM
		MOBILE-SATELLITE (space-to-Earth)	
		5.524 5.529A	
21.4-22	GHz	FIXED MOBILE	STANDARD SPECTRUM
22-22.21	GHz	FIXED	STANDARD SPECTRUM
		MOBILE except for aeronautical mobile 5.149	
22.21-22.5	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		FIXED MOBILE except for aeronautical mobile	
		RADIO ASTRONOMY SPACE RESEARCH (passive)	

NATIONAL FREQUENCY ALLOCATION TABLE			
Frequency		Service Allocations	Classification
		5.149 5.532	
22.5-22.55	GHz	FIXED	STANDARD SPECTRUM
		MOBILE	
22.55-23.15	GHz	FIXED	
		INTER-SATELLITE 5.338A	
		MOBILE	
		SPACE RESEARCH (Earth-to-space) 5.532A	
		5.149	
23.15-23.55	GHz	FIXED	STANDARD SPECTRUM
		INTER-SATELLITE 5.338A	
		MOBILE	
23.55-23.6	GHz	FIXED	STANDARD SPECTRUM
		MOBILE	
23.6-24	GH4		
23.0-24	0112	RADIO ASTRONOMY	STANDARD SI LETROW
		SPACE RESEARCH (passive)	
		5.340	
24-24.05	GHz	AMATEUR	STANDARD SPECTRUM
		5.150	
24.05-24.25	GHz	RADIOLOCATION	STANDARD SPECTRUM
		Amateur	
		5.150	

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
24.25-24.45	GHz	RADIONAVIGATION	STANDARD SPECTRUM	
24.45-24.65	GHz	INTER-SATELLITE RADIONAVIGATION 5.533	STANDARD SPECTRUM	
24.65-24.75	GHz	INTER-SATELLITE RADIOLOCATION-SATELITE (Earth-to-space)	STANDARD SPECTRUM	
24.75-25.25	GHz	FIXED-SATELLITE (Earth-to-space) 5.535	STANDARD SPECTRUM	
25.25-25.5	GHz	FIXED INTER-SATELLITE 5.536 MOBILE Standard frequency and time signal-satellite (Earth-to-space)	STANDARD SPECTRUM	
25.5-27	GHz	EARTH EXPLORATION-SATELLITE (space-to-Earth) 5.536B FIXED INTER-SATELLITE 5.536 MOBILE SPACE RESEARCH (space-to-Earth) 5.536C Standard frequency and time signal-satellite (Earth-to-space) 5.536A	STANDARD SPECTRUM	
27-27.5	GHz	FIXED FIXED-SATELLITE (Earth-to-space) INTER-SATELLITE 5.536 5.537 MOBILE	STANDARD SPECTRUM	

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Frequency		Service Allocations	Classification
27.5-28.5	GHz	FIXED 5.537A FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.517B 5.539 INTER-SATELLITE 5.521A MOBILE 5.538 5.540	STANDARD SPECTRUM
28.5-29.1	GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.517B 5.523A 5.539 INTER-SATELLITE 5.521A MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	STANDARD SPECTRUM
29.1-29.5	GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.516B 5.517A 5.523C 5.523E 5.535A 5.539 5.541A INTER-SATELLITE 5.521A MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	STANDARD SPECTRUM
29.5-29.9	GHz	FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.517B 5.527A 5.539 INTER-SATELLITE 5.521A MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (Earth-to-space) 5.541 5.525 5.526 5.527 5.529 5.540	STANDARD SPECTRUM
29.9-30	GHz	FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.517B 5.527A 5.539 INTER-SATELLITE 5.521A 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	STANDARD SPECTRUM
30-31	GHz	FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE-SATELLITE (Earth-to-space) Standard frequency and time signal-satellite (space-to-Earth) 5.542	STANDARD SPECTRUM
31-31.3	GHz	FIXED 5.338A 5.543A MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research 5.544 5.545 5.149	STANDARD SPECTRUM
31.3-31.5	GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	STANDARD SPECTRUM

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NATIONAL	FREQUENCY	ALLOCATION	TABLE

Frequency		Service Allocations	Classification
31.5-31.8	GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	STANDARD SPECTRUM
31.8-32	GHz	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547B 5.548	STANDARD SPECTRUM
32-32.3	GHz	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547C 5.548	STANDARD SPECTRUM
32.3-33	GHz	FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.547D 5.548	STANDARD SPECTRUM
33-33.4	GHz	FIXED 5.547A RADIONAVIGATION 5.547 5.547E	STANDARD SPECTRUM
33.4-34.2	GHz	RADIOLOCATION 5.549	STANDARD SPECTRUM
34.2-34.7	GHz	RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) 5.549	STANDARD SPECTRUM
34.7-35.2	GHz	RADIOLOCATION Space research 5.550 5.549	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
35.2-35.5	GHz	METEOROLOGICAL AIDS RADIOLOCATION 5.549	STANDARD SPECTRUM	
35.5-36	GHz	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549 5.549A	STANDARD SPECTRUM	
36-37	GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	STANDARD SPECTRUM	
37-37.5	GHz	FIXED MOBILE except for aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.547	STANDARD SPECTRUM	
37.5-38	GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.550C 5.550CA MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	STANDARD SPECTRUM	
38-39.5	GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Earth exploration-satellite (space-to-Earth) 5.547	STANDARD SPECTRUM	
39.5-40	GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	STANDARD SPECTRUM	

Frequency		Service Allocations	Classification
40-40.5	GHz	EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth)	STANDARD SPECTRUM
40.5-41	GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B BROADCASTING BROADCASTING-SATELLITE Mobile Mobile-satellite (space-to-Earth) 5.547	STANDARD SPECTRUM
41-42.5	GHz	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B BROADCASTING BROADCASTING-SATELLITE Mobile 5.547 5.551F 5.551H 5.551I	STANDARD SPECTRUM
42.5-43.5	GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except for aeronautical mobile RADIO ASTRONOMY 5.149 5.547	STANDARD SPECTRUM
43.5-47	GHz	MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	STANDARD SPECTRUM
47-47.2	GHz	AMATEUR AMATEUR-SATELLITE	STANDARD SPECTRUM
47.2-47.5 GHz	GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.552A	STANDARD SPECTRUM

NATIONAL FREC	UENCY ALLOCATION TABLE	

Frequency		Service Allocations	Classification
47.5-47.9	GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE	STANDARD SPECTRUM
47.9-48.2	GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.552A	STANDARD SPECTRUM
48.2-50.2	GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.516B 5.338A 5.552 MOBILE 5.149 5.340 5.555	STANDARD SPECTRUM
50.2-50.4	GHz	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	STANDARD SPECTRUM
50.4-51.4	GHz	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE Mobile-satellite (Earth-to-space)	STANDARD SPECTRUM
51.4-52.6	GHz	FIXED 5.338A MOBILE 5.547 5.556	STANDARD SPECTRUM
52.6-54.25	GHz	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	STANDARD SPECTRUM
54.25-55.78	GHz	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive) 5.556B	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
Trequency			
55.78-56.9	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		FIXED 5.557A INTER-SATELLITE 5.556A	
		MOBILE 5.558 SPACE RESEARCH (passive)	
		5.547 5.557	
56.9-57	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		FIXED INTER-SATELLITE 5.558A	
		MOBILE 5.558 SPACE RESEARCH (passive)	
		5.547 5.557	
57-58.2	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		FIXED INTER-SATELLITE 5.556A	
		MOBILE 5.558 SPACE RESEARCH (passive)	
		5.547 5.557	
58.2-59	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		FIXED	
		SPACE RESEARCH (passive)	
		5.547 5.556	
59-59.3	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		FIXED INTER-SATELLITE 5.556A	
		MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	
59.3-64	GHz	FIXED	STANDARD SPECTRUM
		INTER-SATELLITE	
		MOBILE 5.558	
		RADIOLOCATION 5.559	
		5.138	

Frequency		Service Allocations	Classification
64-65	GHz	FIXED INTER-SATELLITE MOBILE except for aeronautical mobile 5.547 5.556	STANDARD SPECTRUM
65-66	GHz	EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except for aeronautical mobile SPACE RESEARCH 5.547	STANDARD SPECTRUM
66-71	GHz	INTER-SATELLITE MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	STANDARD SPECTRUM
71-74	GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	STANDARD SPECTRUM
74-76	GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.561	STANDARD SPECTRUM
76-77.5	GHz	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	STANDARD SPECTRUM
77.5-78	GHz	AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.559B Radio astronomy Space research (space-to-Earth)	STANDARD SPECTRUM

NATIONAL FREQUENCY ALLOCATION TABLE				
Frequency		Service Allocations	Classification	
		5.149		
78-79	GHz	RADIOLOCATION Amateur	STANDARD SPECTRUM	
		Amateur-satellite		
		Radio astronomy Space research (space-to-Earth)		
		5.149 5.560		
79-81	GHz	RADIO ASTRONOMY	STANDARD SPECTRUM	
		RADIOLOCATION Amateur		
		Amateur-satellite Space research (space-to-Earth)		
		5.149		
81-84	GHz	FIXED 5.338A	STANDARD SPECTRUM	
		FIXED-SATELLITE (Earth-to-space)		
		MOBILE		
		MOBILE-SATELLITE (Earth-to-space)		
		RADIO ASTRONOMY		
		Space research (space-to-Earth)		
		5.149 5.561A		
84-86	GHz	FIXED 5.338A FIXED-SATELLITE (Earth-to-space) 5.561B	STANDARD SPECTRUM	
		MOBILE RADIO ASTRONOMY		
		5.149		
86-92	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM	
		RADIO ASTRONOMY SPACE RESEARCH (passive)		
		5.340		
92-94	GHz	FIXED 5.338A	STANDARD SPECTRUM	
		MOBILE RADIO ASTRONOMY		
		RADIOLOCATION		

NATIONAL FREQUENCY ALLOCATION TABLE			
Frequency		Service Allocations	Classification
		5.149	
94-94.1	GHz	EARTH EXPLORATION-SATELLITE (active)	STANDARD SPECTRUM
		RADIOLOCATION	
		SPACE RESEARCH (active) Radio astronomy	
		5.562 5.562A	
94.1-95	GHz	FIXED	STANDARD SPECTRUM
		MOBILE	
		5.149	
95-100	GHz	FIXED	STANDARD SPECTRUM
		MOBILE RADIO ASTRONOMY	
		RADIOLOCATION	
		RADIONAVIGATION	
		RADIONAVIGATION-SATELLITE	
		5.149 5.554	
100-102	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		RADIO ASTRONOMY SPACE RESEARCH (passive)	
		5.340 5.341	
102-105	GHz	FIXED	STANDARD SPECTRUM
		MOBILE RADIO ASTRONOMY	
		5.149 5.341	
105-109.5	GHz	FIXED	STANDARD SPECTRUM
		MOBILE	
		SPACE RESEARCH (passive) 5.562B	
		5.149 5.341	

Frequency		Service Allocations	Classification
109.5-111.8	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		RADIO ASTRONOMY	
		SPACE RESEARCH (passive)	
		5.340 5.341	
111.8-114.25	GHz	FIXED	STANDARD SPECTRUM
		MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B	
		5.149 5.341	
114.25-116	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		5.340 5.341	
116-119.98	GHz	FARTH FXPI ORATION-SATELLITE (passive)	STANDARD SPECTRUM
		INTER-SATELLITE 5.562C	
		SPACE RESEARCH (passive)	
		5.341	
119.98-122.25	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		INTER-SATELLITE 5.562C SPACE RESEARCH (passive)	
		5.138 5.341	
122.25-123	GHz	FIXED	STANDARD SPECTRUM
		INTER-SATELLITE	
		MOBILE 5.558 Amateur	
		5.138	
123-130	GHz	FIXED-SATELLITE (space-to-Earth)	STANDARD SPECTRUM
		MOBILE-SATELLITE (space-to-Earth)	
		RADIONAVIGATION	
		RADIONAVIGATION-SATELLITE Radio astronomy 5.562D	
		5.149 5.554	
130-134	GHz	EARTH EXPLORATION-SATELLITE (active) 5.562E	STANDARD SPECTRUM
		FIXED INTER-SATELLITE	
		MOBILE 5.558	

NATIONAL FREQUENCY ALLOCATION TABLE			
Frequency		Service Allocations	Classification
		RADIO ASTRONOMY	
		5.149 5.562A	
134-136	GHz	AMATEUR AMATEUR-SATELLITE Radio astronomy	STANDARD SPECTRUM
136-141	GHz	RADIO ASTRONOMY	STANDARD SPECTRUM
		RADIOLOCATION Amateur	
		Amateur-satellite	
		5.149	
141-148.5	GHz	FIXED	STANDARD SPECTRUM
		MOBILE	
		RADIO ASTRONOMY	
		RADIOLOCATION	
		5.149	
148.5-151.5	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		RADIO ASTRONOMY SPACE RESEARCH (passive)	
		5.340	
151.5-155.5	GHz	FIXED	STANDARD SPECTRUM
		MOBILE RADIO ASTRONOMY	
		RADIOLOCATION	
		5.149	
155.5-158.5	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM

FIXED MOBILE

**RADIO ASTRONOMY** 

5.149 5.562F 5.562G

SPACE RESEARCH (passive) 5.562B

Frequency		Service Allocations	Classification
158.5-164	GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	STANDARD SPECTRUM
164-167	GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	STANDARD SPECTRUM
167-174.5	GHz	FIXED FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE 5.558 5.149 5.562D	STANDARD SPECTRUM
174.5-174.8	GHz	FIXED INTER-SATELLITE MOBILE 5.558	STANDARD SPECTRUM
174.8-182	GHz	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	STANDARD SPECTRUM
182-185	GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	STANDARD SPECTRUM
185-190	GHz	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	STANDARD SPECTRUM
190-191.8	GHz	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	STANDARD SPECTRUM

Frequency		Service Allocations	Classification
191.8-200	GHz	FIXED	STANDARD SPECTRUM
		INTER-SATELLITE	
		MOBILE 5.558	
		MOBILE-SATELLITE	
		RADIONAVIGATION RADIONAVIGATION-SATELLITE	
		5.149 5.341 5.554	
200-209	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		RADIO ASTRONOMY SPACE RESEARCH (passive)	
		5.340 5.341 5.563A	
209-217	GHz	FIXED FIXED-SATELLITE (Earth-to-space)	STANDARD SPECTRUM
		MOBILE RADIO ASTRONOMY	
		5.149 5.341	
217-226	GHz	FIXED FIXED-SATELLITE (Earth-to-space)	STANDARD SPECTRUM
		MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B	
		5.149 5.341	
226-231.5	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		RADIO ASTRONOMY SPACE RESEARCH (passive)	
		5.340	
231.5-232	GHz	FIXED	STANDARD SPECTRUM
		MOBILE	
		Radiolocation	
232-235	GHz	FIXED	STANDARD SPECTRUM
		FIXED-SATELLITE (space-to-Earth)	
		MOBILE Radiolocation	

NATIONAL FREQUENCY ALLOCATION TABLE			
Frequency		Service Allocations	Classification
235-238	GHz	EARTH EXPLORATION-SATELLITE (passive) 5.563AA FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (passive) 5.563A 5.563B	STANDARD SPECTRUM
238-239.2	GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE	STANDARD SPECTRUM
239.2-240	GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE	STANDARD SPECTRUM
240-241	GHz	EARTH EXPLORATION-SATELLITE (passive) RADIOLOCATION	STANDARD SPECTRUM
241-2242.2	GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.149	STANDARD SPECTRUM
242.2-244.2		RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.138 5.149	STANDARD SPECTRUM
244.2-247.2		EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.138 5.149	STANDARD SPECTRUM
NATIONAL FREQUENCY ALLOCATION TABLE			
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Frequency		Service Allocations	Classification
247.2-248		RADIO ASTRONOMY	STANDARD SPECTRUM
		RADIOLOCATION	
		Amateur	
		Amateur-satellite 5.149	
248-250	GHz	AMATEUR AMATEUR-SATELLITE Radio astronomy	STANDARD SPECTRUM
		5.149	
250-252	GHz	EARTH EXPLORATION-SATELLITE (passive)	STANDARD SPECTRUM
		RADIO ASTRONOMY SPACE RESEARCH (passive)	
		5.340 5.563A	
252-265	GHz	FIXED	STANDARD SPECTRUM
		MOBILE MOBILE-SATELLITE (Earth-to-space)	
		RADIO ASTRONOMY	
		RADIONAVIGATION	
		RADIONAVIGATION-SATELLITE	
		5.149 5.554	
265-275	GHz	FIXED FIXED-SATELLITE (Earth-to-space)	STANDARD SPECTRUM
		MOBILE RADIO ASTRONOMY	
		5.149 5.563A	
275-3000	GHz	(Not allocated) 5.565	STANDARD SPECTRUM

**Note:** Amendments to the National Table of Allocations may lead to new assignments for services. Allocations and assignments are linked and will ultimately reflect local market structures and conditions. Allocating and assigning spectrum for various uses and users by URCA is a powerful tool with significant implications. Imposing or limiting restrictions on uses and users

has a direct impact on spectrum access and efficiency. Knowing where and where not to impose restrictions requires information, building consensus, and where consensus is lacking, the means to smooth out differences by way of an adjustment process such as compensation or arbitration. The National Frequency Allocation Table (NFAT) has been revised in accordance with the 2016 edition of Radio Regulations, which has been revised, approved, and adopted by the World Radiocommunication Conference (Geneva, 2015). This NFAT is consistent with the international table of frequency allocations set out in the ITU Radio Regulations. It covers a range of frequencies from 0 kHz to 1,000 GHz. Allocations are made on a primary or secondary basis. Stations of a secondary service cannot cause harmful interference to stations of primary services to which frequencies are already assigned or to which frequencies may be assigned later. Neither can stations of a secondary service claim protection from another secondary service, frequencies of which may be assigned later.

## APPENDIX B: STANDARDISED DEFINITIONS OF TERMS AND SERVICES

The following definitions were extracted from the Annex to the Constitution, the Annex to the Convention of the International Telecommunication Union (Geneva, 1992) and the International Telecommunication Union (ITU) Radio Regulations Manual (Edition of 1998). These are standardised terms and definitions used in the ITU Radio Regulations

Assigned Frequency: The centre of the frequency band assigned to a station.

**Accepted Interference:** Interference at a higher level than that defined as permissible interference and which has been agreed upon between two or more administrations without prejudice to other administrations.

**Aeronautical Fixed Service:** A radiocommunications service between specified fixed points provided primarily for the safety of air navigation and the regular, efficient, and economical operation of air transport.

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

**Aeronautical Mobile (R) Service:** An aeronautical mobile service reserved for communications relating to safety and regularity of flight, primarily along national or international civil air routes. **Aeronautical Mobile (OR)**<sup>1</sup> An aeronautical mobile service intended for communications, including those relating to flight coordination, primarily outside national or international civil air routes.

**Aeronautical Mobile Satellite Service:** A mobile service in which mobile earth stations are located onboard aircraft; survival craft stations and Emergency Positioning-Indicating Radio Beacon may also participate in this service.

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

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

**Amateur Service:** A radiocommunications service for self-training, intercommunication and technical investigations carried out by amateurs, that is, duly authorised persons interested in radio techniques solely with a personal aim and without pecuniary interest.

**Amateur-Satellite Service:** A radiocommunications service using space stations on earth for the same purposes as those of the amateur service.

**Aeronautical Radionavigation:** A radionavigation service intended to benefit and ensure the safe operation of aircraft.

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

**Broadcasting Satellite Service:** A radiocommunications service in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public.

**Class of Emission:** The set of characteristics of an emission, designated by standard symbols, e.g. the type of modulation of the primary carrier, modulating the signal, and type of information to be transmitted.

**Emission:** Radiation produced, or the production of radiation, by a radio transmitting station.

**Effective Isotropic Radiated Power (EIRP):** The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

**Effective Radiated Power (ERP)**: The product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction.

**Earth Exploration-Satellite Service:** A radiocommunications service between earth stations and one or more space stations, which may include links between space stations.

**Electronic communications**: Any cognate terms mean the conveyance of signals of any description, by the use of optical, electrical, magnetic or electromagnetic energy and

**Electronic communications sector**: The economic sector encompassing the provision of all electronic communications, including broadcasting.

Fixed Service: A radiocommunications service between specified fixed points.

**Harmful Interference:** Interference which endangers the functioning of a radionavigation service or other safety services or severely degrades, obstructs, or repeatedly interrupts a radiocommunications service operating in accordance with the Regulations.

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

**Inter-Satellite Service:** A radiocommunications service providing links between artificial earth satellites.

**Land Mobile Service:** A mobile service between a base station and a land-mobile station, or between mobile land stations.

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

**Metrological-Satellite Service:** An earth exploration-satellite service for meteorological purposes.

**Maritime Radionavigation Service:** A mobile-satellite intended for the benefit and the safe operation of ships.

**Maritime Mobile-Satellite Service:** A mobile-satellite in which mobile earth stations are located onboard ships; service survival craft stations and EPIRBs.

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

**Minister:** The Minister is charged with the responsibility for the ECS, which shall be any minister other than the Minister for URCA and the Minister for the Corporation.

**Mobile Satellite Service:** A radiocommunications service between mobile earth stations and one or more space stations, or between stations used by this service; or between mobile earth stations by means of one or more space stations.

**Mobile Service:** A radiocommunications service between mobile and land stations or between mobile stations.

**Maritime Radionavigation-Satellite Service:** A radionavigation-satellite service in which earth stations are located onboard ships.

**Meteorological Aids Service:** A radiocommunications service used for meteorological, including hydrological, observations and exploration.

**Port Operations Service:** A mobile maritime service in or near a port, between coast stations and ship stations, or between ship stations, in which messages are restricted to those relating to the operational handling, the movement and the safety of ships and, in an emergency, to the safety of persons.

Radiocommunications: Telecommunications by means of radio waves.

**Radiodetermination:** The determination of the position, velocity and/or other characteristics of an object, or the obtaining of information relating to these parameters, by means of the propagation properties of radio waves.

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

Radiolocation: Radiodetermination is used for purposes other than radionavigation.

**Radiation:** The outward flow of energy from any source in the form of radio waves.

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

**Radionavigation Satellite Service:** A radiocommunications service in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public.

**Standard Frequency and Time Signal Service:** A radiocommunications service for scientific, technical, and other purposes, providing the transmission of specified frequencies, time signals, or both of stated high precision, intended for general reception.

**Standard Frequency and Time Signal-Satellite Service:** A radiocommunications service using space stations on earth satellites for the same purposes as those stated above.

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

**Space Radiocommunications:** 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.

**Terrestrial Radiocommunications:** Any radiocommunications other than space radiocommunications or radio astronomy.

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**Telecommunications:** Any transmission, emission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems.

**Spectrum Allocation:** An allocation is an entry in a table of frequency allocations that sets out the use of a given frequency band by one or more radiocommunication services. The term allocation is also applied to the frequency band concerned. An allocation, then, is a distribution of frequencies to radio services.

**Spectrum Allotment:** An allotment is an entry of a designated channel in a plan for use by one or more countries in those countries or within designated areas for a radiocommunication service under specified conditions. An allotment then is a distribution of frequencies to geographical areas or countries.

**Spectrum Assignment:** An assignment is an authorisation given to a radio station to use a radio frequency or a radio frequency channel under specified conditions. An assignment is a distribution of a frequency or frequencies to a given radio station.

Also, the following terms shall have the meaning ascribed to them in section 114 of the Comms Amendment Act:

- "Cellular licence" means a licence which permits the licensee to provide cellular services;
- ii. "Cellular service" means any radiocommunications service the functionality of which enables continuous communication across boundaries between the different areas of radio coverage, with no perceptible interruption of such communication and which includes a handover process between elements of its network; and
- iii. "Radiocommunications" means the transmission, emission, or reception of messages, sound, visual images or signals using electromagnetic waves which are propagated in space and have frequencies lower than 3,000 GHz.

The mentioned laws and recommendations undergird the strategies set out in this NSP.