

# 2417-2450 MHz

## 1. Band Introduction

This is a shared band with secondary allocations to the Non-Federal amateur and Federal radiolocation services. It includes Federal Government applications including flight operations, land mobile operations, mobile radiolocation, ship-to-shore operations and research development test & evaluation (RDT&E). The National Aeronautics and Space Administration (NASA) uses this band for video downlinks from unmanned aerial vehicles. Military Departments, primarily Air Force and Navy, have assignments in this band for training and RDT&E systems at test ranges and bases. All Federal uses other than radiolocation operate in this band on a non-interference basis.<sup>1</sup>

Industrial, Scientific, and Medical (ISM) and unlicensed (Federal Communication Commission Part 15) devices are authorized to operate in this band. Although the major use of ISM and unlicensed devices in this band is by consumers, federal agencies also use these devices for various non-mission critical applications.

## 2. Allocations

### 2a. Allocation Table

The frequency allocation table shown below is extracted from NTIA's Manual of Regulations & Procedures for Federal Radio Frequency Management, Chapter 4 – Allocations, Allotments and Plans.

#### *Table of Frequency Allocations*

2417 - 2450 MHz

#### *United States Table*

2417-2450 Radiolocation G2 5.150 G124	2417-2450 Amateur 5.150 5.282	ISM Equipment (18) Amateur (97)
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1. Non-interference basis is a condition of use relative to other specific uses that affords no protection from harmful interference from the other specified users, and prohibits causing harmful interference to the other specified users (Chapter 6 of the NTIA Manual).

**2b. Additional Allocation Table Information**

5.150 The following bands:

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

are also designated for industrial, scientific and medical (ISM) applications.

Radiocommunication services operating within these bands must accept harmful interference which may be caused by these applications. ISM equipment operating in these bands is subject to the provisions of No. 15.13.

**G124** The band 2417-2450 MHz was identified for reallocation, effective August 10, 1995, for mixed Federal and non-Federal use under Title VI of the Omnibus Budget Reconciliation Act of 1993.

### 3. Federal Agency Use:

#### 3a. Federal Agency Frequency Assignments Table:

The following table identifies the frequency band, types of allocations, types of applications, and the number of frequency assignments by agency.

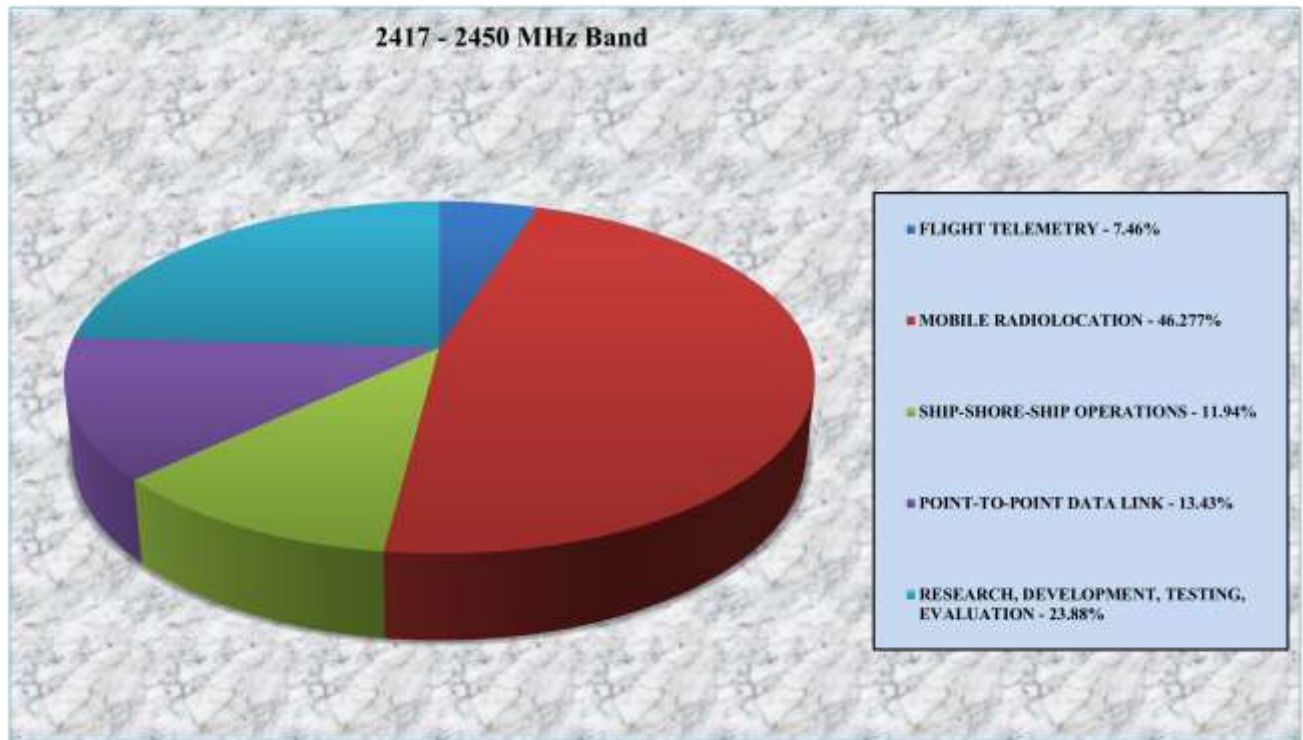
*Federal Frequency Assignment Table*

2417-2450 MHz Band						
SHARED BAND						
AMATEUR RADIOLOCATION						
AGENCY	FLIGHT TELEMETRY	MOBILE RADIOLOCATION	SHIP SHORE SHIP OPERATIONS	POINT-TO-POINT DATA LINK	RESEARCH DEVELOPMENT TESTING EVALUATION	TOTAL
AF		15		9	16	40
AR	1					1
N	2	16	8			26
NASA	2					2
<b>TOTAL</b>	<b>5</b>	<b>31</b>	<b>8</b>	<b>9</b>	<b>16</b>	<b>67</b>

The number of actual systems, or number of equipments, may exceed and sometimes far exceed, the number of frequency assignments in a band. Also, a frequency assignment may represent, a local, state, regional or nationwide authorization. Therefore, care must be taken in evaluating bands strictly on the basis of assignment counts or percentages of assignments.

### 3b. Percentage of Frequency Assignments Chart

The following chart displays the percentage of assignments for the applications operating in the frequency band 2417.0 – 2450.0 MHz.



## 4. Frequency Band Analysis By Application

This is a shared band with secondary allocations to the Non-Federal amateur and Federal radiolocation services. Military Departments, primarily Air Force and Navy have assignments in this band for training and RDT&E at test ranges and bases. There are few Federal assignments in this band.

### 4a. Radiolocation

The Air Force and Navy test pulsed Doppler miss distance sensors. These sensors are installed in the target vehicle (air or sea surface) and detect when a missile passes within sensor range. The sensor provides scoring information and is transmitted to the ground via datalink. The locations for this type of testing include Eglin Air Force Base, FL, White Sands Missile Range, NM, Makara Ridge, HA, and San Nicholas Island, CA.

**4b. Research, Development, Test & Evaluation**

The federal agencies operate a limited number of ground-based, airborne and shipborne systems in the 2417-2450 MHz band that are used to support training and RDT&E activities. These systems operate in this band on a non-interference basis. The systems are used for telemetry from UAVs, signal simulation systems, and communication systems. With the exception of the NASA UAV video links, all of the federal systems in this band have geographic limitations on where they can be operated (e.g., radius around military base).

**5. Planned Use:**

The Federal Government will continue to operate ground-based, airborne, and shipborne radiolocation systems in this band on a non-interference basis to support various training activities.

The Federal Government will continue to operate ground-based, airborne, and shipborne systems in this band on a non-interference basis to support various RDT&E activities.

NASA will continue to conduct simultaneous UAV flights from one to 30 hours up to five times each month.