# 2450-2483.5 MHz

## 1. Band Introduction

This band is allocated to non-Federal fixed, mobile, and radiolocation services. Federal Government systems in this band operate on a non-interference basis and consist of flight telemetry, land mobile, land radiolocation, mobile, mobile radiolocation, point-to-point data link, ship-to-shore operations, space research, and research, development, testing and evaluation (RDT&E).[1]

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***

***2450 – 2483.5 MHz***

***United States Table***

| *Federal Table* | *Non-Federal Table* | *FCC Rule Part(s)* |
|---|---|---|
| 2450-2483.5 | 2450-2483.5 | ISM Equipment (18) |
| | FIXED | TV Auxiliary Broadcasting (74F) |
| | MOBILE | Private Land Mobile (90) |
| | Radiolocation | Fixed Microwave (101) |
| 5.150 US41 | 5.150 US41 | |

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.

**US41** In the band 2450-2500 MHz, the Federal radiolocation service is permitted on condition that harmful interference is not caused to non-Federal services.

## 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.

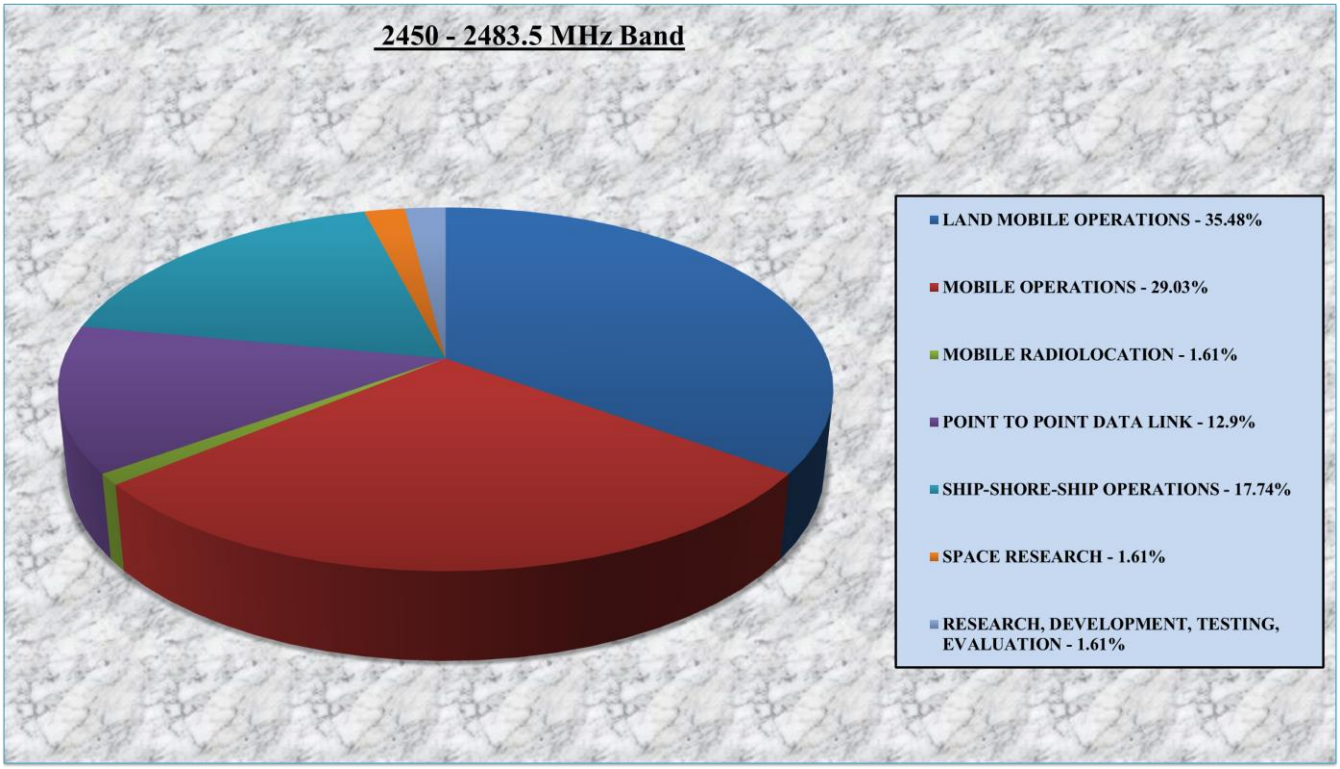
***Federal Frequency Assignment Table***

| 2450-2483.5 MHz Band | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NON-FEDERAL EXCLUSIVE BAND | | | | | | | | |
| | FIXED<br>MOBILE<br>RADIOLOCATION | | | | | | | |
| AGENCY | LAND MOBILE OPERATIONS | MOBILE OPERATIONS | MOBILE RADIOLOCATION | POINT TO POINT DATA LINK | SHIP SHORE SHIP OPERTIONS | SPACE RESEARCH | RESEARCH DEVELOPMENT TESTING EVALUATION | TOTAL |
| AF | | | | 5 | | | 1 | 6 |
| CG | 2 | | | | | | | 2 |
| DHS | | | 1 | | | | | 1 |
| DOE | 4 | | | | | | | 4 |
| DOI | | | | 1 | | | | 1 |
| DOJ | 16 | | | | | | | 16 |
| N | | | | | 11 | | | 11 |
| NASA | | 18 | | 2 | | 1 | | 21 |
| TOTAL | 22 | 18 | 1 | 8 | 11 | 1 | 1 | 62 |

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 chart legend below for the frequency band 2450.0 – 2483.5 MHz.




## 4. Frequency Band Analysis By Application

### 4a. Radiolocation

The Marine Corps operates speed measurement systems to enforce speed limits on Camp Pendleton. The Navy supports at-sea radar operations for fleet support to discern and correlate speed measurement. These radar operations are conducted on several frequencies requiring the need for a band assignment. The Navy uses this on a non-interference basis to non-Federal systems. These operations are conducted in both the Pacific and the Atlantic oceans.

### 4b. Fixed

NASA transmits television programming throughout the Johnson Space Center as well as outlying locations controlled by NASA.
The Department of Interior requires T1 service from Ehrenberg, AZ to Black Point, CA.

**4c. Mobile**

The Coast Guard has frequency assignments for boat crew communications; and for radio frequency identification systems used for container tracking and port security nationwide. The Department of Justice operates a video link to support a bomb data robot system for first responders nationwide. NASA operates an uplink and downlink to its scientific balloon-borne payload at several locations which include Palestine TX, and Fort Sumner, NM. This capability is provided by the ESRANGE E-Link telemetry system which provides communications with high bandwidth across long distances; it provides stratospheric balloon payloads data-link. NASA operates video downlinks from unmanned aerial vehicles; these operations are performed at Wallops Island, VA.

**4d. Research, Development, Test and Evaluation**

The federal agencies operate a limited number of ground-based, airborne, and shipborne systems in the 2450-2483.5 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, fixed, and mobile systems in this band on a non-interference basis to support various training activities.

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