

2400-2417 MHz

1. Band Introduction

This non-government band is allocated for the non-Federal amateur service. The military agencies operate systems in this band on a non-interference basis for air-to-ground-to-air communication, flight telemetry, point-to-point data links, and ship-to-shore communication.¹ These systems are used to support research, development, test and evaluation (RDT&E) activities.

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 and Procedures for Federal Radio Frequency Management (NTIA Manual), Chapter 4 – Allocations, Allotments and Plans.

Table of Frequency Allocations

2400 - 2417 MHz

United States Table

2400-2417	2400-2417 AMATEUR	ISM Equipment (18) Amateur (97)
5.150 G122	5.150 5.282	

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.

G122 In the bands 2395-2400 MHz, 2402-2417 MHz, and 4940-4990 MHz, Federal operations may be authorized on a non-interference basis to authorized non-Federal operations, but shall not hinder the implementation of any non-Federal operations.

3. Federal Agency Use:

3a. Federal Agency Frequency Assignments Table:

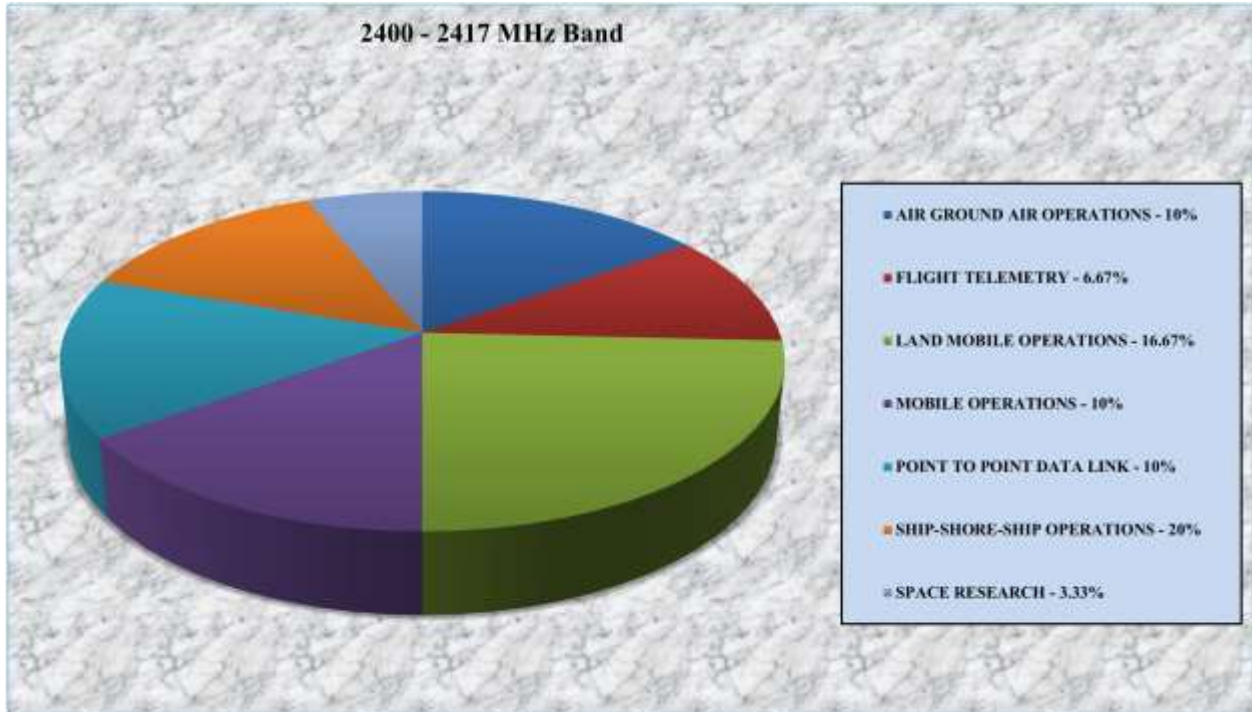
The following table identifies the frequency band, types of allocations, types of applications, and the number of frequency assignments by agency.

Federal Frequency Assignment Table

2400-2417 MHz Band									
NON-FEDERAL EXCLUSIVE BAND									
AGENCY	AMATEUR								
	TYPE OF APPLICATION								
	AIR GROUND AIR OPERATIONS	FLIGHT TELEMETRY	LAND MOBILE OPERATIONS	MOBILE OPERATIONS	POINT TO POINT DATA LINK	SHIP SHORE SHIP OPERATIONS	SPACE RESEARCH	RESEARCH DEVELOPMENT TESTING EVALUATION	TOTAL
AF					2				2
AR	1		2					1	4
DOC		1	3						4
DOI					1				1
MC	2								2
N						6		9	15
NASA		1					1		2
TOTAL	3	2	5	3	3	6	1	10	30
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, al 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 frequency assignments in the Government Master File (GMF) for the systems operating in the frequency band 2400.0 – 2417.0 MHz.



4. Frequency Band Analysis By Application

This band is allocated only for non-Federal amateur use with Federal applications on a non-interference basis. Although there are many applications listed for Federal use, there are few Federal assignments and many of those are used for RDT&E. NASA uses this band for video downlinks from unmanned aerial vehicles. Military uses include land mobile operations, mobile operations, point to point data link, air-to-ground-to-air operations, ship-to-shore operations, and RDT&E. The DoD operates communications systems and wireless local area networks (WLANs) on a non-interference basis in the 2400-2483.5 MHz portion of the band. This spectrum is also extensively used for industrial, scientific and medical (ISM) equipment such as microwave ovens, cordless telephones, and unlicensed WiFi systems utilizing a center frequency of 2450 MHz.

The Federal agencies operate a limited number of ground-based, airborne and shipborne systems in the 2400-2417 MHz band that are used to support training and RDT&E

activities. All federal systems operate in this band on a non-interference basis are used for telemetry from UAVs, alarm systems, systems used for controlling vehicles to aid with the handling of hazardous materials, surveillance 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 systems in this band on a non-interference basis to support various RDT&E activities. NASA will conduct simultaneous UAV flights from one to 30 hours up to five times each month.