

399.9–400.05 MHz

1. Band Introduction

This shared band is allocated for the mobile-satellite (Earth-to-space) and radionavigation-satellite services. The Federal Government operates systems in this band that are used for space research, land mobile radio, and research, development, testing and evaluation (RDT&E) on a non-interference basis. There are few Federal assignments in this band of those the Army has two land mobile assignments.

2. Allocations

2a. Allocation Table

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

Table of Frequency Allocations

United States Table

Federal Table	Non-Federal Table	FCC Rule Part(s)
399.9-400.05 MOBILE-SATELLITE (Earth-to-space) US319 US320 RADIONAVIGATION-SATELLITE 5.260		Satellite Communications (25)

2b. Additional Allocation Table Information

5.260 Recognizing that the use of the band 399.9-400.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation satellite service, administrations are urged not to authorize such use in application of No. 4.4.

US319 In the bands 137-138 MHz, 148-149.9 MHz, 149.9-150.05 MHz, 399.9-400.05 MHz, 400.15-401 MHz, 1610-1626.5 MHz, and 2483.5-2500 MHz, Federal stations in the mobile-satellite service shall be limited to earth stations operating with non-Federal space stations.

US320 The use of the bands 137-138 MHz, 148-150.05 MHz, 399.9-400.05 MHz, and 400.15-401 MHz by the mobile-satellite service is limited to non-voice, non-geostationary satellite systems and may include satellite links between land earth stations at fixed locations.

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3. Federal Agency Use

3a. Federal Agency Frequency Assignments Table:

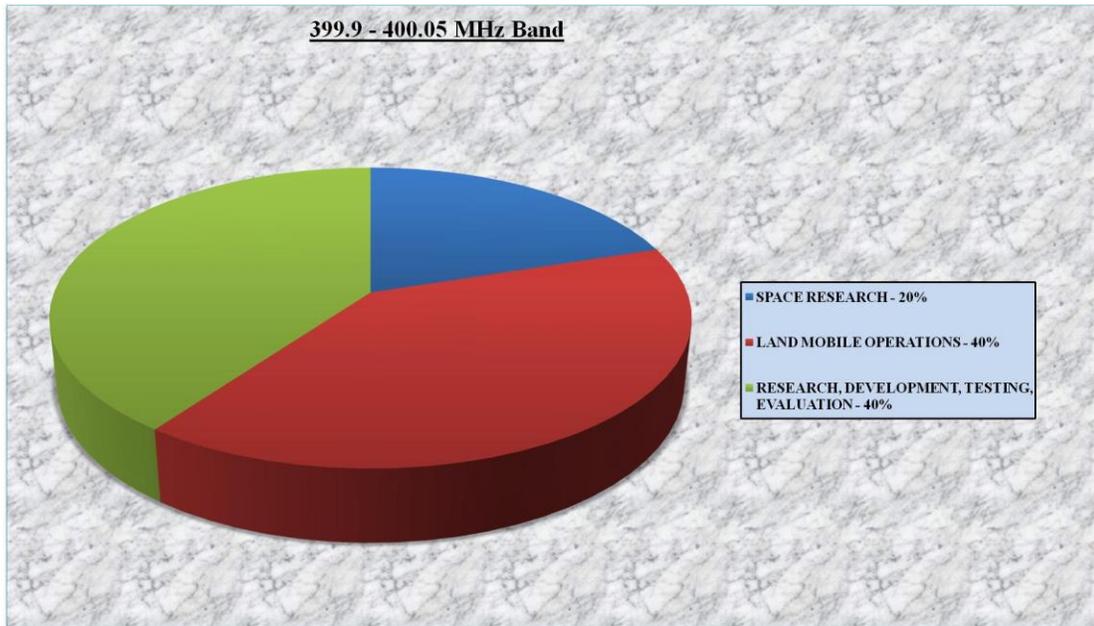
The following table identifies the frequency band, type(s) of allocation(s), types of application, and the number of frequency assignments by agency.

Federal Frequency Assignment Table

399.9-400.05 MHz Band				
SHARED BAND				
AGENCY	MOBILE-SATELLITE (Earth-to-space) RADIONAVIGATION-SATELLITE			
	TYPE OF APPLICATION			
	SPACE RESEARCH	LAND MOBILE OPERATIONS	RESEARCH DEVELOPMENT TESTING EVALUATION	TOTAL
	AF	1		1
AR		2		2
N			1	1
TOTAL	1	2	2	5
<p>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.</p>				

3b. Percentage of Frequency Assignments Chart

The following chart displays the percentage of frequency assignments for the systems operating in the frequency band 399.9 – 400.05 MHz. The greatest use in the band is land mobile operations.



4. Frequency Band Analysis By Application

4a. Mobile-Satellite (Earth-to-Space) Service

The Federal Government is not using the 399.9-400.05 MHz band for systems operating in the mobile-satellite service at this time.

4b. Radionavigation Service

Federal use in this band was originally for radionavigation service, however, that has changed over time.

4c. Research Development Test and Evaluation Operations

In addition to the radio services allocated to operate in this band, the federal agencies perform a variety of research and development activities.

The Air Force operates the Communication/Navigation Outage Forecasting System (C/NOFS) in this band for space research. C/NOFS is a research satellite carrying

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instruments that are used to perform isospheric scintillation measurements.¹ These instruments include the C/NOFS Occultation Receiver for Ionospheric Sensing and Specification (CORISS), a Global Positioning System dual-frequency receiver designed to measure line-of-sight electron densities in the ionosphere. The satellite payload also includes the Coherent Electromagnetic Radio Tomography (CERTO) experiment, a radio beacon that will provide plasma density profiles and information on phase and amplitude scintillation of radio signals. The measurements performed by C/NOFS are used to forecast in real time ionospheric scintillation which causes problems with the reception of communication and navigation signals.

The Navy operates test and measurement systems that are used for the development and evaluation of flight termination antennas for unmanned air vehicles.

5. Planned Use

The Federal Government will continue to use this band to monitor and forecast ionospheric scintillation in real-time and on a global basis indefinitely.

¹. Irregularly structured ionospheric regions can cause diffraction and scattering of trans-ionospheric radio signals. When received at an antenna, these signals present random temporal fluctuations in both amplitude and phase. This is known as ionospheric scintillation.