

## 5925-7125 MHz

### 1. Band Introduction

The 5925-7125 MHz band is comprised of four sub-bands within the Federal Table of Frequency Allocations: 5925-6425 MHz, 6425-6525 MHz, 6525-6700 MHz, and 6700-7125 MHz. Even though there are no federal allocations specifically within these sub-bands, the federal agencies operate earth stations (Earth-to-space direction) in conjunction with commercial fixed-satellite service (FSS) geostationary satellites for the transmission of voice, data, and video information. The 5925-6425 MHz sub-band is generally paired with the 3700-4200 MHz band, which is allocated to the FSS in the space-to-Earth direction.

### 2. Allocations

#### 2a. Allocation Table

The frequency allocation table shown below is extracted from the Manual of Regulations and 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)
5925-6425	5925-6425 FIXED FIXED-SATELLITE (Earth-to-space) NG181	RF Devices (15) Satellite Communications (25) Fixed Microwave (101)
6425-6525	6425-6525 FIXED-SATELLITE (Earth-to-space) MOBILE	RF Devices (15) Satellite Communications (25) TV Broadcast Auxiliary (74F) Cable TV Relay (78) Fixed Microwave (101)
5.440 5.458	5.440 5.458	
6525-6700	6525-6700 FIXED FIXED-SATELLITE (Earth-to-space)	RF Devices (15) Satellite Communications (25) Fixed Microwave (101)
5.458 US342	5.458 US342	
6700-7125	6700-6875 FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 5.458 5.458A 5.458B	
	6875-7025 FIXED NG118 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE NG171 5.458 5.458A 5.458B	RF Devices (15) Satellite Communications (25) TV Broadcast Auxiliary (74F) Cable TV Relay (78)

5.458	7025-7075 FIXED NG118 FIXED-SATELLITE (Earth-to-space) NG172 MOBILE NG171 5.458 5.458A 5.458B	RF Devices (15) TV Broadcast Auxiliary (74F) Cable TV Relay (78)
	7075-7125 FIXED NG118 MOBILE NG171 5.458	

**2b. Additional Allocation Table Information**

**5.440** The standard frequency and time signal-satellite service may be authorized to use the frequency 4202 MHz for space-to-Earth transmissions and the frequency 6427 MHz for Earth-to-space transmissions. Such transmissions shall be confined within the limits of  $\pm 2$  MHz of these frequencies, subject to agreement obtained under No. 9.21.

**5.441** The use of the bands 4500-4800 MHz (space-to-Earth), 6725-7025 MHz (Earth-to-space) by the fixed-satellite service shall be in accordance with the provisions of Appendix 30B. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by geostationary-satellite systems in the fixed-satellite service shall be in accordance with the provisions of Appendix 30B. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. 9.12 for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. 5.43A does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated.

**5.458** In the band 6425-7025 MHz, passive microwave sensor measurements are carried out over the oceans. In the band 7025-7250 MHz, passive microwave sensor measurements are carried out. Administrations should bear in mind the needs of the Earth exploration-satellite (passive) and space research (passive) services in their future planning of the bands 6425-7025 MHz and 7025-7250 MHz.

**5.458A** In making assignments in the band 6700-7025 MHz to space stations of the fixed-satellite service, administrations are urged to take all practicable steps to protect spectral line observations of the radio astronomy service in the band 6650-6675.2 MHz from harmful interference from unwanted emissions.

**5.458B** The space-to-Earth allocation to the fixed-satellite service in the band 6700-7075 MHz is limited to feeder links for non-geostationary satellite systems of the mobile-satellite service and is subject to coordination under No. 9.11A. The use of the band 6700-7075 MHz (space-to-Earth) by feeder links for non-geostationary satellite systems in the mobile-satellite service is not subject to No. 22.2.

**NG 118** In the bands 2025-2110 MHz, 6875-7125 MHz, and 12.7-13.25 GHz, television translator relay stations may be authorized to use frequencies on a secondary basis to other stations in the Television Broadcast Auxiliary Service that are operating in accordance with the Table of Frequency Allocations.

**NG 171** In the band 6875-7125 MHz, the following two channels should be used for airborne TV pickup stations, wherever possible: 7075-7100 MHz and 7100-7125 MHz.

**NG 172** In the band 7025-7075 MHz, the fixed-satellite service (space-to-Earth) is allocated on a primary basis, but the use of this allocation shall be limited to two grandfathered satellite systems. Associated earth stations located within 300 meters of the following locations shall be grandfathered: (a) In the band 7025-7075 MHz, Brewster, WA (48° 08' 46.7" N, 119° 42' 8.0" W); and (b) In the sub-band 7025-7055 MHz, Clifton, TX (31° 47' 58.5" N, 97° 36' 46.7" W) and Finca Pascual, PR (17° 58' 41.8 N, 67° 8' 12.6" W).

**NG181** In the band 5925-6425 MHz (Earth-to-space), earth stations on vessels (ESVs) are an application of the fixed-satellite service (FSS) and may be authorized to communicate with space stations of the FSS on a primary basis.

**US342** In making assignments to stations of other services to which the bands:

13360-13410 kHz	42.77-42.87 GHz*
25550-25670 kHz	43.07-43.17 GHz*
37.5-38.25 MHz	43.37-43.47 GHz*
322-328.6 MHz*	48.94-49.04 GHz*
1330-1400 MHz*	76-86 GHz
1610.6-1613.8 MHz*	92-94 GHz
1660-1660.5 MHz*	94.1-100 GHz
1668.4-1670 MHz*	102-109.5 GHz
3260-3267 MHz*	111.8-114.25 GHz
3332-3339 MHz*	128.33-128.59 GHz*
3345.8-3352.5 MHz*	129.23-129.49 GHz*
4825-4835 MHz*	130-134 GHz
4950-4990 MHz	136-148.5 GHz
6650-6675.2 MHz*	151.5-158.5 GHz
14.47-14.5 GHz*	168.59-168.93 GHz*
22.01-22.21 GHz*	171.11-171.45 GHz*
22.21-22.5 GHz	172.31-172.65 GHz*
22.81-22.86 GHz*	173.52-173.85 GHz*
23.07-23.12 GHz*	195.75-196.15 GHz*

31.2-31.3 GHz	209-226 GHz
36.43-36.5 GHz*	241-250 GHz
42.5-43.5 GHz	252-275 GHz

are allocated (\*indicates radio astronomy use for spectral line observations), all practicable steps shall be taken to protect the radio astronomy service from harmful interference. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the radio astronomy service (*see ITU Radio Regulations* at Nos. 4.5 and 4.6 and Article 29).

### **3. Federal Agency Use**

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

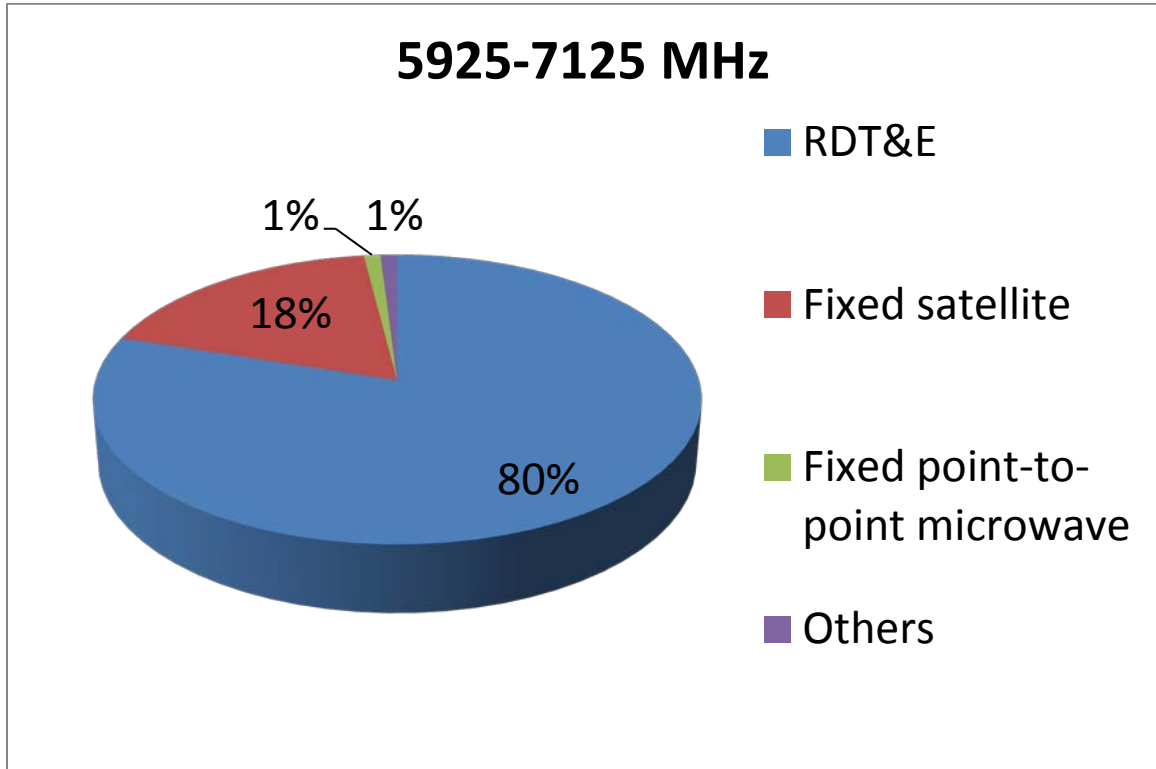
The following table identifies the frequency band, type(s) of allocation(s), types of applications, and the number of frequency assignments in the Government Master File (GMF) by agency.

**Federal Agency Assignment Table  
(as of August 9, 2017)**

5925 - 7125 MHz Band							
NON-FEDERAL EXCLUSIVE BAND							
	FIXED						
	FIXED-SATELLITE (Earth-to-space)						
	FIXED-SATELLITE (space-to-Earth)						
AGENCY	MOBILE						
	TYPE OF APPLICATION						
	EARTH EXPLORATION SATELLITE	FIXED POINT-TO-POINT MICROWAVE	FIXED SATELLITE	MARITIME MOBILE SATELLITE	POINT-TO-POINT DATA LINK	RESEARCH DEVELOPMENT TESTING EVALUATION	TOTAL
AF		3				500	503
AR			7		1	4	12
BBG			3				3
DOE		2					2
DOI		4			4		8
FAA			115				115
N				2		103	105
NASA	1						1
S			13				13
<b>TOTAL</b>	<b>1</b>	<b>9</b>	<b>138</b>	<b>2</b>	<b>5</b>	<b>607</b>	<b>762</b>
<p>The number of actual systems, or number of equipment 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 authorization. Therefore, care must be taken in evaluating bands strictly on the basis of assignment counts or percentage of assignments.</p>							

### 3b. Percentage of Frequency Assignments Chart

The following chart displays the percentage of assignments in the GMF for the applications operating in the 5925-7125 MHz band.



### 4. Frequency Band Analysis by Application

Most of the non-RDT&E federal assignments in the 5925-7125 MHz band are for earth station uplinks operating in conjunction with commercial FSS satellites. For example, the Federal Aviation Administration (FAA) has a number of assignments for earth station uplinks throughout Alaska in support of air traffic control activities. The State Department (S) also has assignments for earth stations for communications from foreign embassies located in Washington, DC. In addition, State has assignments for use in Palau for earth stations operating in conjunction with INTELSAT and other non-U.S. licensed FSS satellites. The Broadcasting Board of Governors (BBG) has assignments for earth stations in the United States as well as in the Marianna Islands. The Army (AR) has frequency assignments in this band for earth stations operating in the United States in conjunction with non-U.S. satellites; and the Navy (N) operates earth stations using commercial FSS satellites on board ships.

Further, there are a number of systems operating in this band on a non-interference basis. The Navy has assignments for mobile and fixed systems used for testing radar systems, and providing aircrew tactical training and test range support. The Air Force (AF)

operates systems in this band for research, development, and testing of radars and tactical communications systems. The Department of Energy (DOE) operates fixed point-to-point microwave systems in this band at various locations for power transmission control systems and the Air Force operates fixed point-to-point microwave systems in this band at test and training ranges. The Department of Interior (DOI) operates fixed point-to-point systems in this band to provide intra-island communication in American Samoa. The National Aeronautics and Space Administration (NASA) uses the 6425-7250 MHz band for passive sensing of the Earth from space using microwave radiometers to monitor sea surface temperature. These measurements are a key component in weather forecasting and climate studies. NASA also uses the 6700-7125 MHz portion of the band on a non-interference basis, to support telecommand and tracking of the European Space Agency's Planck spacecraft during critical and emergency events.

## **5. Planned Use**

The federal use of this band, as described above, is expected to continue for the foreseeable future. As a side note, the FCC initiated a new inquiry seeking comment on ways to expand opportunities for next-generation services – particularly wireless broadband services – in mid-band spectrum including the 5925-6425 MHz and 6425-7125 MHz bands.