



6712-01

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 2, 90, and 97

[WT Docket No. 19-348; FCC 19-130; FRS 16397]

Facilitating Shared Use in the 3.1-3.55 GHz Band

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: In this document, a Notice of Proposed Rulemaking (NPRM) proposes to remove the existing non-federal secondary radiolocation and amateur allocations in the 3.3-3.55 GHz band and to relocate incumbent non-federal operations out of the band, in order to prepare the band for possible expanded commercial wireless use. Specifically, the NPRM would eliminate the non-federal radiolocation services allocation in the 3.3- 3.55 GHz band and the non-federal amateur allocation in the 3.3-3.5 GHz band. This NPRM also seeks comment on appropriate relocation options for incumbent non-federal users, either to the 3.1-3.3 GHz band or to other frequencies, on the transition mechanism and process for relocating existing non-federal users, and on potential relocation costs and considerations. The proposals in the NPRM are an initial step toward potential future shared use between federal operations and flexible use commercial services, consistent with the Commission's responsibilities specified in the MOBILE NOW Act to identify spectrum for new mobile and fixed wireless use and to work in consultation with the National Telecommunications and Information Administration (NTIA) to evaluate the feasibility of allowing commercial wireless services to share use of spectrum between 3.1 and 3.55 GHz.

DATES: Interested parties may file comments on or before **[INSERT 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**; and reply comments on or

before **[INSERT 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may submit comments, identified by WT Docket No. 19-348, by any of the following methods:

- *Federal Communications Commission's Web Site:* <http://apps.fcc.gov/ecfs/>. Follow the instructions for submitting comments.
- *People with Disabilities:* Contact the FCC to request reasonable accommodations (accessible format documents, sign language interpreters, CART, etc.) by e-mail: FCC504@fcc.gov or phone: 202-418-0530 or TTY: 202-418-0432.

For detailed instructions for submitting comments and additional information on the rulemaking process, see the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: Mary Claire York of the Wireless Telecommunications Bureau, Mobility Division, (202) 418-2205 or MaryClaire.York@fcc.gov.

For additional information concerning the Paperwork Reduction Act information collection requirements contained in this NPRM, contact Cathy Williams, Office of Managing Director, at (202) 418-2918 or Cathy.Williams@fcc.gov or email PRA@fcc.gov.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Notice of Proposed Rulemaking (NPRM), WT Docket No. 19-348; FCC 19-130, adopted on December 12, 2019 and released on December 16, 2019. The full text of this document is available at <https://docs.fcc.gov/public/attachments/FCC-19-130A1.pdf>.

SYNOPSIS

MOBILE NOW Act and Current Allocations. Congress addressed the pressing need for additional spectrum for wireless broadband in the Fiscal Year 2018 omnibus spending bill, signed into law in March 2018, which includes the MOBILE NOW Act under Title VI of RAY

BAUM’S Act. Consolidated Appropriations Act, 2018, P.L. 115-141, Division P, the Repack Airwaves Yielding Better Access for Users of Modern Services (RAY BAUM’S) Act, Title VI (the Making Opportunities for Broadband Investment and Limiting Excessive and Needless Obstacles to Wireless Act or MOBILE NOW Act). In light of the importance of making spectrum available for new technologies and maintaining America’s leadership position in the future of communications technology, the Act mandates that the Secretary of Commerce, working through NTIA: (1) submit, in consultation with the Commission and the head of each affected Federal agency (or a designee thereof), a report by March 23, 2020 on the feasibility of “allowing commercial wireless service, licensed or unlicensed, to share use of the frequencies between 3100 megahertz and 3550 megahertz,” and (2) identify with the Commission “at least 255 megahertz of Federal and non-Federal spectrum for mobile and fixed wireless broadband use” by December 31, 2022. With respect to this second obligation of NTIA and the Commission, the Act further specifies that not less than “100 megahertz below the frequency of 6000 megahertz shall be identified for use on an exclusive, licensed basis for commercial mobile use, pursuant to the Commission’s authority to implement such licensing in a flexible manner” and “subject to potential continued use of such spectrum by incumbent Federal entities in designated geographic areas” in accordance with specified terms of the Act and not less than “100 megahertz below the frequency of 8000 megahertz shall be identified for use on an unlicensed basis.” *Id.* §§ 605(a), § 603(a)(1), 603(a)(2)(B).

Of the frequencies between 3100 MHz and 3550 MHz, NTIA has identified the top 100 megahertz in the 3.45-3.55 GHz band as the most promising portion for sharing in the near term and is conducting a feasibility assessment in collaboration with the Department of Defense (DOD), and continues to study the feasibility of sharing in the entire 3.1-3.55 GHz band with existing and future Federal users. The report on the 3.1-3.55 GHz band must include: “(1) [a]n

assessment of the operations of Federal entities that operate Federal Government stations authorized to use the frequencies . . .”; (2) “[a]n assessment of the possible impacts of such sharing on Federal and non-Federal users already operating on the frequencies . . .”; (3) “[t]he criteria that may be necessary to ensure shared licensed or unlicensed services would not cause harmful interference to Federal or non-Federal users already operating in the frequencies . . .” and (4) “[i]f such sharing is feasible, an identification of which of the frequencies described in that subsection are most suitable for sharing with commercial wireless services through the assignment of new licenses by competitive bidding, for sharing with unlicensed operations, or through a combination of licensing and unlicensed operations.” Once NTIA has submitted the report, “[t]he Commission, in consultation with the NTIA, shall seek public comment on the repor[t]” *Id.* §§ 605(c), (d).

Currently, the entire 3.1-3.55 GHz band is allocated for both Federal and non-federal radiolocation services, with non-federal users operating on a secondary basis to Federal radiolocation services, which have a primary allocation. 47 CFR 2.106 and US108, 90.103(b), (c)(12). The Federal radiolocation allocation is one piece of a broader Federal primary allocation for radiolocation in the 2.9-3.65 GHz band. 47 CFR 2.106. The DOD operates high-powered defense radar systems on fixed, mobile, shipborne, and airborne platforms in this band. These radar systems are used in conjunction with weapons control systems and for the detection and tracking of air and surface targets. The DOD also operates radar systems used for fleet air defense, missile and gunfire control, bomb scoring, battlefield weapon locations, air traffic control, and range safety.

In addition, the 3.3-3.5 GHz band is allocated for non-federal amateur use and the 3.5-3.55 GHz band is allocated for Federal aeronautical radionavigation services. *Id.* Between 3.3 and 3.55 GHz, there are only eight active licenses being used for a variety of commercial and

industrial radiolocation services, such as doppler radar to provide weather information to broadcast viewers. Non-federal transmitters operating between 3.3-3.5 GHz are limited to survey operations and cannot exceed a peak power of 5 watts into the antenna. From 3.1-3.3 GHz, the band is allocated for space research (active) and earth exploration satellite (active) in addition to radiolocation services. *Id.* There are 17 non-federal radiolocation licenses below 3.3 GHz, held by power companies and municipalities.

Among the non-federal users already operating on these frequencies are hundreds of experimental licenses, including special temporary authorizations (STAs), active throughout the 3.1-3.55 GHz band. Experimental STAs may be requested for operation of a conventional experimental radio service station for a temporary period of no longer than six months. 47 CFR 5.54(a)(2), 5.61. A current list of active experimental authorizations throughout the 3.1-3.55 GHz band can be found via the Office of Engineering and Technology's Experimental Licensing System Generic Search, available at <https://apps.fcc.gov/oetcf/els/reports/GenericSearch.cfm>. These licenses and STAs, pursuant to part 5 of the Commission's rules, may be granted for a broad range of research and experimentation purposes but such operations are on a non-interference basis (i.e., if an experimental facility should cause interference, the licensee is required to discontinue operation. 47 CFR 5.3, 5.84. Many of the recurring STAs in the band enable short-term use of these or other frequencies to add additional capacity during sporting events.

In light of the statutory provisions contained in the MOBILE NOW Act, the Wireless Telecommunications Bureau in February 2019 imposed a freeze on accepting and processing applications for new or expanded part 90 Radiolocation Service operations in the 3.1-3.55 GHz band to "maintain a stable spectral environment in a band that is under active consideration for

possible alternative use.” Temporary Freeze on Non-Federal Applications in the 3100-3550 MHz Band, WT Docket No. 19-39, Public Notice, 34 FCC Rcd 19 (WTB Feb. 22, 2019).

A. Removal of Non-Federal Allocations

In this NPRM, the Commission proposes to remove the non-federal allocations for the 3.3-3.55 GHz band and relocate incumbent non-federal users out of the band. The Commission notes that the 3.3-3.55 GHz band has been the focus for 5G use by standards setting organizations and in other countries, and the Commission thus believes our focus on this band would promote international harmonization. The Commission also notes that NTIA has identified the top 100 megahertz in the 3.45-3.55 GHz band as the most promising portion for making new spectrum available for commercial use, and therefore expects that band will be the Commission’s first priority. The Commission also seeks comment on transition and protection mechanisms for non-federal incumbent operators.

The Commission proposes to eliminate the non-federal radiolocation services allocation in the 3.3-3.55 GHz band and the non-federal amateur allocation in the 3.3-3.5 GHz. Specifically, the Commission proposes to remove these non-federal allocations from the Table of Frequency Allocations in section 2.106 of the rules, 47 CFR 2.106, and make conforming rule changes in parts 90 and 97, 47 CFR parts 90 and 97. The proposed removal is an initial step toward potential future shared use between Federal operations and flexible use commercial services, in furtherance of the Commission’s obligations under the MOBILE NOW Act to identify spectrum for mobile and fixed wireless use and to work with NTIA to evaluate this band for potential shared use. As the Commission has recognized in other proceedings, mid-band spectrum is well-suited for next generation wireless broadband services given the combination of favorable propagation characteristics (as compared to high bands) and the opportunity for additional channel re-use (as compared to low bands). As a general matter, the Commission

considers clearing spectrum for flexible use to be a priority when it is feasible to do so. Where it has not been feasible, the Commission has attempted to introduce sharing. As demonstrated by the commercial interest in the adjacent 3.5 GHz band, as well as the extensive use of experimental licenses and STAs operating in the 3.1-3.55 GHz band throughout 2019, flexible-use operations in the 3 GHz band hold substantial promise.

By taking the initial step needed to clear the band of allocations for non-federal incumbents, the Commission furthers its continued efforts to make more mid-band spectrum potentially available to support next generation wireless networks—consistent with the mandate of the MOBILE NOW Act. The Commission seeks comment on this proposal.

B. Future of Incumbent Non-Federal Operations

The Commission seeks comment on appropriate relocation options for incumbent non-federal users, either to the 3.1-3.3 GHz band or to other frequencies. Which other frequencies might be appropriate to accommodate the current and future uses of the band? Should the Commission consider different frequencies for different licensees depending on their specific needs? For example, are there different considerations that the Commission should take into account in considering alternate frequencies for the relatively low-power operations in the 3.3-3.5 GHz band and the high-power weather radar operations in the 3.5-3.55 GHz band? The Commission believes that moving the high-power weather radars in particular may benefit operations in the adjacent 3.55-3.7 GHz band by minimizing the potential for harmful interference from the non-federal radars to Citizens Broadband Radio Service operations.

The Commission seeks comment on relocating non-federal licensees to another band. What band would be most appropriate? For example, if relocated to the 3.1-3.3 GHz band, the Commission would propose that these licensees would continue to operate on a secondary basis to Federal operations, consistent with the current allocations in the band. The Commission seeks

comment on whether this proposal is the most efficient and appropriate scheme for future use of the band and also seeks comment on how best to balance the interests of existing licensees in the 3.3-3.55 GHz band with potentially preparing the band for possible future shared use between Federal incumbents and commercial wireless services, if feasible. And the Commission seeks comment on how to ensure that non-federal secondary operations in the 3.1-3.3 GHz band will continue to protect Federal radar systems. Commenters should precisely describe proposed approaches and explain the costs and benefits of their proposals.

With respect to amateur operations, is there sufficient existing amateur spectrum in other bands that can support the operations currently conducted in the 3.3-3.5 GHz band? The Commission notes that the 3.40-3.41 GHz segment is designated for communications to and from amateur satellites. 47 CFR 97.207-97.211. The Commission seeks comment on: the extent to which the band is used for this purpose, whether existing satellites can operate on other amateur satellite bands, and on an appropriate timeframe for terminating these operations in this band.

The Commission also seeks comment generally on the transition mechanism and process for relocating existing non-federal users. How can the Commission expedite and incentivize the transition of existing operations? What is a reasonable timeframe to transition the operations? Should these licenses sunset at the end of the existing license term, or at another date certain? What are the potential costs to non-federal incumbent licensees to relocate their operations to another band as compared to the benefits of preparing the band for future shared use? What technical characteristics of non-federal licensee's equipment should factor into our relocation considerations (e.g., tunability, bandwidth, operational power, etc.)? How should non-federal incumbent licensees be compensated for their relocation costs? Should their current status, i.e.,

secondary to Federal radiolocation services, factor into any relocation considerations, including cost reimbursement?

PROCEDURAL MATTERS

Ex Parte Rules. The proceeding this NPRM initiates shall be treated as a “permit-but-disclose” proceeding in accordance with the Commission’s *ex parte* rules. 47 CFR 1.1200 *et seq.* Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the ex parte presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter’s written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (*e.g.*, .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission’s *ex parte* rules.

Comment Filing Procedures. Pursuant to §§ 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS). *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://apps.fcc.gov/ecfs/>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

INITIAL REGULATORY FLEXIBILITY ACT ANALYSIS

As required by the Regulatory Flexibility Act of 1980 (RFA), the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the policies and rules proposed in the NPRM. It requests written public comment on the IRFA, contained at Appendix B to the NPRM. Comments must be filed in accordance with the same deadlines as comments filed in response to the NPRM as set forth on the first page of this document, and have a separate and distinct heading designating them as responses to the IRFA. The Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, will send a copy of the NPRM, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.

INITIAL PAPERWORK REDUCTION ANALYSIS

This document contains proposed information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget (OMB) to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4), the Commission seeks specific comment on how it might further reduce the information collection burden for small business concerns with fewer than 25 employees.

ORDERING CLAUSES

IT IS ORDERED, pursuant to the authority found in sections 1, 2, 4(i), 303, 316, and 1502 of the Communications Act of 1934, 47 U.S.C. 151, 152, 154(i), 303, 316, and 1502, and section 1.411 of the Commission's Rules, 47 CFR 1.411, that this Notice of Proposed Rulemaking IS HEREBY ADOPTED.

IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

List of Subjects

47 CFR Part 2

Table of Frequency Allocations, Telecommunications.

47 CFR Part 90

Radio.

47 CFR Part 97

Radio, Satellites.

Federal Communications Commission.

Cecilia Sigmund,
Federal Register Liaison Officer,
Office of the Secretary.

Proposed Rules

For the reasons discussed in the preamble, the Federal Communications Commission proposes to amend 47 CFR parts 2, 90, and 97 as follows:

PART 2—FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

1. The authority citation for part 2 continues to read as follows:

Authority: 47 U.S.C. 154, 302a, 303, and 336, unless otherwise noted.

2. Section 2.106, the Table of Frequency Allocations, is amended as follows:
 - a. Pages 40 and 41 are revised.
 - b. In the list of United States (US) Footnotes, footnote US108 is revised.
 - c. In the list of Federal Government (G) Footnotes, footnotes G2 and G59 are revised.

§ 2.106 Table of Frequency Allocations.

The revisions read as follows:

* * * * *

2670-2690 FIXED 5.410 MOBILE except aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive)	2670-2690 FIXED 5.410 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.208B 5.415 MOBILE except aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive)	2670-2690 FIXED 5.410 FIXED-SATELLITE (Earth-to-space) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-to-space) 5.351A 5.419 Earth exploration-satellite (passive) Radio astronomy Space research (passive)			
5.149 5.412	5.149	5.149	US205	US385	
2690-2700 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)			2690-2700 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive)		
5.340 5.422			US246		
2700-2900 AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation			2700-2900 METEOROLOGICAL AIDS AERONAUTICAL RADIONAVIGATION 5.337 US18 Radiolocation G2	2700-2900	Aviation (87)
5.423 5.424			5.423 G15	5.423 US18	
2900-3100 RADIOLOCATION 5.424A RADIONAVIGATION 5.426			2900-3100 RADIOLOCATION 5.424A G56 MARITIME RADIONAVIGATION	2900-3100 MARITIME RADIONAVIGATION Radiolocation US44	Maritime (80) Private Land Mobile (90)
5.425 5.427			5.427 US44 US316	5.427 US316	
3100-3300 RADIOLOCATION Earth exploration-satellite (active) Space research (active)			3100-3300 RADIOLOCATION G59 Earth exploration-satellite (active) Space research (active)	3100-3300 Earth exploration-satellite (active) Space research (active) Radiolocation	Private Land Mobile (90)
5.149 5.428			US342	US342	
3300-3400 RADIOLOCATION	3300-3400 RADIOLOCATION Amateur Fixed Mobile	3300-3400 RADIOLOCATION Amateur	3300-3500 RADIOLOCATION	3300-3500	
5.149 5.429 5.429A 5.429B 5.430	5.149 5.429C 5.429D	5.149 5.429 5.429E 5.429F			
3400-3600 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.430A Radiolocation	3400-3500 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.431A 5.431B Amateur Radiolocation 5.433	3400-3500 FIXED FIXED-SATELLITE (space-to-Earth) Amateur Mobile 5.432 5.432B Radiolocation 5.433			
5.431	5.282	5.282 5.432A	US342	US342	

International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
(See previous page)	3500-3600 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.431B Radiolocation 5.433	3500-3600 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.433A Radiolocation 5.433	3500-3550 RADIOLOCATION AERONAUTICAL RADIONAVIGATION (ground-based) G110	3500-3550	
			3550-3650 RADIOLOCATION G59 AERONAUTICAL RADIONAVIGATION (ground-based) G110	3550-3600 FIXED MOBILE except aeronautical mobile US105 US433	Citizens Broadband (96)
3600-4200 FIXED FIXED-SATELLITE (space-to-Earth) Mobile	3600-3700 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.434 Radiolocation 5.433	3600-3700 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile Radiolocation	US105 US107 US245 US433	3600-3650 FIXED FIXED-SATELLITE (space-to-Earth) US107 US245 MOBILE except aeronautical mobile US105 US433	Satellite Communications (25) Citizens Broadband (96)
		5.435	3650-3700	3650-3700 FIXED FIXED-SATELLITE (space-to-Earth) NG169 NG185 MOBILE except aeronautical mobile US109 US349	
	3700-4200 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile		3700-4200	3700-4200 FIXED FIXED-SATELLITE (space-to-Earth) NG457A	Satellite Communications (25) Fixed Microwave (101)
4200-4400 AERONAUTICAL MOBILE (R) 5.436 AERONAUTICAL RADIONAVIGATION 5.438 5.437 5.439 5.440			4200-4400 AERONAUTICAL RADIONAVIGATION 5.440 US261		Aviation (87)
4400-4500 FIXED MOBILE 5.440A			4400-4940 FIXED MOBILE	4400-4500	
4500-4800 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE 5.440A				4500-4800 FIXED-SATELLITE (space-to-Earth) 5.441 US245	
4800-4990 FIXED MOBILE 5.440A 5.441A 5.441B 5.442 Radio astronomy			US113 US245 US342	4800-4940 US113 US342	
5.149 5.339 5.443			4940-4990	4940-4990 FIXED MOBILE except aeronautical mobile	Public Safety Land Mobile (90Y)
4990-5000 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) 5.149			5.339 US342 US385 G122	5.339 US342 US385	
			4990-5000 RADIO ASTRONOMY US74 Space research (passive) US246		

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UNITED STATES (US) FOOTNOTES

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US108 In the band 10-10.5 GHz, survey operations, using transmitters with a peak power not to exceed five watts into the antenna, may be authorized for Federal and non-Federal use on a secondary basis to other Federal radiolocation operations.

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FEDERAL GOVERNMENT (G) FOOTNOTES

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G2 In the bands 216.965-216.995 MHz, 420-450 MHz (except as provided for in G129), 890-902 MHz, 928-942 MHz, 1300-1390 MHz, 2310-2390 MHz, 2417-2450 MHz, 2700-2900 MHz, 5650-5925 MHz, and 9000-9200 MHz, use of the Federal radiolocation service is restricted to the military services.

* * * * *

G59 In the bands 902-928 MHz, 3100-3300 MHz, 3550-3650 MHz, 5250-5350 MHz, 8500-9000 MHz, 9200-9300 MHz, 13.4-14.0 GHz, 15.7-17.7 GHz and 24.05-24.25 GHz, all Federal non-military radiolocation shall be secondary to military radiolocation, except in the sub-band 15.7-16.2 GHz airport surface detection equipment (ASDE) is permitted on a co-equal basis subject to coordination with the military departments.

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PART 90—PRIVATE LAND MOBILE RADIO SERVICES

3. The authority citation for part 90 continues to read as follows:

Authority: 47 U.S.C. 154(i), 161, 303(g), 303(r), 332(c)(7), 1401-1473.

§ 90.103 [Amended]

4. In § 90.103, amend the table in paragraph (b) by removing the entries of “3300 to 3500” MHz and “3500 to 3550” MHz bands.

PART 97—AMATEUR RADIO SERVICE

5. The authority citation for part 97 continues to read as follows:

Authority: 47 U.S.C. 151-155, 301-609, unless otherwise noted.

6. In § 97.207, revise paragraph (c)(2) to read as follows:

§ 97.207 Space station.

* * * * *

(c) * * *

(2) The 7.0-7.1 MHz, 14.00-14.25 MHz, 144-146 MHz, 435-438 MHz, 2400-2450 MHz, 5.83-5.85 GHz, 10.45-10.50 GHz, and 24.00-24.05 GHz segments.

* * * * *

7. In § 97.209, revise paragraph (b)(2) to read as follows:

§ 97.209 Earth station.

* * * * *

(b) * * *

(2) The 7.0-7.1 MHz, 14.00-14.25 MHz, 144-146 MHz, 435-438 MHz, 1260-1270 MHz and 2400-2450 MHz, 5.65-5.67 GHz, 10.45-10.50 GHz and 24.00-24.05 GHz segments.

8. In § 97.211, revise paragraph (c)(2) to read as follows:

§ 97.211 Space telecommand station.

* * * * *

(c) * * *

(2) The 7.0-7.1 MHz, 14.00-14.25 MHz, 144-146 MHz, 435-438 MHz, 1260-1270 MHz and 2400-2450 MHz, 5.65-5.67 GHz, 10.45-10.50 GHz and 24.00-24.05 GHz segments.

9. In § 97.301, revise the table in paragraph (a) to read as follows:

§ 97.301 Authorized frequency bands.

(a) ***

Wavelength band	ITU Region 1	ITU Region 2	ITU Region 3	Sharing requirements <i>see</i> §97.303 (paragraph)
VHF	MHz	MHz	MHz	
6 m	-	50-54	50-54	(a)
2 m	144-146	144-148	144-148	(a), (k)
1.25 m	-	219-220	-	(l)
Do	-	222-225	-	(a)
UHF	MHz	MHz	MHz	
70 cm	430-440	420-450	430-440	(a), (b), (m)
33 cm	-	902-928	-	(a), (b), (e), (n)
23 cm	1240-1300	1240-1300	1240-1300	(b), (d), (o)
13 cm	2300-2310	2300-2310	2300-2310	(d), (p)
Do	2390-2450	2390-2450	2390-2450	(d), (e), (p)
SHF	GHz	GHz	GHz	
5 cm	5.650-5.850	5.650-5.925	5.650-5.850	(a), (b), (e), (r)
3 cm	10.0-10.5	10.0-10.5	10.0-10.5	(a), (b), (k)
1.2 cm	24.00-24.25	24.00-24.25	24.00-24.25	(b), (d), (e)
EHF	GHz	GHz	GHz	

6 mm	47.0-47.2	47.0-47.2	47.0-47.2	
4 mm	76-81	76-81	76-81	(c), (f), (s)
2.5 mm	122.25- 123.00	122.25- 123.00	122.25- 123.00	(e), (t)
2 mm	134-141	134-141	134-141	(c), (f)
1 mm	241-250	241-250	241-250	(c), (e), (f)
	Above 275	Above 275	Above 275	(f)

10. In § 97.303, revise paragraphs (b) and (f) and remove and reserve paragraph (q) as follows:

§ 97.303 Frequency sharing requirements.

* * * * *

(b) Amateur stations transmitting in the 70 cm band, the 33 cm band, the 23 cm band, the 5 cm band, the 3 cm band, or the 24.05-24.25 GHz segment must not cause harmful interference to, and must accept interference from, stations authorized by the United States Government in the radiolocation service.

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(f) Amateur stations transmitting in the following segments must not cause harmful interference to radio astronomy stations: 76-81 GHz, 136-141 GHz, 241-248 GHz, 275-323 GHz, 327-371 GHz, 388-424 GHz, 426-442 GHz, 453-510 GHz, 623-711 GHz, 795-909 GHz, or 926-945 GHz. In addition, amateur stations transmitting in the following segments must not cause harmful interference to stations in the Earth exploration-satellite service (passive) or the space research service (passive): 275-286 GHz, 296-306 GHz, 313-356 GHz, 361-365 GHz, 369-392 GHz, 397-399 GHz, 409-411 GHz, 416-434 GHz, 439-467 GHz, 477-502 GHz, 523-

527 GHz, 538-581 GHz, 611-630 GHz, 634-654 GHz, 657-692 GHz, 713-718 GHz, 729-733 GHz, 750-754 GHz, 771-776 GHz, 823-846 GHz, 850-854 GHz, 857-862 GHz, 866-882 GHz, 905-928 GHz, 951-956 GHz, 968-973 GHz and 985-990 GHz.

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(q) [Reserved]

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§ 97.305 [Amended]

11. In § 97.305, amend the SHF portion of the table in paragraph (c) by removing the entry of “9 cm band”.

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