FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 2, 25, 74, 78, 87, 90, 97, and 101

[ET Docket No. 23-120; RM-11785; FCC 25-60; FR ID 323350]

Implementation of the Final Acts of the World Radiocommunication Conference (Geneva, 2015) (WRC-15), Other Allocation Issues, and Related Rule Updates

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: In this document, the Federal Communications Commission (Commission or FCC) modifies the United States Table of Frequency Allocations (U.S. Table) in the Commission's rules to implement certain spectrum allocation decisions from the International Telecommunication Union's World Radiocommunication Conference's 2015 Final Acts, including those for amateur radio, satellite services, and for aural broadcast auxiliary and television broadcast auxiliary stations by revising the Commission's rules. These changes provide for increased domestic utilization of a range of spectrum in both satellite and terrestrial contexts.

DATES: This final rule is effective **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

FOR FURTHER INFORMATION CONTACT: Sebastian Garcia of the Office of Engineering and Technology, at Sebastian.Garcia@fcc.gov or 202-418-2932.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Report and Order, in ET Docket No. 23-120, RM-11785, FCC 25-60, adopted on September 23, 2025, and released on December 9, 2025. The full text of this document is available for public inspection and can be downloaded at https://docs.fcc.gov/public/attachments/FCC-25-60A1.pdf. Alternative formats are available for people with disabilities (Braille, large print, electronic files, audio format) by sending an email to *fcc504@fcc.gov* or calling the Commission's Consumer and Governmental Affairs Bureau at (202) 418–0530 (voice), (202) 418–0432 (TTY).

Regulatory Flexibility Act. The Regulatory Flexibility Act of 1980, as amended (RFA) requires that an agency prepare a regulatory flexibility analysis for notice and comment rulemakings, unless the agency

certifies that "the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities." Accordingly, the Commission has prepared a Final Regulatory Flexibility Analysis (FRFA) concerning the possible impact of the rule changes contained in the *Report and Order* on small entities. The FRFA is set forth in Appendix B, https://www.fcc.gov/document/fcc-adopts-final-rules-implementing-wrc-15.

Paperwork Reduction Act. This document does not contain new or modified information collection requirements subject to the Paperwork Reduction Act of 1995, Public Law 104-13. In addition, therefore, it does not contain any new or modified information collection burden "for small business concerns with fewer than 25 employees," pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, 44 U.S.C. 3506(c)(4).

Congressional Review Act. The Commission has determined, and the Administrator of the Office of Information and Regulatory Affairs, Office of Management and Budget, concurs, that this this rule is "major" under the Congressional Review Act, 5 U.S.C. 804(2). The Commission will send a copy of the *Third Report and Order* to Congress and the Government Accountability Office pursuant to 5 U.S.C. 801(a)(1)(A).

Synopsis

INTRODUCTION

By this document the Commission amends the United States Table of Frequency Allocations (U.S. Table) in the Commission's rules to implement certain radiofrequency (RF) allocation decisions in the Final Acts of the International Telecommunication Union (ITU) World Radiocommunication Conference 2015 (*WRC-15 Final Acts*), make other allocation changes in the U.S. Table that are not related to *WRC-15 Final Acts* implementation, and revise parts 2, 25, 74, 78, 87, 90, 97, and 101 of the rules to reflect the allocation changes.

In this document, the Commission implements certain spectrum allocation decisions from the *WRC-15 Final Acts*, which were proposed in the *WRC-15 Notice*, including those for amateur radio, satellite services, and for aural broadcast auxiliary and television broadcast auxiliary stations. The Commission's decisions are generally divided into space and terrestrial issues, along with other matters, as follows.

Satellite Issues

- Provide satellite-based search and rescue systems operating in the 406-406.1 MHz band with protection from out-of-band emissions from operations in adjacent bands by adding footnote US265 to the U.S. Table and revising section 90.265 to, *inter alia*, prohibit new fixed and mobile service frequency assignments in the adjacent 100 kilohertz bands at 405.9-406.0 MHz and 406.1-406.2 MHz. Revise footnote US13 and section 90.265 to prohibit new assignments for the frequencies 406.1250 and 406.1750 MHz, following the effective date of the rules in this proceeding.
- Allocate the 410-420 MHz band to the space research service (space-to-space) on a secondary basis for non-Federal use, limited to communications links with an orbiting, manned space vehicle and require compliance with a power flux-density limit at the Earth's surface to protect existing and future licensees.
- Provide for Global Flight Tracking by allocating the 1087.7-1092.3 MHz sub-band to the aeronautical mobile-satellite (route) service (Earth-to-space) on a primary basis for Federal and non-Federal use, limited to space station reception of existing automatic dependent surveillance broadcast (ADS-B) emissions from aircraft and addition of paragraph (a)(13) to section 25.202 of the Commission's rules to permit the licensing of space stations that can receive ADS-B emissions from aircraft.
- Add footnote US78 to the 960-1164 MHz band in the Federal Table and non-Federal Table portions of the U.S. Table to recognize federal use by military systems for Identification Friend or Foe operations on center frequencies 1030 MHz (for interrogators) and 1090 MHz (for transponders).
- Revise footnote US224 to require federal systems that utilize spread spectrum techniques for terrestrial communication, navigation, and identification in the 960-1215 MHz band be authorized on the condition that harmful interference not be caused to aeronautical mobile, aeronautical radionavigation, military identification friend or foe operations, aeronautical mobile satellite, and radionavigation satellites.

- Defer consideration of providing spectrum on a secondary basis for non-Federal Earth-to-space operations in the Earth exploration-satellite service in the 7190-7250 MHz band and the space research service in the 7190-7235 MHz band.
- Allocate the 9.2-9.3 GHz band and the 9.9-10.4 GHz band to the Earth exploration-satellite service (active) on a primary basis for Federal use and on a secondary basis for non-Federal use.
- Revise footnote US128 to support the Department of Defense's development of pulsed emissions systems in the 10-10.5 GHz band for the military services.
- Revise the rules for the 18.142-19.3 GHz, 28.5-29.1 GHz, and 29.25-29.5 GHz bands as follows. Update footnote US139 and the related service rules to reflect that incumbent fixed stations in the 18.3-19.3 GHz band no longer have primary status. Raise the secondary non-Federal fixed-satellite service (space-to-Earth) allocation in the 18.142-18.3 GHz band to co-primary status with the fixed service. Amend footnote US139 to allow certain fixed stations to continue to operate indefinitely under existing conditions; revise footnote NG62 to permit grandfathered fixed stations in the 28.5-29.1 GHz and 29.25-29.5 GHz bands to operate on a secondary basis to prioritize fixed-satellite services operating in the band.
- Delete the primary radionavigation-satellite service allocation from the 149.9-150.05 MHz and 399.9-400.05 MHz bands.

Terrestrial Issues

- Allocate the 5351.5-5366.5 kHz (60-meter) band to the amateur service on a secondary basis; continue to make available on a secondary basis the four existing channels outside of the 5351.5-5366.5 kHz band; and establish other operating guidelines for amateur use of the band.
- Update the coordination and contact information in US270 for amateur stations operating in previously defined areas of the 420-450 MHz (70 centimeter) band.
- Delete the broadcasting service allocation in the 700 MHz band.
- Delete footnote NG155 from section 2.106 as unnecessary and inapplicable under the Commission's current rules.

Other Matters

- Decline the addition of a new paragraph within section 2.102 of the Commission's rules to address certain space research service (deep space) allocations.
- Amend section 2.1(c) of the rules to add or revise definitions in accordance with those adopted at WRC-15. Revise the radiosonde definition in section 2.1(c) to correct a typographical error (i.e., correct "ballon" to read "balloon").
- Amend section 2.105(d) of the rules to clarify how the footnote references which appear in the U.S. Table are applicable to the allocated services in the U.S. Table.

BACKGROUND

The International Telecommunications Union (ITU) convenes a World Radiocommunication Conference (WRC) typically every three to four years to address international spectrum use. Specifically, the WRC allocates frequency bands to various radio services generally on either a worldwide or regional basis and enters these radio services in the ITU's Table of Frequency Allocations (which is reflected in section 2.106 of the Commission's rules as the International Table of Frequency Allocations) as part of the Radio Regulations. WRC-15 was held in Geneva, Switzerland from November 2 to November 27, 2015, with more than 40 topics addressed related to frequency allocation and sharing for spectrum and orbital resources, with the decisions ultimately published by the ITU as the *WRC-15 Final Acts*. On September 10, 2018, the National Telecommunications and Information Administration (NTIA) submitted its recommendations for national implementation of the *WRC-15 Final Acts* to the Commission. This was followed by the Commission's *WRC-15 Administrative Order*, which reflected the WRC-15 changes to the International Table and made other non-substantive, editorial changes to the Commission's rules, including revisions to the Federal Table that did not require notice and comment.

The actions taken herein reflect the Notice of Proposed Rulemaking (*WRC-15 Notice*), released on April 21, 2023, in which the Commission proposed to amend the Commission's rules to implement certain of the remaining allocation decisions from the ITU's *WRC-15 Final Acts* concerning portions of the radio spectrum between 5330.5 kHz and 29.5 GHz, make other allocation changes that are not related to *WRC-15 Final Acts* implementation, and update the Commission's service rules to reflect the allocation changes. As of November 28, 2023, the date that the reply comment period ended in this docket, the

Commission received 3,457 filings. Implementation decisions regarding WRC-15 allocations have also been made in other Commission proceedings.

SATELLITE ISSUES

Protection of Search and Rescue Satellites Receiving in the 406-406.1 MHz Band

The Commission's rules currently authorize Emergency-Position Indicating Radio Beacon, Emergency Locator Transmitter, and Personal Locator Beacon transmissions in the 406-406.1 MHz band to Federal government satellites that carry Search and Rescue Satellite (SARSAT) receivers. The National Oceanic and Atmospheric Administration (NOAA) operates polar orbiting and geostationary satellites that carry payloads providing distress alert and location information to appropriate public safety rescue authorities for maritime, aviation, and land users in distress.

The Commission adopts proposals addressing concerns that aggregate levels of electromagnetic interference, including interference from transmissions in adjacent frequency bands, are adversely affecting the operations of SARSAT receivers operating in the 406-406.1 MHz band. These proposals received no comment. First, the Commission adopts the Commission's proposal for a new footnote US265 in the U.S. Table (Federal and non-Federal portions) in section 2.106(a) for the 403-410 MHz band to prohibit new frequency assignments within the 405.9-406.0 MHz and 406.1-406.2 MHz bands under the fixed and mobile services allocations in the 403-406 MHz and 406.1-410 MHz bands. The Commission adopts its tentative conclusion that medical device radiocommunication service (MedRadio) operations currently allowed by footnote US64 will not interfere with SARSAT operations due to their ultra-low power generation. No commenter disagreed with this tentative conclusion. Accordingly, the Commission concludes that MedRadio devices can operate consistent with US265 and their secondary status within the band and the Commission does not believe that US265's prohibition of new frequency assignments within the 405.9-406.0 MHz and 406.1-406.2 MHz bands requires us to restrict MedRadio's continued use and growth within the 401-406 MHz band. The Commission also adopts its proposal which states that, in order to protect SARSAT devices, any radiosonde applicants seeking to operate in the band would need to take into account frequency drift characteristics when selecting operating frequencies above 405 MHz to avoid transmitting in the 406-406.1 MHz band and to take all practical steps to avoid the operating frequency drifting close to 406 MHz.

The Commission also adopts related proposals regarding fixed and mobile services in the adjacent 403-406 MHz and 406.1-410 MHz bands. These proposals also received no comment. First, in the *WRC-15 Notice*, the Commission proposed to revise footnote US13 and section 90.265 to state that, after the effective date of the final rules in this proceeding, no assignments for the frequencies 406.1250 MHz and 406.1750 MHz would be made, and that existing stations could continue to operate indefinitely on these frequencies as they are currently licensed. The Commission received no comment on this proposal and therefore revise footnote US13 and section 90.265 as proposed. The Commission believes that this action will ensure consistency with US265 and help protect SARSAT systems operating in the adjacent 406-406.1 MHz band from out-of-band emissions (OOBE) originating on the frequencies 406.1250 MHz and 406.1750 MHz. The Commission also adopts the Commission's proposal to update footnote US117 to reflect that non-federal use of the 406.1-410 MHz band is limited to the radio astronomy service and as provided by footnotes US13 and US55.

Space Research Service (space-to-space) in the 410-420 MHz Band

Current use of the 410-420 MHz band is limited to the fixed, mobile, and space research (space-to-space) services on a primary basis for Federal use, with non-Federal use limited to MedRadio operations in the 413-419 MHz segment of the band. As proposed in the *WRC-15 Notice*, the Commission allocates the 410-420 MHz band to the space research service (space-to-space) on a secondary basis for non-Federal use. The Commission also adopts footnote 5.268 in the non-Federal portion of the U.S. Table in the 410-420 MHz band. Footnote 5.268 limits the use of the space research service to space-to-space communication links with an orbiting, manned space vehicle, and requires compliance with a power flux density (PFD) limit at the Earth's surface of -153 to -148 dBw/m^2 in a 4-kilohertz bandwidth, depending on the angle of arrival of the radio-frequency wave, to protect existing and future fixed and mobile services operations from harmful interference.

These proposals received no comment and the Commission concludes that allocating the 410-420 MHz band to the space research service (space-to-space) on a secondary basis for non-Federal use will support both increased commercial exploration of the deep space environment and protect primary Federal operations in this band. Additionally, the adoption of footnote 5.268 restricts the use of this band

to communications links with an orbiting, manned space vehicle and limits the PFD at Earth's surface, which will protect stations of the primary fixed and mobile services bands from harmful interference.

Global Flight Tracking for Civil Aviation (1087.7-1092.3 MHz)

The Commission adopts proposals intended to enhance global flight tracking capabilities. First the Commission adopts its proposal to allocate the 1087.7-1092.3 MHz band to the aeronautical mobile-satellite (route) service (Earth-to-space) on a primary basis for Federal and non-Federal use, limited to space station reception of automatic dependent surveillance-broadcast (ADS-B) emissions from aircraft by referencing footnote 5.328AA in the 960-1164 MHz band within the U.S. Table. ADS-B is a service that automatically broadcasts GPS-derived data on the location, velocity, altitude, heading, and other performance metrics, of an ADS-B-equipped aircraft to other ADS-B-equipped aircraft and ground stations for distribution to air traffic control systems. Pursuant to Federal Aviation Administration regulations, after January 1, 2020, virtually all aircraft must be able to transmit ADS-B information (ADS-B Out) to fly in most controlled airspace. For aircraft that operate above 18,000 feet or need to comply with ADS-B requirements outside the United States, the equipment must operate on the frequency 1090 MHz using what are often referred to as 1090ES transponders. All other aircraft may carry equipment operating either on frequency 978 MHz or frequency 1090 MHz. In 2006, the Commission adopted technical and operational rules for ADS-B transmissions on 978 MHz using Universal Access Transceiver (UAT) technology. While the Commission authorized the use of the frequency 1090 MHz by aeronautical utility mobile stations used for airport surface detection in 2013, it has not adopted technical and operational rules specifically for airborne ADS-B transmissions on 1090 MHz. However, part 87 accommodates the use of 1090 MHz aeronautical utility mobile stations as airborne electronic aids to navigation in the 960-1215 MHz band.

The Commission adopts the proposed implementation of the primary aeronautical mobile-satellite (route) service allocation, limited to space station reception of automatic dependent surveillance-broadcast (ADS-B) emissions from aircraft, by referencing footnote 5.328AA in the 960-1164 MHz band within the U.S. Table (Federal and non-Federal Tables). Under section 87.5 in the Commission's aviation service rules, ADS-B is currently defined as broadcast transmissions from aircraft, supporting aircraft-to-aircraft or aircraft-to-ground surveillance applications, including position reports, velocity vector, intent

and other relevant information about the aircraft. To reflect this enhanced ADS-B capability in the aviation service rules, the Commission modifies the definition of ADS-B in section 87.5 to include space station reception of automatic dependent surveillance-broadcast (ADS-B) emissions from aircraft in the 1087.7-1092.3 MHz band. Additionally, the Commission adds paragraph (a)(13) to section 25.202 of the Commission's rules to permit the licensing of space stations that can receive ADS-B emissions in the 1087.7-1092.3 MHz band from aircraft. The new primary aeronautical mobile-satellite (route) service (Earth-to-space) allocation that the Commission adds in section 2.106(a) will extend reception of ADS-B signals beyond terrestrial line-of-sight to facilitate reporting the position of aircraft located anywhere in the world. As aircraft travel over land, there are generally terrestrial networks capable of forwarding this information to flight control centers. When travelling over an ocean or other remote regions, however, space stations can provide an alternative ADS-B point of reception.

Iridium, in its comments, supports the Commission's proposal to create a primary allocation in the band for Earth-to-space ADS-B transmissions from aircraft. Further, Iridium suggests that the Commission should automatically upgrade to primary status existing Earth-to-space authorizations in the band, such as those in its second-generation satellite authorization. No commenter opposed this proposal.

The Commission agrees with Iridium and conclude that providing a primary allocation for satellite reception of ADS-B signals from aircraft-in-flight would ensure the efficient management of air traffic in oceanic, polar, and remote airspace. The use of ADS-B directly influences many factors, such as the minimum separation distances between aircraft, resulting in the efficient use of airspace, optimization of air routes, and altitude availability due to events such as changes in weather conditions. Regarding Iridium's request that existing Earth-to-space operations in this band, such as those in Iridium's second-generation satellite authorization, automatically be upgraded to primary status, the Commission directs Iridium to the terms of its waiver grant. Specifically, the Commission stated as a condition of licensing Iridium's second-generation satellites that "[o]perations in the 156.0125- 162.0375 MHz and 1087.7-1092.3 MHz bands must be in accordance with any Commission rulemakings subsequent to the release of this Order and Authorization that implement any new domestic allocations or service rules for these bands." As the Commission's rule today allocates the 1087.7-1092.3 MHz band to the aeronautical mobile-satellite (route) service (Earth-to-space) on a primary basis for Federal and non-

Federal use, Iridium's existing ADS-B satellite operations in this band would, under the terms of the waiver, also attain primary status within this band.

As proposed, the Commission also adds new footnote US78 to the 960-1164 MHz band in the U.S. Table in section 2.106(a) to recognize Federal use by military systems for Identification Friend or Foe (IFF) operations on center frequencies 1030 MHz (for interrogators) and 1090 MHz (for transponders). This proposal, suggested by NTIA, did not result in any comments. This use will be subject to the condition that harmful interference not be caused to the aeronautical radionavigation service or the aeronautical mobile (R) service. The Commission believes that this use will enhance the ability of military aircraft to determine whether other aircraft are friendly in nature.

Lastly, as proposed, the Commission revises footnote US224 to require Federal systems that utilize spectrum spread techniques for terrestrial communication, navigation, and identification in the 960-1215 MHz band be authorized on the condition that harmful interference not be caused to the aeronautical mobile (route) and aeronautical radionavigation services in the 960-1164 MHz band, Federal IFF systems on center frequencies 1030/1090 MHz, aeronautical mobile-satellite (route) service (Earth-to-space) in the 1087.7-1092.3 MHz band, and the aeronautical radionavigation and radionavigation-satellite (space-to-Earth) (space-to-space) services in the 1164-1215 MHz band. The Commission believes that this footnote revision is necessary to protect the increased number of services operating in the aforementioned bands. Although updates to its part 87 rules were not specifically proposed in the *WRC-15 Notice*'s rule parts list, the Commission did request comment on whether modifications to its part 87 rules were necessary to implement any of the proposed changes. The Commission received no comment but conclude that, in order to fully implement its decision, the Commission must revise section 87.479 of the Commission's rules to reflect the additional aviation services that will now be entitled to protection that footnote US224 provides to part 87 radionavigation services in the 960-1215 MHz band.

Satellite Uplinks in the 7190-7250 MHz Band

In the *WRC-15 Notice*, as recommended by NTIA, the Commission sought comment on whether it should provide spectrum on a secondary basis for non-Federal Earth-to-space operations for the Earth exploration-satellite service in the 7190-7250 MHz band and the space research service in the 7190-7235 MHz band. In the U.S. Table, the 7190-7235 MHz band is allocated to the Earth exploration-satellite

(Earth-to-space) and fixed services, both on a primary basis and exclusively for Federal use. The 7190-7235 MHz portion of the band is also allocated on a primary basis to the space research services (Earth-to-space) exclusively for Federal use. For the reasons discussed below, the Commission declines to address these spectrum bands herein and are deferring a decision for future Commission action.

The Commission specifically sought comment on making these Federal uplink bands available for non-Federal use on a secondary basis for Earth-to-space operations in the Earth exploration-satellite and space research services by adding footnotes US460 and US460A to the 7190-7235 MHz band and footnote US460A to the 7235-7250 MHz band. Footnote US460 would provide a secondary non-Federal allocation in the 7190-7235 MHz band for the space research service (Earth-to-space) and would prohibit emissions from such systems intended for deep space. Footnote US460A would allocate the 7190-7250 MHz band to the Earth exploration-satellite service (Earth-to-space) on a secondary basis for non-Federal use, limited to tracking, telemetry, and command (TT&C) for the operation of spacecraft. Commenters express concern with these proposals. NCTA, in its comments, states that "[t]he circumstances of the 7/8 GHz range have changed significantly since the Commission issued the NPRM in April 2023 and even more since NTIA made its original recommendation to the Commission in 2018. Qualcomm states that moving now to allocate these sub-bands "would further complicate the spectral landscape that has been earmarked for domestic study and potentially international studies under the ITU-R working groups."

Multiple commenters cite the National Spectrum Strategy (NSS) to assert that additional allocations in the 7/8 GHz band could complicate future allocation decisions. One of the spectrum bands identified is the 7125-8400 MHz band, which the NSS states "will be studied for wireless broadband use" (on a licensed and/or unlicensed basis), though, as NTIA states in the strategy, "some sub-bands eventually may be studied for other uses." It goes on to state that there are a variety of mission-critical Federal operations in this band (including Fixed, Fixed Satellite, Mobile, Mobile-Satellite, Space Research, Earth Exploration-Satellite, and Meteorological-Satellite Services) that would make it challenging to repurpose portions of the band while protecting incumbents from harmful interference.

CTIA states that any proposal to allocate the "7190-7235 MHz band to the Space Research Service and the 7190-7235 MHz band to the Earth Exploration Satellite-Service on a secondary basis for non-Federal use has been overcome by the NSS and a series of additional events since WRC-15's

conclusion and NTIA's submission to the Commission of its *WRC-15 Final Acts* implementation recommendations." CTIA goes on to state that the 7/8 GHz spectrum range is vital "to the 7-16 GHz band that Chairwoman Rosenworcel has identified for 6G and that the ITU is expected to explore this spectrum range for next-generation wireless deployments." T-Mobile states that the Commission should refrain from taking any action that would "limit its options regarding the use of these bands for future wireless services."

Lockheed Martin, however, states in its comments that "implementing only a secondary non-Federal allocation domestically [in support of deep-space operations] poses the risk of rendering the band unusable for future non-Federal operations absent adequate protections." Lockheed encourages the Commission to instead make the allocation on a primary basis in the Table of Allocations.

In light of ongoing governmental workstreams reviewing the band, changes in the spectral environment, and opposition from stakeholders across multiple sectors, the Commission finds it premature to reach a decision at this time on additional allocations in this band. The Senate Commerce Committee's budget reconciliation bill proposes that the NTIA conduct a timely spectrum analysis of the 7.25-7.4 GHz band in support of the House's budget reconciliation bill which outlines the Administration's effort to identify and auction 600 megahertz of spectrum for advanced mobile and fixed broadband services. Lawmakers have identified the 7/8 GHz band in particular as warranting consideration for future spectrum auctions. While the Commission recognizes the importance of the space exploration mission being undertaken by NASA and its commercial partners, the information received in the record indicates that moving ahead with allocations in these bands at this time could complicate studies of the bands for advanced wireless uses.

Earth Exploration-Satellite Service (Active) in the 9.2-9.3 GHz and 9.9-10.4 GHz Bands

The Commission adopts its proposals to allocate the 9.2-9.3 GHz and 9.9-10.4 GHz bands to the Earth exploration-satellite service (active) on a primary basis for Federal use and on a secondary basis for non-Federal use, subject to four footnotes: 5.474A, 5.474B, 5.474C, and US474D. These proposals would implement WRC-15's expansion of the current worldwide Earth exploration-satellite service (active) allocation in the 9.3-9.9 GHz band by allocating an additional 600 megahertz of spectrum in the adjacent bands to this service and support the growing demand for greater image resolution to satisfy

global environmental monitoring requirements while protecting adjacent-bands services from any interference issues this increase in usage may cause. Spaceborne radars operating in this band support a large number of scientific and geoinformation applications, such as disaster relief and humanitarian aid, land use, and large area coastal surveillance.

In the *WRC-15 Notice*, the Commission sought comment on whether to allocate the 9.2-9.3 GHz and 9.9-10.4 GHz bands to the Earth exploration-satellite service (active) on a primary basis for Federal use and on a secondary basis for non-Federal use, subject to the conditions of four footnotes added to the 9.2-9.3 GHz and 9.9-10.4 GHz bands (5.474A, 5.474B, 5.474C, and US474D). Footnote 5.474A limits the use of the 9.2-9.3 GHz and 9.9-10.4 GHz bands to systems in the Earth exploration satellite service (active) requiring a necessary bandwidth greater than 600 megahertz that cannot be fully accommodated within the 9.3-9.9 GHz band. Footnote 5.474B states that stations in the Earth exploration-satellite service (active) shall comply with Recommendation ITU-R RS.2066-0 (WRC-15), which provides an operational procedure to avoid main-beam to main-beam coupling between Earth exploration-satellite service systems when transmitting near 9.6 GHz and radio astronomy service stations performing observations in the 10.6-10.7 GHz band. Footnote 5.474C states that stations operating in the Earth exploration-satellite (active) service shall comply with Recommendation ITU-R RS.2065-0 (WRC-15), which provides mitigation techniques that can reduce the unwanted emissions of Earth exploration-satellite service (active) systems to avoid interference with space research service (space-to-Earth) links in the 8.40-8.45 GHz and 8.45-8.50 GHz bands. Lastly, footnote US474D (based partially on footnote 5.474D) would require that stations in the Earth exploration-satellite service (active) not cause harmful interference to, or claim protection from, the maritime radionavigation service in the 9.2-9.3 GHz band and the radiolocation service in the 9.9-10.4 GHz band. The Commission also sought comment on whether the 9.2-9.8 GHz and 9.9-10.4 GHz bands should be allocated to the Earth exploration satellite-service (active) on a primary basis for non-Federal use, so that the status of those non-Federal allocations would mirror the status of the Federal Earth exploration satellite-services (active) in those bands. The Commission received no comment on these proposals.

The Commission adopts the proposal to allocate the 9.2-9.3 GHz and 9.9-10.4 GHz bands to the Earth exploration satellite-service (active) on a primary basis for Federal use and on a secondary basis for

non-Federal use, subject to the four aforementioned footnotes (5.474A, 5.474B, 5.474C, US474D). The Commission believes that this allocation will support the growing demand for scientific and geoinformation applications for both the Federal and non-Federal operations. Further, the application of the four footnotes to these bands will protect adjacent services from any interference issues this increase in usage may cause. Lastly, the Commission declines to adopt its proposal to allocate the 9.2-9.8 GHz and the 9.9-10.4 GHz bands to the Earth exploration satellite-service (active) on a primary basis for non-Federal use so the status of these allocations would mirror the status of the primary Federal Earth exploration satellite-service (active) allocations in these bands, as the Commission believes that the non-Federal secondary allocation the Commission adopts today in the 9.2-9.3 GHz and 9.9-10.4 GHz bands will provide non-Federal users with sufficient bandwidth for their operations. Declining to raise the status of the secondary non-Federal Earth exploration satellite-service (active) allocations in these bands to primary status will also help protect adjacent-band operations from harmful interference, as the proposed non-Federal primary allocation was not subject to footnotes 5.474A, 5.474B, 5.474C, and US474D, which the *WRC-15 Final Acts* prescribed to protect adjacent services from increased EESS usage in the 9.2-9.3 GHz and 9.9-10.4 GHz bands.

The Commission also proposed to revise footnote US128 to support the Department of Defense's (DOD) development of pulsed emissions systems for the military services in the 10-10.5 GHz band. The 10-10.5 GHz band is currently allocated to the radiolocation service on a primary basis for Federal use; the 10-10.45 GHz band is allocated to the amateur and radiolocation services on a secondary basis for non-Federal use; the 10.45-10.5 GHz band is allocated to the amateur, amateur-satellite, and radiolocation services on a secondary basis for non-Federal use; and the 9.975-10.025 GHz band is allocated to the meteorological-satellite service on a secondary basis for use by weather radars for Federal and non-Federal use. US128 currently prohibits pulsed emissions in the 10-10.5 GHz band, except for weather radars onboard meteorological satellites in the 10-10.025 GHz sub-band. The Commission received no comments on this proposal and revise footnote US128 to permit DOD's development of pulsed emissions systems for the military services in the 10-10.5 GHz band to help meet future system needs.

Revision of the 18.142-19.3 GHz, 28.5-29.1 GHz, and 29.25-29.5 GHz Bands

The Commission sought comment in the *WRC-15 Notice* on revising footnote NG62 to permit grandfathered fixed stations in the 28.5-29.1 GHz and 29.25-29.5 GHz bands to operate on a secondary basis; updating footnote US139 and the related service rules to reflect that incumbent fixed stations in the 18.3-19.3 GHz band no longer have primary status; raising the secondary non-Federal fixed-satellite service (space-to-Earth) allocation in the 18.142-18.3 GHz band to co-primary status with the fixed service; and amending US139 to allow certain fixed stations to continue to operate indefinitely under existing conditions.

First, the Commission revises footnote NG62 to permit grandfathered fixed stations to operate on a secondary basis in the 28.5-29.1 GHz and 29.25-29.5 GHz bands, which prioritizes fixed-satellite services operating in the band. Footnote NG62 currently states that, in the 28.5-29.1 GHz and 29.25-29.5 GHz bands, stations in the fixed-satellite service shall not cause harmful interference to, or claim protection from, stations in the fixed service operating under 18 listed call signs. The Commission proposed to amend footnote NG62 to permit fixed stations authorized pursuant to the 10 listed call signs that currently operate in these bands to continue to operate indefinitely on a secondary basis. The Commission adopted NG62 when it deleted the primary fixed and mobile service allocations from the 28.35-29.1 GHz and 29.25-29.5 GHz bands in the non-Federal Table of Frequency Allocations. The Commission additionally notes that the Commission's rules permit earth stations in motion (ESIMs) to operate in these frequency bands. The proposed secondary status of these fixed stations would recognize that ESIMs, which may operate anywhere without coordination with the fixed stations, may cause intermittent interference to these fixed stations. Only one commenter, Iridium, addresses this proposal. Iridium contends that when the Commission adopted its Ka-band (29.1-29.5 GHz) plan in 2017, it plainly intended for the band to be used primarily for satellite feeder links. Iridium further states that the proposal would clearly establish the status of the grandfathered terrestrial stations by stating that they are secondary to satellite operations in the 29.1-29.5 GHz band. Given the fact that only 10 of the 18 legacy fixed stations continue to operate in the band, amending NG62 to prioritize satellite operations ultimately rationalizes the relative priorities for services in the 28.5-29.1 GHz and 29.25-29.5 GHz bands.

As proposed, the Commission amends footnote US139 to state that, in the 18.3-19.3 GHz band, earth station licensees in the fixed-satellite service (space-to-earth) may require that licensees of

grandfathered stations in the fixed service cease operations, consistent with the provisions in section 101.95 of the Commission's rules. The Commission made this proposal because, in the 18.3-19.3 GHz band, there is no fixed service allocation and there are no longer any primary grandfathered fixed stations. The Commission also proposed to revise sections 74.502(c), 74.602(g), 78.18(a)(4), and 101.147(r) of the rules in order to update the introductory text and the frequencies that are available to applicants of aural broadcast auxiliary stations, television broadcast auxiliary stations, cable television relay service, and fixed microwave services, respectively. While most of the proposed changes would remove channels that are no longer allocated to the fixed service, in one instance the Commission proposed to add replacement channels, i.e., the Commission proposed replacing the 12 frequency pairs in section 74.502(c)(1)(i) of the rules with the 5-megahertz channels from section 101.147(r)(5). The Commission also proposed to update sections 101.95(a) and 101.147(a) to remove expired text and to remove sections 101.83 through 101.91 and 101.97, which concern expired policies governing fixed service relocation from the 18.3-19.3 GHz band. The Commission received no comment on these proposals and, due to the absence of both a fixed allocation and the lack of any primary grandfathered fixed stations operating in the band, the Commission amends its rules to update the 18.3-18.9 GHz band as proposed. The Commission will also revise sections 74.502(c), 74.602(g), 78.18(a)(4), and 101.147(r) of the rules in order to update the introductory text and the frequencies that are available to applicants of aural broadcast auxiliary stations, television broadcast auxiliary stations, cable television relay service, and fixed microwave services. Lastly, the Commission will adopt its proposal to replace the 12 frequency pairs in section 74.502(c)(1)(i) of the rules with 5-megahertz channels from section 101.147(r)(5), as well as make the aforementioned updates to section 101.91 and 101.97 to remove expired language.

The Commission also adopts its proposal to raise the non-Federal, secondary fixed-satellite service (space-to-Earth) allocation in the 18.142-18.3 GHz band to co-primary status (co-equal with the non-Federal fixed service allocation in the band). This upgrade in allocation status provides receiving earth stations with interference protection from later-licensed fixed stations used for part 74 and part 101 Multichannel Video Programming Distributor (MVPD) and part 78 cable television relay service (CARS) operations that operate in accordance with the proposed rules in this section. The Commission received no comment on this proposal and adopt it based on its conclusion that this upgrade in allocation status

will result in earth station's using this band more intensely and enhanced spectrum efficiency. This action to raise the non-Federal secondary FSS (space-to-Earth) allocation in the 18.142-18.3 GHz band to primary status also aligns with NTIA's recommendation in the 18 GHz Band Report, which identified the 18 GHz band for expanded Federal and non-Federal satellite operations, consistent with the U.S. position at WRC-23.

Lastly, the Commission sought comment on whether it should allow continued operation of existing CARS licenses that authorize operation in the 18.3-18.304 GHz and 18.3-18.334 GHz bands in Puu Nianiau, Hawaii, and Placerville, California, respectively, and to revise footnote US139 to codify that these fixed stations may continue to operate indefinitely under existing conditions. Again, the Commission received no comment on these proposals and thereby allow continued operation of the aforementioned fixed stations and codify footnote US139, allowing continued, indefinite operation of these stations under existing conditions.

Deletion of the Radionavigation-Satellite Service from the 149.9-150.05 MHz and 399.9-400.05 MHz Bands

Consistent with the *WRC-15 Final Acts* and as proposed in the *WRC-15 Notice*, the Commission remove the radionavigation-satellite service allocation in the 149.9-150.05 MHz and 399.9-400.05 MHz bands from the Federal and non-Federal portions of the U.S. Table. These two bands are allocated to the mobile-satellite service (Earth-to-space) and the radionavigation-satellite service, both on a primary basis, for Federal and non-Federal use. The *WRC-15 Final Acts* deleted the radionavigation-satellite service allocations from the International Table in these bands because they expired on January 15, 2015, pursuant to footnote 5.224B. The Commission received no comment on this proposal. A search of the Commission's International Communications Filing System (ICFS) database revealed that that there are no RNSS licensees in the two bands. Thus, the Commission deletes the radionavigation-satellite service allocation from the two bands and retain the existing primary allocations to the mobile-satellite service (Earth-to-space) in the two bands on an exclusive basis, consistent with the *WRC-15 Final Acts*.

TERRESTRIAL ISSUES

Amateur Service in the 5351.5-5366.5 kHz Band

In this section, the Commission makes allocation decisions regarding amateur use of the 5351.5-5366.5 kHz band and the four discrete channels at 5332, 5348, 5373, and 5405 kHz that are outside of the band, as well as the technical and operational characteristics amateurs must adhere to when utilizing the band and the four discrete channels. The *WRC-15 Final Acts* allocated the 5351.5-5366.5 kHz band to the amateur service on a secondary basis in all ITU regions and generally set a maximum radiated power at 15 watts equivalent isotropically radiated power (EIRP), equivalent to 9.15 watts effective radiated power (ERP). In the *WRC-15 Notice*, the Commission sought comment on a number of proposals affecting amateur use of this band, including whether to allocate the 5351.5-5366.5 kHz band to the Amateur Radio Service on a secondary basis, whether the amateur service should keep the existing four channels at 5332, 5348, 5373, and 5405 kHz they use that are outside of the new allocation (known by amateurs as the 60-meter band), whether use and power limitations should be applied to the band, and the appropriate station class for use of the band, among others.

Under current Commission rules, the 5275-5450 kHz band is allocated for Federal/non-Federal shared use to the fixed service on a primary basis and the mobile except aeronautical mobile service on a secondary basis. Footnote US23 provides the amateur service with a secondary allocation on five discrete channels – each with a maximum bandwidth of 2.8 kilohertz and centered on frequencies 5332, 5348, 5358.5, 5373, and 5405 kHz. Current Commission rules also allow stations in the amateur service to transmit on these frequencies with a maximum ERP of 100 W peak envelope power (PEP) – over ten times more powerful than WRC-15's EIRP limit.

In 2017, the American Radio Relay League (ARRL), filed a Petition for Rulemaking asking the Commission to implement the amateur allocations provided for in the *WRC-15 Final Acts*, to retain the four amateur service channels outside of the band, to authorize amateurs General Class or above to use the contiguous band, and to retain the maximum ERP limit of 100 W PEP for use in the new band. NTIA recommends that the Commission conforms footnote US23 to the *WRC-15 Final Acts* by allocating the 5351.5-5366.5 kHz band to the amateur service on a secondary basis, removing the four existing amateur channels outside of this proposed new amateur band, and restricting the maximum radiated power of amateur operations in the band to 15 W EIRP (9.15 W ERP).

Allocation. For the reasons stated below, the Commission modifies footnote US23 and part 97 of the Commission's rules to implement the new international allocation at 5351.5-5366.5 kHz, retain the existing four channels at 5332, 5348, 5373, and 5405 kHz that are outside of the new allocation, and do not restrict the existing secondary allocation for the existing four channels to disaster response operations. The Commission first sought comment on the proposal to modify footnote US23 and part 97 of the Commission's rules to implement the new international allocation at 5351.5-5366.5 kHz and whether to retain the existing four channels at 5332, 5348, 5373, and 5405 kHz that are outside of the new allocation. While commenters support the new international allocation, they are generally opposed to the removal of the four discrete channels outside of the new allocation. A commenter states that the "propagation characteristics of the 60-meter band allow for more reliable communications over medium distances than other amateur bands such as the 80-meter or 40-meter bands." Another commenter states that the "60-meter band has proven to be immensely valuable in facilitating public service initiatives. Its strategic positioning between the 80-meter and 40-meter amateur bands ensures reliable signal propagation to specific geographic areas, particularly during temporal and solar cycle fluctuations." Commenters generally aver that the amateur radio community requires access to a range of frequencies in order to achieve long-distance propagation by refracting high frequency communications off of the ionosphere. Commenters additionally note that, depending on atmospheric conditions, signals transmitting at lower frequencies, such as the 3500-4000 kHz band, can be absorbed by the ionosphere. Conversely, there are atmospheric conditions such that operation at higher frequencies, for example the 7000-7300 kHz range, could result in signals that pass through the ionosphere completely, avoiding the desired refraction necessary for long distance reception. Multiple commenters thus took issue with the Commission's statement in the *WRC-15 Notice*, which characterized the internationally harmonized spectrum options at 3 and 7 MHz as being sufficient for amateur operations, with most commenters reiterating the different propagation characteristics of the bands.

In 2003, when the Commission originally granted amateurs a secondary allocation in the 5250-5400 kHz range, the Commission stated its belief that frequencies within that range might be useful for completing disaster communications links at times when the 3 and 7 MHz bands were not available due to ionospheric conditions. The Commission continues to hold that opinion and thus allocate the 5351.5-

5366.5 kHz band to the amateur radio service by modifying footnote US23 and part 97 of the Commission's rules. Additionally, the Commission retains the existing four channels at 5332, 5348, 5373, and 5405 kHz that are outside of the new allocation for continued amateur use.

The Commission also sought comment on whether it should alternatively only allow amateur access to the four discrete channels at 5332, 5348, 5373, and 5405 kHz in response to disasters. Amateurs participating in the Military Auxiliary Radio System (MARS) or SHAred RESources (SHARES) High Frequency (HF) Radio programs during disasters or the Amateur Radio Emergency Service (ARES) or the Radio Amateur Civil Emergency Service (RACES) emergency communications programs were invited to share their proposals for whether the existing channels should continue to be used and under what conditions. One commenter states that utilization of the 60-meter band channels allows the amateur community to receive up to date emergency communications from MARS stations. On the other hand, another commenter states that use of the 60-meter band should be conditioned upon use for practice drills in MARS, SHARES, ARES, and RACES and that non-emergency use should not be allowed. However, most commenters on this issue do not support restricting the band to emergency use and some state that, while emergency use of the band by qualified amateurs remains important, non-emergency use gives amateurs an important frequency band for continued communications. The Commission finds that restricting the existing allocation to disaster response would deprive the amateur community of an important means of communication, especially in instances where ionospheric propagation characteristics at alternative high frequency bands render them potentially unusable.

Channelization and Permitted Uses. Consistent with its proposal in the *WRC-15 Notice*, the Commission does not require the use of channelization or sub-bands in the new internationally harmonized amateur allocation. In the *WRC-15 Notice*, the Commission stated that, due to the wide variety of potential applications and the need to protect other communications, dividing the band into channels or sub-bands would lead to inefficient spectrum use. The Commission also proposed that, due to the propensity of some wideband digital emissions creating spectrum sharing problems, a maximum emission bandwidth of 2.8 kilohertz should be imposed on amateur operations in the band. The Commission asked commenters whether there were any other limits or technical rule changes necessary to ensure reliable and efficient use of the band.

Most commenters support the Commission's proposal not to channelize the new international allocation, with one stating that channelization in the amateur radio service is limiting due to the varying nature of emissions depending on type (e.g., continuous wave, phone, or digital). Another commenter, however, supports the notion of channelization, stating that the new 15 kilohertz band can be neatly channelized into five, 3-kilohertz channels, which would help to maintain order by letting users know where transmissions must occur. Regarding other technical proposals for the band, another commenter argues against the use of continuous wave (CW) transmissions, stating that they are obsolete and have not been used for primary communications in other radio services for years. On the other hand, another commenter argues that the new 15 kilohertz band should not be channelized and should be restricted to narrow modes only, such as CW and digital, with no phone mode allowed on the new band. One commenter expresses support for the Commission's proposal not to channelize the new 15 kilohertz band and states that any unencrypted digital operation should be allowed as long as its emission bandwidth does not exceed 2.8 kilohertz, which the commenter maintains is necessary to preserve spectrum in this narrow band. Other commenters also support the Commission proposal to limit emission bandwidth to 2.8 kilohertz within the new band.

Due to the limited contiguous allocation of 15 kilohertz, the Commission recognizes that amateur radio operators will need flexibility to utilize the new allocation. Thus, the Commission does not require the use of channelization or sub-bands in the new allocation at 5351.5-5366.5 kHz. The Commission also carries forward the requirement of section 97.303(h) of the Commission's rules, currently applicable to the discrete channels at 5332, 5348, 5373, and 5405 kHz, which stipulates that amateur operators shall ensure that emission bandwidth not exceed 2.8 kilohertz, which the Commission also agrees will preserve access to the limited spectrum in this secondary allocation. Amateurs utilizing the discrete channels located at 5332, 5348, 5373, and 5405 kHz should already be familiar with these requirements and they have been quite successful in the mitigation of interference to primary users. The Commission found the comments that favored channelization to be unpersuasive, due to both the record reflecting substantial opposition to channelization and the fact that narrow band modes of operation allow a multitude of signals to transmit on a single 2.8 kilohertz channel.

Station Class. The Commission limits use of the existing amateur allocations at 5332, 5348, 5373, and 5405 kHz and the new amateur allocation at 5351.5-5366.5 kHz to amateur radio operators holding a General Class license or higher. The Commission proposed in the *WRC-15 Notice* that utilization of the new international allocation at 5351.5-5366.5 kHz should be limited to amateurs holding a General Class license or higher. The Commission also sought comment on its proposal that if it maintains the four discrete channels at 5332, 5348, 5373, and 5405 kHz outside of the international allocation, should they too be limited to General Class licensees or higher. Commenters support the Commission's proposal to limit use of the new 15 kilohertz band to General Class licensees or above, with one stating that it is necessary "due to the narrowness of the band, the need to calculate radiated power limits for the antenna configuration, and the need to understand the requirements ensuring that primary users are protected from harmful interference." ARRL also suggests that use of the new international allocation and the four channels outside of that allocation should be limited to General Class licensees or higher, as "[e]ntry-level radio amateurs may not have the requisite experience to operate in accordance with the interference avoidance protocols with which much more experienced licensees will be proficient."

The Commission agrees with commenters that utilization of the new international allocation at 5351.5-5366.5 kHz should be limited to those holding a General Class license or above. The Commission believes that the need to protect the important Federal operations in this band requires a higher level understanding of power limitations, radiocommunications technology, operating practices, and applicable regulations. Those holding General Class licenses or above will have a better understanding of these requirements. Further, this logic extends to the four discrete channels that are outside of the 5351.5-5366.5 kHz band, and the Commission limits utilization of these frequencies to those holding a General Class license or higher.

Power. For the reasons stated below, the Commission does not allow the amateur community to utilize the new international allocation at 5351.5-5366.5 kHz at the requested 100 W ERP limit and adopt NTIA's proposal to limit usage of this band to 15 W EIRP, or 9.15 W ERP. Operating on a secondary basis, the amateur community must protect Federal operations in this band, and the Commission does not believe that the increased potential for harmful interference at this power limit has been fully considered

at this time. Amateur access to the four discrete channels at 5332, 5348, 5373, and 5405 kHz will however, continue at the same 100 W ERP limit. In the *WRC-15 Notice*, the Commission tentatively concluded that NTIA's recommended 15 W EIRP limit would reduce the potential of harmful interference to incumbent primary operations and that the long-range propagation capabilities of the frequencies in question would likely allow efficient communications at low-power levels. The Commission did, however, concede that there may be instances where more power is needed to deal with propagation challenges. The Commission asked commenters seeking a power limit above the proposed 15 W EIRP to explain the appropriate power limit for the 60-meter band, if higher power levels should only be maintained during emergency drills/response, how the power limit should be defined in the Commission's rules (EIRP, ERP, or transmitter output power), and whether antenna limitations were necessary.

In line with ARRL's Petition for Rulemaking and proposed retention of the 100 W ERP limit for both the 15 kilohertz band at 5351.5-5366.5 kHz and the four discrete channels at 5332, 5348, 5373, and 5405 kHz outside of the new allocation, most commenters argue against the proposed power reduction. Many point out that Canada has already enacted the proposals ARRL has put forth in this proceeding, namely retention of the 100 W ERP limit for the 60-meter band, and that identical allocations and power limits would facilitate harmonious communications throughout most of North America. Commenters argue that the 100 W ERP limit currently in place for the 60-meter band is necessary to maintain reliable communications, while others state that the current power limit is necessary for emergency communications when propagation on other bands is limited by solar and earth conditions. Others argue for an even larger power increase, asking the Commission to consider a 500 W ERP limit, "since lower frequencies are more susceptible to D-layer absorption and emergency communications will still need to be heard, especially in high latitude locations like Alaska." Consistent with most commenters, however, is the contention that the current use of the 100 W ERP limit on the 60-meter band has not been shown to cause harmful interference to the primary users of the band, both in assigned channels and through spurious emissions outside of the allocation. Some commenters argue that, due to the use of newer and more efficient digital modes, weak signals are not an impediment to sending information and the 15 W EIRP limit proposed by the NTIA is sufficient. Others, however, state that amateur, non-emergency operations conducted in the four discrete channels outside of the new allocation should be restricted to the

15 W EIRP limit and that, aside from practices and drills, these channelized frequencies should not be used by the amateur community unless an actual emergency exists, at which point the 100 W ERP limit would be appropriate. Another commenter states that stipulating power levels based on scenario (emergency/non-emergency, drills, etc…) would overcomplicate the issue. Lastly, many commenters oppose the Commission's proposal to define the power limit in terms of EIRP to be consistent with the WRC-15 recommendation, with one commenter stating that EIRP measurements are applicable to important communication links and multi-node networks – not amateur radio. Another commenter further states that the measuring standard should remain as ERP, instead of EIRP, as the ERP standard is widely used and understood in the amateur radio service. One commenter argues that if an appropriate power standard such as EIRP or ERP is used, then no antenna limitations are necessary.

The Commission agrees with those commenters that support the proposed 15 W EIRP (9.15 W ERP) for the new international allocation at 5351.5-5366.5 kHz, in line with the *WRC-15 Final Acts* and the Commission's tentative conclusion in the *WRC-15 Notice*. However, for consistency in part 97 and the power specification for the discrete channels the Commission is leaving in place, the Commission specifies the power limit as 9.15 W ERP, which is equivalent to 15 W EIRP. Additionally, as stated above, allowing amateur operations in this band while fully protecting incumbent primary Federal operations is the Commission's priority, and even intermittent interference in this band could jeopardize important Federal operations. Also, the long range propagation characteristics of this band should allow for efficient communications even at low-power levels. Given, however, that ARRL's Petition for Rulemaking remains open at this time, the Commission expects the Commission may address any necessary power adjustments for the new 15 kilohertz international allocation in that proceeding. The Commission also allows continued amateur access to the four discrete channels at 5332, 5348, 5373, and 5405 kHz at the prevailing 100 W ERP, which was supported by the majority of commenters and which has not posed any interference issues. Further, the Commission does not stipulate power levels based on scenario (emergency/non-emergency), as this would add unnecessary regulatory complexity. The Commission also continues to use ERP as the measuring standard – as most amateurs are familiar with this standard – and the Commission does not adopt antenna limitations, as the Commission believe that a radiated power limit would ensure that excess power is not used.

Amateur Service in the 420-450 MHz Band

The Commission's next proposal, based on a request from the NTIA, was to update the coordination and contact information in footnote US270 for the areas where the peak envelope power of an amateur station operating in the 420-450 MHz (70 cm) band is generally limited to 50 watts, and to revise the cross reference to this footnote in section 97.313(f) of the rules.

The Commission received no comment on this proposal and implement the NTIA recommendation, which will clarify compliance with its rules, by updating footnote US270 and revising the cross reference to this footnote in section 97.313(f) of the rules.

Deletion of the Broadcasting Service from the 700 MHz Band

The Commission adopts its proposal to delete the broadcasting service allocations in the 698-758 MHz, 775-788 MHz, and 805-806 MHz bands from the non-Federal Table and to revise footnote NG159 by removing the reference to part 74, subpart G. Comments received on this topic support the Commission's proposal to delete the broadcasting service allocations. These actions are appropriate given that the transition of television broadcasting from the 698-806 MHz (700 MHz) band concluded in 2010 and the remaining primary fixed and mobile service allocations in the bands effectively gives the licensees in those bands the flexibility to provide broadcasting services. The Commission also asked whether it should modify the part 27 service rules to reflect the deletion of the broadcasting service allocation in the 700 MHz band. Commenters, while expressing general support, did not specifically indicate which rules should be modified. The Commission concludes that modifications to its part 27 rules to reflect the deletion of the broadcasting service allocation in the 700 MHz band are unnecessary to reflect the changes made in this Order.

Deletion of Footnote NG155

The Commission's final proposal in the Terrestrial component of the *WRC-15* Notice, concerned the removal of footnote NG155 from the 157.45-161.575 MHz band in the U.S. Table in section 2.106(a) and from section 2.106(d)(155) of the rules because the frequencies and frequency bands to which it applies are not currently authorized in part 80 of the Commission's rules. As the International Table of Frequency Allocations has already identified frequencies for worldwide intership communications, the Commission concludes that there is no need to specify any other frequencies for intership use. For these

reasons, and the lack of any comment on the proposal, the Commission removes footnote NG155 from section 2.106 of the rules.

OTHER MATTERS

The *WRC-15 Final Acts* also added a provision in Article 4 of the Radio Regulations (No. 4.24) to describe the use of space research service (deep space) allocations. Accordingly, in the *WRC-15 Notice*, the Commission proposed to add a new paragraph to section 2.102 of the Commission's rules to clarify that: "Space research systems intended to operate in deep space may also use the space research service (deep space) allocations, with the same status as those allocations, when the spacecraft is near the Earth, such as during launch, early orbit, flying by the Earth, and returning to the Earth."

Commenters within the wireless industry voice concern that adding this language to section 2.102 of the Commission's rules would affect spectrum bands (Table 3 below) targeted for future wireless use by both the Commission and the NTIA's National Spectrum Strategy. CTIA and T-Mobile both comment that multiple frequency bands which an updated section 2.102 would affect, such as the 2110-2120 MHz band, the 7145-7190 MHz band, the 8400-8500 MHz band, and the 12.7-13.25 GHz band, have already been allocated for wireless services 2110-2120 MHz, for example, has been allocated for advanced wireless service (AWS) use) or are being targeted for future wireless use. Both T-Mobile and Verizon ask the Commission to fully consider how the expansion of the space research (deep space) allocation would impact broader agency and U.S. priorities, including the need for additional terrestrial wireless capacity. At the same time, T-Mobile does concede that an evaluation of this allocation is particularly important, as the proposed near-earth operations include mission critical launch and return to earth functions.

Table 3: Frequency Bands Allocated to the Space Research Service (Deep Space) in the U.S. Table

Band	Directional Indicator	Remarks
2110-2120 MHz	Earth-to-space	Primary allocation per footnote US252
2290-2300 MHz	Space-to-Earth	Primary Federal and non-Federal allocations

7145-7190 MHz	Earth-to-space	Primary Federal & secondary non-Federal use, Goldstone only per US262
8400-8450 MHz	Space-to-Earth	Primary Federal and secondary non-Federal allocations
12.75-13.25 GHz	Space-to-Earth	Secondary international allocation; use limited to Goldstone per US251
16.6-17.1 GHz	Earth-to-space	Secondary Federal allocation
31.8-32.3 GHz	Space-to-Earth	Primary allocation, limited to Goldstone, per footnote US262
34.2-34.7 GHz	Earth-to-	Primary Federal & secondary non-Federal use, Goldstone only per

Given shifting spectrum priorities since the completion of the *WRC-15 Final Acts*, along with a record reflecting majority opposition to the proposals outlined in the *WRC-15 Notice*, the Commission will not adopt the proposed expansion of the space research (deep space) allocation.

The Commission next sought comment on a proposal to amend section 2.1(c) of the rules to add or revise the definitions for the terms "meteorological aids land station," "meteorological aids mobile station," and "coordinated universal time" in accordance with the WRC-15 adopted definitions. The Commission received no comment on these proposals and adopt the definitions for the terms "meteorological aids land station," "meteorological aids mobile station," and "coordinated universal time" in accordance with the WRC-15 adopted definitions. The Commission also corrects a typographical error in the definition of "radiosonde" in section 2.1(c) (i.e., "ballon" should be balloon).

The Commission next sought comment on a proposal to amend section 2.105(d) of the rules by stating that the footnote references which appear in the U.S. table below the name(s) of the allocated service or services apply to more than one of the allocated services, or to the whole of the allocation concerned, and that the footnote references which appear to the right of the name of the allocated service are applicable to only that particular service. The Commission received no comment on this clarifying proposal and amend section 2.105(d) accordingly.

Finally, in the *WRC-15 Notice,* the NTIA recommended that the Commission add a subset of international footnotes that identify specific spectrum bands for International Mobile Telecommunications (IMT) to the non-Federal table. No comments were received on this subject. The Commission does not

generally specify the technology that licensees must use in a particular frequency band. Identifying particular bands for IMT use in the non-Federal table would contradict this general policy. NTIA's recommended subset of international footnotes identifies specific frequency bands for IMT use but does not preclude use of the bands for other purposes or establish any priority for IMT use of the bands. Because the footnotes are merely advisory, their absence from the non-Federal table will not impact the use of these bands.

ORDERING CLAUSES

IT IS ORDERED that, pursuant to sections 1, 4(i), 4(j), 7, 301, 303(c), 303(f), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154(i), 154(j), 157, 301, 303(c), 303(f), and 303(r), the Order IS ADOPTED.

IT IS FURTHER ORDERED that the amendments of parts 2, 25, 74, 78, 87, 90, 97 and 101 of the Commission's rules, as set forth in Appendix A, ARE ADOPTED, effective thirty (30) days after publication in the Federal Register.

IT IS FURTHER ORDERED that the Commission's Office of the Secretary, SHALL SEND a copy of the Order, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

IT IS FURTHER ORDERED that the Commission SHALL SEND a copy of the Order in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, see 5 U.S.C. 801(a)(1)(A).

List of Subjects

47 CFR Part 2

Administrative practice and procedures, Communications, Communications equipment, Satellites, Telecommunications, and Wiretapping, Electronic surveillance.

47 CFR Part 25

Administrative practice and procedures, Satellites.

47 CFR Part 74

Communications equipment, Telecommunications.

47 CFR Part 78 and 87

Communications equipment.

47 CFR Part 90

Administrative practice and procedure, Business and industry, Communications equipment, Organization and functions (Government agencies), Telecommunications.

47 CFR Part 97

Communications equipment, Satellites.

47 CFR Part 101

Administrative practice and procedure, Communications, Communications equipment, Satellites, Telecommunications.

Federal Communications Commission.

Marlene Dortch,

Secretary.

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR parts 2, 25, 74, 78, 87, 90, 97, and 101 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. Amend § 2.1(c) by revising the definition of "Coordinated Universal Time (UTC)", and adding, in alphabetical order, definitions of "Meteorological aids land station," "Meteorological aids mobile station," and "Radiosonde" to read as follows:

§ 2.1 Terms and definitions.

* * * * *

(c) * * *

Coordinated Universal Time (UTC). Time scale, based on the second (SI), as described in Resolution 655 (WRC-15).

* * * * *

Meteorological aids land station. A station in the meteorological aids service not used while in motion. (RR)

Meteorological aids mobile station. A station in the meteorological aids service used while in motion or during halts at unspecified points. (RR)

* * * * *

Radiosonde. An automatic radio transmitter in the meteorological aids service that transmits meteorological data and is usually carried on an aircraft, free balloon, kite, or parachute. (RR)

* * * * *

3. Amend § 2.105 by revising paragraph (d)(6) and adding paragraphs (d)(7) and (8) to read as follows:

§ 2.105 United States Table of Frequency Allocations.

* * * * *

(d) * * *

(6) The footnote references that appear in the United States Table below the allocated service or services apply to more than one of the allocated services, or to the whole of the allocation concerned.

(7) The footnote references that appear to the right of the name of a service are applicable only to that particular service.

(8) The coordinates of latitude and longitude that are listed in United States, Federal, and non-Federal footnotes are referenced to the North American Datum of 1983 (NAD 83).

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4. Amend § 2.106 by:

a. In paragraph (a), revising pages 22, 24, 26 through 28, 30, 32, 47, 48, and 52 of the Allocation Table;

b. Revising paragraphs (c)(13) and (23);

c. Adding paragraph (c)(78);

d. Revising paragraphs (c)(117), (128), (139), and (224);

e. Adding paragraph (c)(265);

f. Revising paragraph (c)(270);

g. Adding paragraph (c)(474);

h. Revising paragraphs (d)(62);

i. Removing and reserving paragraph (d)(155); and

j. Revising (d)(159).

The revisions and additions read as follows:

§ 2.106 Table of Frequency Allocations.

(a) * * *

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137.825-138 SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.204 5.205 5.206 5.207 5.208			137.825-138 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Mobile-satellite (space-to-Earth) US319 US320 5.208		
138-143.6 AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	138-143.6 FIXED MOBILE RADIOLOCATION Space research (space-to-Earth)	138-143.6 FIXED MOBILE Space research (space-to-Earth) 5.207 5.213	138-144 FIXED MOBILE	138-144	
143.6-143.65 AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space-to-Earth) 5.211 5.212 5.214	143.6-143.65 FIXED MOBILE RADIOLOCATION SPACE RESEARCH (space-to-Earth)	143.6-143.65 FIXED MOBILE SPACE RESEARCH (space-to-Earth) 5.207 5.213			
143.65-144 AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	143.65-144 FIXED MOBILE RADIOLOCATION Space research (space-to-Earth)	143.65-144 FIXED MOBILE Space research (space-to-Earth) 5.207 5.213	G30		
144-146 AMATEUR AMATEUR-SATELLITE 5.216			144-148	144-146 AMATEUR AMATEUR-SATELLITE	Amateur Radio (97)
146-148 FIXED MOBILE except aeronautical mobile (R)	146-148 AMATEUR 5.217	146-148 AMATEUR FIXED MOBILE 5.217		146-148 AMATEUR	
148-149.9 FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.218A 5.219 5.221	148-149.9 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.218A 5.219 5.221		148-149.9 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) US319 US320 US323 US325 5.218 5.219 G30	148-149.9 MOBILE-SATELLITE (Earth-to-space) US320 US323 US325 5.218 5.219 US319	Satellite Communications (25)
149.9-150.05 MOBILE-SATELLITE (Earth-to-space) 5.209 5.220			149.9-150.05 MOBILE-SATELLITE (Earth-to-space) US319 US320		
150.05-153 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	150.05-154 FIXED MOBILE 5.225		150.05-150.8 FIXED MOBILE US73 G30	150.05-150.8 US73	

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157.3375-161.7875 FIXED MOBILE except aeronautical mobile	157.3375-161.7875 FIXED MOBILE			5.226 NG111	
				157.45-161.575 FIXED LAND MOBILE NG28 NG111 NG112 5.226 NG6 NG70 NG124 NG148	Public Mobile (22) Remote Pickup (74D) Maritime (80) Private Land Mobile (90)
			161.575-161.625 5.226 US52	161.575-161.625 MARITIME MOBILE 5.226 US52 NG6 NG17	Public Mobile (22) Maritime (80)
			161.625-161.9625	161.625-161.775 LAND MOBILE NG6 5.226	Public Mobile (22) Remote Pickup (74D) Low Power Auxiliary (74H)
5.226	5.226			161.775-161.9625 MOBILE except aeronautical mobile US266 NG6	Maritime (80) Private Land Mobile (90)
161.7875-161.9375 FIXED MOBILE except aeronautical mobile Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228AC 5.226	161.7875-161.9375 FIXED MOBILE Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228AC 5.226				
161.9375-161.9625 FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226	161.9375-161.9625 FIXED MOBILE Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226		US266	5.226	
161.9625-161.9875 FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B	161.9625-161.9875 AERONAUTICAL MOBILE (OR) MARITIME MOBILE MOBILE-SATELLITE (Earth-to-space) 5.228C 5.228D	161.9625-161.9875 MARITIME MOBILE Aeronautical mobile (OR) 5.228E Mobile-satellite (Earth-to-space) 5.228F 5.226	161.9625-161.9875 AERONAUTICAL MOBILE (OR) (AIS 1) MARITIME MOBILE (AIS 1) MOBILE-SATELLITE (Earth-to-space) (AIS 1) 5.228C US52		Satellite Communications (25) Maritime (80)
161.9875-162.0125 FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226 5.229	161.9875-162.0125 FIXED MOBILE Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226		161.9875-162.0125	161.9875-162.0125 MOBILE except aeronautical mobile 5.226	Maritime (80)
162.0125-162.0375 FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B 5.229	162.0125-162.0375 AERONAUTICAL MOBILE (OR) MARITIME MOBILE MOBILE-SATELLITE (Earth-to-space) 5.228C 5.228D	162.0125-162.0375 MARITIME MOBILE Aeronautical mobile (OR) 5.228E Mobile-satellite (Earth-to-space) 5.228F 5.226	162.0125-162.0375 AERONAUTICAL MOBILE (OR) (AIS 2) MARITIME MOBILE (AIS 2) MOBILE-SATELLITE (Earth-to-space) (AIS 2) 5.228C US52		Satellite Communications (25) Maritime (80)

235-267 FIXED MOBILE 5.111 5.252 5.254 5.256 5.256A	235-267 FIXED MOBILE 5.111 5.256 G27 G100	235-267 5.111 5.256	
267-272 FIXED MOBILE Space operation (space-to-Earth) 5.254 5.257	267-322 FIXED MOBILE	267-322	
272-273 SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254			
273-312 FIXED MOBILE 5.254			
312-315 FIXED MOBILE Mobile-satellite (Earth-to-space) 5.254 5.255			
315-322 FIXED MOBILE 5.254	G27 G100		
322-328.6 FIXED MOBILE RADIO ASTRONOMY 5.149	322-328.6 FIXED MOBILE US342 G27	322-328.6 US342	
328.6-335.4 AERONAUTICAL RADIONAVIGATION 5.258 5.259	328.6-335.4 AERONAUTICAL RADIONAVIGATION 5.258		Aviation (87)
335.4-387 FIXED MOBILE 5.254	335.4-399.9 FIXED MOBILE	335.4-399.9	
387-390 FIXED MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255			
390-399.9 FIXED MOBILE 5.254	G27 G100		
399.9-400.05 MOBILE-SATELLITE (Earth-to-space) 5.209 5.220 5.260A 5.260B	399.9-400.05 MOBILE-SATELLITE (Earth-to-space) US319 US320		Satellite Communications (25)

International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
400.05-400.15 STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 5.261 5.262			400.05-400.15 STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 5.261		
400.15-401 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) 5.263 Space operation (space-to-Earth) 5.262 5.264			400.15-401 METEOROLOGICAL AIDS (radiosonde) US70 METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) US319 US320 US324 SPACE RESEARCH (space-to-Earth) 5.263 Space operation (space-to-Earth) 5.264	400.15-401 METEOROLOGICAL AIDS (radiosonde) US70 MOBILE-SATELLITE (space-to-Earth) US319 US320 US324 SPACE RESEARCH (space-to-Earth) 5.263 Space operation (space-to-Earth) 5.264	Satellite Communications (25)
401-402 METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile 5.264A 5.264B			401-402 METEOROLOGICAL AIDS (radiosonde) US70 SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) US64 US384	401-402 METEOROLOGICAL AIDS (radiosonde) US70 SPACE OPERATION (space-to-Earth) Earth exploration-satellite (Earth-to-space) Meteorological-satellite (Earth-to-space) US64 US384	MedRadio (95I)
402-403 METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile 5.264A 5.264B			402-403 METEOROLOGICAL AIDS (radiosonde) US70 EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) US64 US384	402-403 METEOROLOGICAL AIDS (radiosonde) US70 Earth exploration-satellite (Earth-to-space) Meteorological-satellite (Earth-to-space) US64 US384	
403-406 METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile 5.265			403-406 METEOROLOGICAL AIDS (radiosonde) US70 US64 US265 G6	403-406 METEOROLOGICAL AIDS (radiosonde) US70 US64 US265	
406-406.1 MOBILE-SATELLITE (Earth-to-space) 5.265 5.266 5.267			406-406.1 MOBILE-SATELLITE (Earth-to-space) 5.266 5.267		Maritime (EPIRBs) (80V) Aviation (ELTs) (87F) Personal Radio (95)
406.1-410 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.265			406.1-410 FIXED MOBILE RADIO ASTRONOMY US74 US13 US55 US117 US265 G5 G6	406.1-410 RADIO ASTRONOMY US74 US13 US55 US117 US265	Private Land Mobile (90)

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410-420 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) 5.268			410-420 FIXED MOBILE SPACE RESEARCH (space-to-space) 5.268 US13 US55 US64 G5	410-420 Space research (space-to-space) 5.268 US13 US55 US64	Private Land Mobile (90) MedRadio (95I)
420-430 FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271			420-450 RADIOLOCATION G2 G129 5.286 US64 US87 US230 US269 US270 US397 G8	420-450 Amateur US270 5.282 5.286 US64 US87 US230 US269 US397	Private Land Mobile (90) MedRadio (95I) Amateur Radio (97)
430-432 AMATEUR RADIOLOCATION 5.271 5.274 5.275 5.276 5.277	430-432 RADIOLOCATION Amateur 5.271 5.276 5.277 5.278 5.279				
432-438 AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138 5.271 5.276 5.277 5.280 5.281 5.282	432-438 RADIOLOCATION Amateur Earth exploration-satellite (active) 5.279A 5.271 5.276 5.277 5.278 5.279 5.281 5.282				
438-440 AMATEUR RADIOLOCATION 5.271 5.274 5.275 5.276 5.277 5.283	438-440 RADIOLOCATION Amateur 5.271 5.276 5.277 5.278 5.279				
440-450 FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271 5.284 5.285 5.286					
450-455 FIXED MOBILE 5.286AA 5.209 5.271 5.286 5.286A 5.286B 5.286C 5.286D 5.286E			450-454 5.286 US64 US87	450-454 LAND MOBILE 5.286 US64 US87 NG112 NG124	Remote Pickup (74D) Low Power Auxiliary (74H) Private Land Mobile (90) MedRadio (95I)
			454-456	454-455 FIXED LAND MOBILE US64 NG32 NG112 NG148	Public Mobile (22) Maritime (80) MedRadio (95I)
455-456 FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E	455-456 FIXED MOBILE 5.286AA MOBILE-SATELLITE (Earth-to-space) 5.286A 5.286B 5.286C 5.209	455-456 FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E		455-456 LAND MOBILE US64	Remote Pickup (74D) Low Power Auxiliary (74H) MedRadio (95I)

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5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.312	614-698 BROADCASTING Fixed Mobile 5.293 5.308 5.308A 5.309		614-890	614-698 FIXED MOBILE NG5 NG14 NG33 NG115 NG149	RF Devices (15) Wireless Communications (27) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H)
694-790 MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING	698-806 MOBILE 5.317A BROADCASTING Fixed			698-758 FIXED MOBILE NG159	Wireless Communications (27) LPTV and TV Translator (74G)
				758-775 FIXED MOBILE NG34 NG159	Public Safety Land Mobile (90R)
				775-788 FIXED MOBILE NG159	Wireless Communications (27) LPTV and TV Translator (74G)
5.300 5.312				788-805 FIXED MOBILE NG34 NG159	Public Safety Land Mobile (90R)
790-862 FIXED MOBILE except aeronautical mobile 5.316B 5.317A BROADCASTING				805-806 FIXED MOBILE NG159	Wireless Communications (27) LPTV and TV Translator (74G)
	5.293 5.309			806-809 LAND MOBILE	Public Safety Land Mobile (90S)
	806-890 FIXED MOBILE 5.317A BROADCASTING			809-849 FIXED LAND MOBILE	Public Mobile (22) Private Land Mobile (90)
				849-851 AERONAUTICAL MOBILE	Public Mobile (22)
				851-854 LAND MOBILE	Public Safety Land Mobile (90S)
5.312 5.319				854-894 FIXED LAND MOBILE	Public Mobile (22) Private Land Mobile (90)
862-890 FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322					
5.319 5.323	5.317 5.318	5.149 5.305 5.306 5.307 5.320		US116 US268	

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				939.5-940 FIXED LAND MOBILE US116 US268	Private Land Mobile (90)
				940-941 FIXED MOBILE US116 US268	Personal Communications (24)
5.323	5.325	5.327	US116 US268 G2		
942-960 FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.323	942-960 FIXED MOBILE 5.317A	942-960 FIXED MOBILE 5.317A BROADCASTING 5.320	941-944 FIXED US84 US268 US301 G2 944-960	941-944 FIXED US84 US268 US301 NG30 NG35 944-960 FIXED NG35	Public Mobile (22) Aural Broadcast Auxiliary (74E) Low Power Auxiliary (74H) Fixed Microwave (101)
960-1164 AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL RADIONAVIGATION 5.328 5.323AA			960-1164 AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL RADIONAVIGATION 5.328 5.328AA US78 US224		Aviation (87)
1164-1215 AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.328A			1164-1215 AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328A US224		
1215-1240 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332			1215-1240 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION G56 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) G132 SPACE RESEARCH (active) 5.332	1215-1240 Earth exploration-satellite (active) Space research (active)	
1240-1300 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) Amateur 5.282 5.330 5.331 5.332 5.335 5.335A			1240-1300 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION G56 SPACE RESEARCH (active) AERONAUTICAL RADIONAVIGATION 5.332 5.335	1240-1300 AERONAUTICAL RADIONAVIGATION Amateur Earth exploration-satellite (active) Space research (active) 5.282	Amateur Radio (97)
1300-1350 RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 RADIONAVIGATION-SATELLITE (Earth-to-space) 5.149 5.337A			1300-1350 AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation G2 US342	1300-1350 AERONAUTICAL RADIONAVIGATION 5.337 US342	Aviation (87)
1350-1400 FIXED MOBILE RADIOLOCATION	1350-1400 RADIOLOCATION 5.338A		1350-1390 FIXED MOBILE RADIOLOCATION G2 5.334 5.339 US342 US385 G27 G114	1350-1390 5.334 5.339 US342 US385	
			1390-1395 5.339 US79 US342 US385	1390-1395 FIXED MOBILE except aeronautical mobile 5.339 US79 US342 US385 NG338A	Wireless Communications (27)
5.149 5.338 5.338A 5.339	5.149 5.334 5.339		1395-1400 LAND MOBILE (medical telemetry and medical telecommand) 5.339 US79 US342 US385		Personal Radio (95)

International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
8.65-8.75 RADIOLOCATION 5.468 5.469			8.65-9 RADIOLOCATION G59	8.65-9 Radiolocation	Aviation (87) Private Land Mobile (90)
8.75-8.85 RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 5.471					
8.85-9 RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473			US53	US53	
9-9.2 AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION 5.471 5.473A			9-9.2 AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION G2 5.473A G19	9-9.2 AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation	
9.2-9.3 EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474 5.474D			9.2-9.3 EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C MARITIME RADIONAVIGATION 5.472 Radiolocation US110 G59 5.474 US474D	9.2-9.3 MARITIME RADIONAVIGATION 5.472 Earth explorations-satellite (active) 5.474A 5.474B 5.474C Radiolocation US110 5.474 US474D	Maritime (80) Private Land Mobile (90)
9.3-9.5 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION 5.475 SPACE RESEARCH (active) 5.427 5.474 5.475A 5.475B 5.476A			9.3-9.5 EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION G56 RADIONAVIGATION US475 SPACE RESEARCH (active) Meteorological aids 5.427 5.474 5.475A 5.475B US67 US71 US476A	9.3-9.5 RADIONAVIGATION US475 Meteorological aids Earth exploration-satellite (active) Radiolocation Space research (active) 5.427 5.474 US67 US71 US476A	Maritime (80) Aviation (87) Private Land Mobile (90)
9.5-9.8 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A			9.5-9.8 EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active)	9.5-9.9 Earth exploration-satellite (active) Radiolocation Space research (active)	Private Land Mobile (90)
9.8-9.9 RADIOLOCATION Earth exploration-satellite (active) Fixed Space research (active) 5.477 5.478 5.478A 5.478B			9.8-9.9 RADIOLOCATION Earth exploration-satellite (active) Space research (active)		
9.9-10 EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Fixed 5.474D 5.477 5.478 5.479			9.9-10 EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION 5.479 US474D	9.9-10 Earth explorations-satellite (active) 5.474A 5.474B 5.474C Radiolocation 5.479 US474D	
10-10.4 EARTH EXPLORATION-SATELLITE	10-10.4 EARTH EXPLORATION-SATELLITE	10-10.4 EARTH EXPLORATION-	10-10.5 EARTH EXPLORATION-SATELLITE	10-10.45 Earth exploration-satellite (active)	Private Land Mobile (90)

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(active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.474D 5.479	(active) 5.474A 5.474B 5.474C RADIOLOCATION Amateur 5.474D 5.479 5.480	SATELLITE(active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.474D 5.479	(active) 5.474A 5.474B 5.474C RADIOLOCATION US108 G32	5.474A 5.474B 5.474C Amateur Radiolocation US108 5.479 US128 US474D NG50	Amateur Radio (97)
10.4-10.45 FIXED MOBILE RADIOLOCATION Amateur	10.4-10.45 RADIOLOCATION Amateur 5.480	10.4-10.45 FIXED MOBILE RADIOLOCATION Amateur			
10.45-10.5 RADIOLOCATION Amateur Amateur-satellite 5.481			5.479 US128 US474D	10.45-10.5 Amateur Amateur-satellite Radiolocation US108 US128 NG50	
10.5-10.55 FIXED MOBILE Radiolocation	10.5-10.55 FIXED MOBILE RADIOLOCATION		10.5-10.55 RADIOLOCATION US59		Private Land Mobile (90)
10.55-10.6 FIXED MOBILE except aeronautical mobile Radiolocation			10.55-10.6	10.55-10.6 FIXED	Fixed Microwave (101)
10.6-10.68 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482 5.482A			10.6-10.68 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) US130 US131 US482	10.6-10.68 EARTH EXPLORATION-SATELLITE (passive) FIXED US482 SPACE RESEARCH (passive) US130 US131	
10.68-10.7 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.483			10.68-10.7 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US131 US246		
10.7-10.95 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	10.7-10.95 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE except aeronautical mobile		10.7-11.7	10.7-11.7 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 US131 US211 NG52	Satellite Communications (25) Fixed Microwave (101)
10.95-11.2 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	10.95-11.2 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B MOBILE except aeronautical mobile		US131 US211	NG527A	

15.63-15.7 RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION			15.63-15.7 RADIOLOCATION 5.511E 5.511F US511E AERONAUTICAL RADIONAVIGATION US260 US211	15.63-15.7 AERONAUTICAL RADIONAVIGATION US260 US211 US511E	Aviation (87)
15.7-16.6 RADIOLOCATION 5.512 5.513			15.7-16.6 RADIOLOCATION G59	15.7-17.2 Radiolocation	Private Land Mobile (90)
16.6-17.1 RADIOLOCATION Space research (deep space) (Earth-to-space) 5.512 5.513			16.6-17.1 RADIOLOCATION G59 Space research (deep space) (Earth-to-space)		
17.1-17.2 RADIOLOCATION 5.512 5.513			17.1-17.2 RADIOLOCATION G59		
17.2-17.3 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.512 5.513 5.513A			17.2-17.3 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION G59 SPACE RESEARCH (active)	17.2-17.3 Earth exploration-satellite (active) Radiolocation Space research (active)	
17.3-17.7 FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A 5.516B Radiolocation 5.514	17.3-17.7 FIXED-SATELLITE (Earth-to-space) 5.516 BROADCASTING-SATELLITE Radiolocation 5.514 5.515	17.3-17.7 FIXED-SATELLITE (Earth-to-space) 5.516 Radiolocation 5.514	17.3-17.7 Radiolocation US259 G59 US402 G117	17.3-17.7 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) NG527A BROADCASTING-SATELLITE US259 US402 NG58	Satellite Communications (25)
17.7-18.1 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.517A (Earth-to-space) 5.516 MOBILE	17.7-17.8 FIXED FIXED-SATELLITE (space-to-Earth) 5.517 5.517A (Earth-to-space) 5.516 BROADCASTING-SATELLITE Mobile 5.515	17.7-18.1 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.517A (Earth-to-space) 5.516 MOBILE	17.7-17.8 US334 G117	17.7-17.8 FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) NG527A US334 NG58	Satellite Communications (25) TV Broadcast Auxiliary (74F) Cable TV Relay (78) Fixed Microwave (101)
	17.8-18.1 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.517A (Earth-to-space) 5.516 MOBILE 5.519		17.8-18.6 FIXED-SATELLITE (space-to-Earth) US334 G117	17.8-18.3 FIXED FIXED-SATELLITE (space-to-Earth) NG527A US334 US519	
18.1-18.4 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A (Earth-to-space) 5.520 MOBILE 5.519 5.521				18.3-18.6 FIXED-SATELLITE (space-to-Earth) NG527A	Satellite Communications (25)
18.4-18.6 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A MOBILE			US139 US519	US139 US334	

* * * * *

(c) * * *

(13) US13 The center frequencies listed in table 2 to paragraph (c)(13), each with a channel bandwidth not greater than 12.5 kHz, are available for assignment to non-Federal fixed stations for the specific purpose of transmitting hydrological and meteorological data in cooperation with Federal agencies, subject to the condition that harmful interference will not be caused to Federal stations:

Table 2 to paragraph (c)(13):

HYDRO CHANNELS (MHZ)

169.4250	170.2250	171.0250	171.8375	412.6625
169.4375	170.2375	171.0375	171.8500	412.6750
169.4500	170.2500	171.0500	171.8625	412.6875
169.4625	170.2625	171.0625	171.8750	412.7125
169.4750	170.2750	171.0750	171.8875	412.7250
169.4875	170.2875	171.0875	171.9000	412.7375
169.5000	170.3000	171.1000	171.9125	412.7625
169.5125	170.3125	171.1125	171.9250	412.7750
169.5250	170.3250	171.1250	406.1250	415.1250
……...	……...	171.8250	406.1750	415.1750

(i) After [INSERT EFFECTIVE DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER], no assignments on the frequencies 406.125 MHz and 406.175 MHz will be made, but stations with existing assignments may continue to operate on these frequencies.

(ii) [Reserved]

* * * * *

(23) US23 The band 5351.5-5366.5 kHz (60 m band) is allocated to the amateur service on a secondary basis. In the band 5330.5-5406.4 kHz, the assigned frequencies 5332, 5348, 5373, and 5405 kHz are allocated to the amateur service on a secondary basis. Amateur service use of these four frequencies is restricted to a maximum effective radiated power of 100 W PEP and to the following emission types and designators: phone (2K80J3E), data (2K80J2D), RTTY (60H0J2B), and CW (150HA1A). Amateur service use of the 60m band frequencies must meet the requirements in part 97 of

these rules. Amateur operators using the data and RTTY emissions must exercise care to limit the length of transmissions so as to avoid causing harmful interference to Federal stations.

* * * * *

(78) US78 Military systems used for Identification, Friend or Foe (IFF) operations are authorized to operate in the band 960-1164 MHz on center frequencies 1030 MHz for interrogators and 1090 MHz for transponders on the condition that harmful interference will not be caused to the aeronautical radionavigation service (ARNS) or the aeronautical mobile (R) service (AM(R)S). These IFF systems will be evaluated on a case-by-case basis using DoD and FAA mutually agreed upon methodologies, technical criteria, and characteristics for calculating potential interference between ARNS/AM(R)S systems and systems used for military or other National defense IFF operations. This will include using DoD and FAA mutually agreed upon methodologies and criteria for considering the aggregation of civil and military systems in the 1030 and 1090 MHz bands in the evaluation.

* * * * *

(117) US117 In the band 406.1-410 MHz, the following provisions shall apply:

(i) Stations in the fixed and mobile services are limited to a transmitter output power of 125 watts, and new authorizations for stations, other than mobile stations, are subject to prior coordination by the applicant in the following areas:

(A) Within Puerto Rico and the U.S. Virgin Islands, contact Spectrum Manager, Arecibo Observatory, HC3 Box 53995, Arecibo, PR 00612. Phone: 787-878-2612, Fax: 787-878-1861, E-mail: prcz@naic.edu.

(B) Within 350 km of the Very Large Array (34° 04' 44" N, 107° 37' 06" W), contact Spectrum Manager, National Radio Astronomy Observatory, P.O. Box O, 1003 Lopezville Road, Socorro, NM 87801. Phone: 505-835-7000, Fax: 505-835-7027, E-mail: nrao-rfi@nrao.edu.

(C) Within 10 km of the Table Mountain Observatory (40° 08' 02" N, 105° 14' 40" W) and for operations only within the sub-band 407-409 MHz, contact Radio Frequency Manager, Department of Commerce, 325 Broadway, Boulder, CO 80305. Phone: 303-497-4619, Fax: 303-497-6982, E-mail: frequencymanager@its.bldrdoc.gov.

(ii) Non-Federal use is limited to the radio astronomy service and as provided by paragraphs (c)(13) and (55) of this section.

* * * * *

(128) US128 In the band 10-10.5 GHz, pulsed emissions are prohibited, except for the military services, and for weather radars on board meteorological satellites in the sub-band 10-10.025 GHz. The amateur service, the amateur satellite service, and the non-Federal radiolocation service, which shall not cause harmful interference to the Federal radiolocation service, are the only non-Federal services permitted in this band. The non-Federal radiolocation service is limited to survey operations as specified in paragraph (c)(108) of this section.

* * * * *

(139) US139 In the band 18.3-19.3 GHz, earth station licensees in the fixed-satellite service (space-to-Earth) may require that licensees of grandfathered stations in the fixed service cease operations in accordance with the provisions in § 101.95 of this chapter.

* * * * *

(224) US224 Federal systems utilizing spread spectrum techniques for terrestrial communication, navigation, and identification may be authorized to operate in the band 960-1215 MHz on the condition that harmful interference will not be caused to the aeronautical mobile (R) and aeronautical radionavigation services in the band 960-1164 MHz, military Identification Friend or Foe (IFF) systems on center frequencies 1030/1090 MHz, aeronautical mobile-satellite (R) service (Earth-to-space) in the band 1087.7-1092.3 MHz, and the aeronautical radionavigation and radionavigation-satellite (space-to-Earth) (space-to-space) services in the band 1164-1215 MHz. These systems will be handled on a case-by-case basis. Such systems are subject to a review at the national level for operational requirements and electromagnetic compatibility prior to development, procurement or modification.

* * * * *

(265) US265 The following provisions apply in the band 403-410 MHz:

(i) New frequency assignments to stations in the fixed and mobile services will not be made within the bands 405.9-406.0 MHz and 406.1-406.2 MHz.

(ii) The frequency drift characteristics of radiosondes must be taken into account when selecting their operating frequencies above 405 MHz to avoid transmitting in the band 406-406.1 MHz and all practical steps must be taken to avoid frequency drifting close to 406 MHz.

* * * * *

(270) US270 In the band 420-450 MHz, the following provisions apply to the amateur service:

(i) The peak envelope power of an amateur station must not exceed 50 watts in the following areas, unless expressly authorized through mutual agreement, on a case-by-case basis, between the Regional Director of the applicable FCC field office and the military area frequency coordinator at the applicable military base as listed in table 1 to paragraph (c)(270)(i).

Table 1 to paragraph (c)(270)(i)

Location	Geographic limitation	Coordination contact information
Arizona	None (statewide)	DoD AFC AZ, (520) 538-6423 DoD AFC AZ – DSN – 879-6423
New Mexico	None (statewide)	DoD AFC WSMR – DSN – 258-5417 DoD AFC WSMR, (575) 678-5417, usarmy.wsmr.imcomcentral.list.dodafc@mail.mil
Texas	West of longitude 104° W	
California	South of latitude 37° 10’ N	DoD Western AFC, (760) 939-6832 DoD Western – DSN – 437-6832
Nevada	South of latitude 37° 10’ N	Nevada AFC – DSN – 875-0607 Nevada AFC, (702) 679-0607, dodafc@nellis.af.mil usaf.nellis.99-abw.mbx.dod-afcorg@mail.smil.mil
Point Mugu, CA	Within 322 km of 34° 09’ N, 119° 11’ W	NMCSO SW DSN 312-735-9889 NMCSO SW at (619)545-9978, Nctssdsdni_nmcso_southwest@navy.mil
Florida	None (statewide)	DoD Eastern – DSN – 467-8436 DoD Eastern AFC, (321) 853-8426, 45sw.dodeafc@us.af.mil
Patrick AFB, FL	Within 322 km of 28° 21’ N, 080° 43’ W	

Eglin AFB, FL	Within 322 km of 30° 30' N, 086° 30' W	DoD Gulf – DSN – 875-5648 DoD Gulf AFC, (850) 883-5982
Beale AFB, CA	Within 240 km of 39° 08' N, 121° 26' W	HQ SpOC Spectrum Management Office, (719) 554-6400, SpOC.SMO@us.af.mil HQ SpOC DSN – 692-6400
Goodfellow AFB, TX	Within 200 km of 31° 25' N, 100° 24' W	
Warner Robins AFB, GA	Within 200 km of 32° 38' N, 083° 35' W	
Clear SFS, AK	Within 160 km of 64° 17' N, 149° 10' W	
Concrete, ND	Within 160 km of 48° 43' N, 097° 54' W	
Otis AFB, MA	Within 160 km of 41° 45' N, 070° 32' W	

(ii) In the sub-band 420-430 MHz, the amateur service is not allocated north of Line A (def. § 2.1).

* * * * *

(474) US474D Stations in the Earth exploration-satellite service (active) must not cause harmful interference to, or claim protection from, stations of the maritime radionavigation service in the band 9.2-9.3 GHz and the radiolocation service in the band 9.9-10.4 GHz.

* * * * *

(d) * * *

(62) NG62 In the bands 28.5-29.1 GHz and 29.25-29.5 GHz, stations in the fixed service operating under the following call signs may operate indefinitely on a secondary basis: KIL20, KME49, KQG58, KQH74, KSA96, KSE73, KZS88, WML443, WMP367, and WSL69.

* * * * *

(159) NG159 In the band 698-806 MHz, stations authorized under part 74, subpart F of this chapter may continue to operate indefinitely on a secondary basis to all other stations operating in that band.

* * * * *

PART 25—SATELLITE COMMUNICATIONS

5. The authority citation for part 25 continues to read as follows:

Authority: 47 U.S.C. 154, 301, 302, 303, 307, 309, 310, 319, 332, 605, and 721, unless otherwise noted.

6. Amend § 25.202 by adding paragraph (a)(13) to read as follows:

§ 25.202 Frequencies, frequency tolerance, and emission limits.

(a) * * *

(13) The 1087.7-1092.3 MHz band (center frequency 1090 MHz) is available for use by the aeronautical mobile-satellite (R) service (Earth-to-space) for the reception of Automatic Dependent Surveillance-Broadcast (ADS-B) emissions from aircraft.

* * * * *

PART 74—EXPERIMENTAL RADIO, AUXILIARY, SPECIAL BROADCAST AND OTHER PROGRAM DISTRIBUTIONAL SERVICES

7. The authority citation for part 74 continues to read as follows:

Authority: 47 U.S.C. 154, 302a, 303, 307, 309, 310, 325, 336 and 554.

8. Amend § 74.502 by revising paragraph (c) introductory text and paragraph (c)(1)(i) to read as follows:

§ 74.502 Frequency assignment.

* * * * *

(c) The frequencies listed in the tables found in the following paragraphs are available for assignment to aural broadcast STL and intercity relay stations. Licensees in the fixed-satellite service may require that licensees of grandfathered stations operating in the bands 18,760-18,820 MHz and 19,100-19,160 MHz cease operations in accordance with the provisions in § 101.95 of this chapter.

(1) * * *

(i) 5 MHz maximum authorized bandwidth channels:

Table 1 to paragraph (c)(1)(i)

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 Megahertz Separation	
17702.5	n/a

17707.5	n/a
17712.5	n/a
17717.5	n/a
17722.5	n/a
17727.5	n/a
17732.5	n/a
17737.5	n/a
18062.5	19622.5
18067.5	19627.5
18072.5	19632.5
18077.5	19637.5
18082.5	19642.5
18087.5	19647.5
18092.5	19652.5
18097.5	19657.5
18102.5	19662.5
18107.5	19667.5
18112.5	19672.5
18117.5	19677.5
18122.5	19682.5
18127.5	19687.5
18132.5	19692.5
18137.5	19697.5

* * * * *

9. Amend § 74.602 by:

a. Revising paragraph (g) introductory text;

b. Removing and reserving paragraph (g)(2); and

c. Revising paragraphs (g)(3) through (6).

The revisions read as follows:

§ 74.602 Frequency assignment.

* * * * *

(g) The frequencies listed in the tables found in the following paragraphs are available for assignment to television STL, television relay stations, and television translator relay stations. Licensees may use either a two-way link or one or both frequencies of a frequency pair for a one-way link and must coordinate proposed operations pursuant to procedures required in § 101.103(d) of this chapter. Licensees in the fixed-satellite service may require that licensees of grandfathered stations operating in the 18.3-18.58 GHz and 19.26-19.3 GHz bands cease operations in accordance with the provisions in § 101.95 of this chapter.

* * * * *

(3) 10 MHz maximum authorized bandwidth channels:

Table 4 to paragraph (g)(3)

Transmit (receive) (MHz)	**Receive (transmit) (MHz)**
1560 MHz Separation	
17705.0	n/a
17715.0	n/a
17725.0	n/a
17735.0	n/a
17745.0	19305.0
17755.0	19315.0
17765.0	19325.0
17775.0	19335.0
17785.0	19345.0
17795.0	19355.0
17805.0	19365.0
17815.0	19375.0
17825.0	19385.0
17835.0	19395.0

17845.0	19405.0
17855.0	19415.0
17865.0	19425.0
17875.0	19435.0
17885.0	19445.0
17895.0	19455.0
17905.0	19465.0
17915.0	19475.0
17925.0	19485.0
17935.0	19495.0
17945.0	19505.0
17955.0	19515.0
17965.0	19525.0
17975.0	19535.0
17985.0	19545.0
17995.0	19555.0
18005.0	19565.0
18015.0	19575.0
18025.0	19585.0
18035.0	19595.0
18045.0	19605.0
18055.0	19615.0
18065.0	19625.0
18075.0	19635.0
18085.0	19645.0
18095.0	19655.0
18105.0	19665.0
18115.0	19675.0

18125.0	19685.0
18135.0	19695.0

(4) 20 MHz maximum authorized bandwidth channels:

Table 5 to paragraph (g)(4)

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 MHz Separation	
17710.0	n/a
17730.0	n/a
17750.0	19310.0
17770.0	19330.0
17790.0	19350.0
17810.0	19370.0
17830.0	19390.0
17850.0	19410.0
17870.0	19430.0
17890.0	19450.0
17910.0	19470.0
17930.0	19490.0
17950.0	19510.0
17970.0	19530.0
17990.0	19550.0
18010.0	19570.0
18030.0	19590.0
18050.0	19610.0
18070.0	19630.0
18090.0	19650.0
18110.0	19670.0

18130.0	19690.0

(5) 40 MHz maximum authorized bandwidth channels:

Table 6 to paragraph (g)(5)

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 MHz Separation	
17720.0	n/a
17760.0	19320.0
17800.0	19360.0
17840.0	19400.0
17880.0	19440.0
17920.0	19480.0
17960.0	19520.0
18000.0	19560.0
18040.0	19600.0
18080.0	19640.0
18120.0	19680.0

(6) 80 MHz maximum authorized bandwidth channels:

Table 7 to paragraph (g)(6)

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 MHz Separation	
17740.0	n/a
17820.0	19380.0
17900.0	19460.0
17980.0	19540.0
18060.0	19620.0

* * * * *

PART 78—CABLE TELEVISION RELAY SERVICE

10. The authority citation for part 78 continues to read as follows:

Authority: 47 U.S.C. 152, 153, 154, 301, 303, 307, 308, 309.

11. Amend § 78.18 by:

a. Revising the introductory text of paragraph (a)(4);

b. Removing and reserving paragraph (a)(4)(ii) and,

c. Revising paragraphs (a)(4)(iii) through (vi).

The revisions read as follows:

§ 78.18 Frequency assignments.

(a) * * *

(4) The Cable Television Relay Service is also assigned frequencies in the 17,700-18,300 MHz and 19,300-19,700 MHz bands as listed in the tables found in the following paragraphs. These frequencies are co-equally shared with stations in other services under parts 25, 74, and 101 of this chapter. Licensees in the fixed-satellite service may require that licensees of grandfathered stations operating in the 18.3-18.58 GHz and 19.26-19.3 GHz bands cease operations in accordance with the provisions in § 101.95 of this chapter.

* * * * *

(iii) 10 MHz maximum authorized bandwidth channels:

Table 10 to paragraph (a)(4)(iii)

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 MHz Separation	
17705.0	n/a
17715.0	n/a
17725.0	n/a
17735.0	n/a
17745.0	19305.0

17755.0	19315.0
17765.0	19325.0
17775.0	19335.0
17785.0	19345.0
17795.0	19355.0
17805.0	19365.0
17815.0	19375.0
17825.0	19385.0
17835.0	19395.0
17845.0	19405.0
17855.0	19415.0
17865.0	19425.0
17875.0	19435.0
17885.0	19445.0
17895.0	19455.0
17905.0	19465.0
17915.0	19475.0
17925.0	19485.0
17935.0	19495.0
17945.0	19505.0
17955.0	19515.0
17965.0	19525.0
17975.0	19535.0
17985.0	19545.0
17995.0	19555.0
18005.0	19565.0
18015.0	19575.0
18025.0	19585.0

18035.0	19595.0
18045.0	19605.0
18055.0	19615.0
18065.0	19625.0
18075.0	19635.0
18085.0	19645.0
18095.0	19655.0
18105.0	19665.0
18115.0	19675.0
18125.0	19685.0
18135.0	19695.0

(iv) 20 MHz maximum authorized bandwidth channels:

Table 11 to paragraph (a)(4)(iv)

Transmit (receive) (MHz)	**Receive (transmit) (MHz)**
1560 MHz Separation	
17710.0	n/a
17730.0	n/a
17750.0	19310.0
17770.0	19330.0
17790.0	19350.0
17810.0	19370.0
17830.0	19390.0
17850.0	19410.0
17870.0	19430.0
17890.0	19450.0
17910.0	19470.0

17930.0	19490.0
17950.0	19510.0
17970.0	19530.0
17990.0	19550.0
18010.0	19570.0
18030.0	19590.0
18050.0	19610.0
18070.0	19630.0
18090.0	19650.0
18110.0	19670.0
18130.0	19690.0

(v) 40 MHz maximum authorized bandwidth channels:

Table 12 to paragraph (a)(4)(v)

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 MHz Separation	
17720.0	n/a
17760.0	19320.0
17800.0	19360.0
17840.0	19400.0
17880.0	19440.0
17920.0	19480.0
17960.0	19520.0
18000.0	19560.0
18040.0	19600.0
18080.0	19640.0
18120.0	19680.0

(vi) 80 MHz maximum authorized bandwidth channels:

Table 13 to paragraph (a)(4)(vi)

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 MHz Separation	
17740.0	n/a
17820.0	19380.0
17900.0	19460.0
17980.0	19540.0
18060.0	19620.0

* * * * *

PART 87—AVIATION SERVICES

12. The authority citation for part 87 continues to read as follows:

Authority: 47 U.S.C. 154, 303 and 307(e), unless otherwise noted.

13. Amend § 87.5 by revising the definition of "Automatic dependent surveillance—broadcast (ADS-B) Service" to read as follows:

§ 87.5 Definitions.

* * * * *

Automatic dependent surveillance—broadcast (ADS-B) Service. Broadcast transmissions from aircraft, supporting aircraft-to-aircraft, aircraft-to-ground, or aircraft-to-space station surveillance applications, including position reports, velocity vector, intent, and other relevant information about the aircraft.

* * * * *

14. Amend § 87.479 by revising the section heading and paragraphs (a) introductory text and (b) introductory text to read as follows:

§ 87.479 Harmful interference to radionavigation land stations or aeronautical mobile route service stations.

(a) Military or other Government stations have been authorized to establish wide-band systems using frequency-hopping spread spectrum techniques in the 960-1215 MHz band. Authorization for a Joint Tactical Information Distribution Systems (JTIDS) is permitted on the basis of non-interference to the aeronautical radionavigation service and aeronautical mobile-satellite (route) service (Earth-to-space) in this band. In order to accommodate the requirements for the system within the band, restrictions are imposed. Transmissions will be automatically prevented if:

* * * * *

(b) If radionavigation systems operating in the 960-1215 MHz band or aeronautical mobile-satellite (route) service (Earth-to-space) systems operating in the 960-1164 MHz band experience interference or unexplained loss of equipment performance, the situation must be reported immediately to the nearest office of the FAA, the National Telecommunications and Information Administration, Washington, DC 20504, or the nearest Federal Communications Commission field office. The following information must be provided to the extent available:

* * * * *

PART 90—PRIVATE LAND MOBILE RADIO SERVICES

15. 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.

16. Amend § 90.265 by revising paragraph (a)(8) to read as follows:

§ 90.265 Assignment and use of frequencies in the bands allocated for Federal use.

(a) * * *

(8) After [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER], no assignments for the frequencies 406.1250 MHz and 406.1750 MHz will be made, but stations with existing assignments may continue to operate on these frequencies.

* * * * *

PART 97—AMATEUR RADIO SERVICE

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

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

18. Amend § 97.301 by revising the entry for the "60 m" wavelength band in the table in paragraphs (b) through (d) to read as follows:

§ 97.301 Authorized frequency bands.

* * * * *

(b) * * *

Wavelength band	ITU Region 1	ITU Region 2	ITU Region 3	Sharing requirements see § 97.303 (Paragraph)
* * * * * * *				
HF	MHz	MHz	MHz	
* * * * * * *				
60 m	5.3515-5.3665	5.3515-5.3665	5.3515-5.3665	(h)
* * * * * * *				

(c) * * *

Wavelength band	ITU Region 1	ITU Region 2	ITU Region 3	Sharing requirements see § 97.303 (Paragraph)
* * * * * * *				
HF	MHz	MHz	MHz	
* * * * * * *				
60 m	5.3515-5.3665	5.3515-5.3665	5.3515-5.3665	(h)
* * * * * * *				

(d) * * *

Wavelength band	ITU Region 1	ITU Region 2	ITU Region 3	Sharing requirements see § 97.303 (Paragraph)
* * * * * * *				

HF	MHz	MHz	MHz	
* * * * * * *				
60 m.	5.3515-5.3665	5.3515-5.3665	5.3515-5.3665	(h)
* * * * * * *				

19. Amend § 97.303 by revising paragraph (h) to read as follows:

§ 97.303 Frequency sharing requirements.

* * * * *

(h) Amateur stations transmitting on frequencies in the 60 m band must not cause harmful interference to, and must accept interference from, stations authorized by:

(1) The United States (NTIA and FCC) and other nations in the fixed service; and

(2) Other nations in the mobile except aeronautical mobile service.

(3) In the 5330.5-5406.4 kHz band (60 m band), amateur stations may transmit only in the 5351.5-5366.5 kHz band and on the four center frequencies specified in the table below. For the discrete channels, control operators of stations transmitting phone, data, and RTTY emissions (emission designators 2K80J3E, 2K80J2D, and 60H0J2B, respectively) may set the carrier frequency 1.5 kHz below the center frequency as specified in the table below. For CW emissions (emission designator 150HA1A), the carrier frequency is set to the center frequency. For all 60 m spectrum, Amateur operators shall ensure that their emissions do not occupy more than 2.8 kHz.

60 M Band Frequencies (kHz)

Carrier	Center
5330.5	5332.0
5346.5	5348.0
5371.5	5373.0
5403.5	5405.0

* * * * *

20. Amend § 97.305 by revising the entry for the “60 m” wavelength band in the table in paragraph (c) to read as follows:

§ 97.305 Authorized emission types.

* * * * *

(c) * * *

(3) * * *

(iii) * * *

Wavelength band	Frequencies	Emission types authorized	Standards see § 97.307, paragraph(s):
		* * * * * * *	
HF:			
		* * * * * * *	
(iii) 60 m	5.332, 5.348, 5.3515-5.3665, 5.373, 5.405 MHz	Phone, RTTY, data	(f)(14)
		* * * * * * *	

21. Amend § 97.307 by revising paragraph (f)(14) to read as follows:

§ 97.307 Emission standards.

* * * * *

(f) * * *

(14) In the 60 m band:

(i) A station may transmit only phone, RTTY, data, and CW emissions. RTTY or data emissions must meet the digital code specifications listed in § 97.309. Emissions must not exceed a bandwidth of 2.8 kilohertz.

(ii) The control operator of a station transmitting data or RTTY emissions must exercise care to limit the length of transmissions so as not to cause harmful interference to United States Government stations.

22. Amend § 97.313 by revising paragraphs (f) and (i) to read as follows:

§ 97.313 Transmitter power standards.

* * * * *

(f) An Earth station or telecommand station may transmit on the 435-438 MHz segment with a maximum of 611 W effective radiated power (1 kW equivalent isotropically radiated power). The transmitting antenna elevation angle between the lower half-power (−3 dB relative to the peak or antenna bore sight) point and the horizon must always be greater than 10°. No other station may transmit with a transmitter power exceeding 50 W PEP on the UHF 70 cm band from an area specified in § 2.106(c)(270)(i) of this chapter, unless expressly authorized by the FCC after mutual agreement, on a case-by-case basis, between the Regional Director of the applicable field facility and the military area frequency coordinator at the applicable military base.

* * * * *

(i) 60 m band power requirements: No station may transmit on the frequencies 5.332, 5.348, 5.373, and 5.405 MHz in the 60 m band with a radiated power exceeding 100 W ERP. No station may transmit in the 5.3515-5.3665 MHz band with a radiated power exceeding 9.15 W ERP. For the purpose of computing ERP, the transmitter PEP will be multiplied by the antenna gain relative to a half-wave dipole antenna. A half-wave dipole antenna will be presumed to have a gain of 1 (0 dBd). Licensees using other antennas must maintain in their station records either the antenna manufacturer's data on the antenna gain or calculations of the antenna gain.

* * * * *

PART 101—FIXED MICROWAVE SERVICES

23. The authority citation for part 101 continues to read as follows:

Authority: 47 U.S.C. 154, 303.

§§ 101.83, 101.85, 101.89 and 101.91 [Removed and Reserved]

24. Remove and reserve § 101.83, 101.85, 101.89, and 101.91.

25. Amend § 101.95 by revising the section heading and paragraph (a) to read as follows:

§ 101.95 Provisions for grandfathered licensees in the 18.30-19.30 GHz band.

(a) FSS licensees may require the incumbent to cease operations, provided that the FSS licensee turns on a system within interference range of the incumbent, as determined by TIA Bulletin 10-F or any standard successor. FSS licensee notification to the affected FS licensee must be in writing and must provide the incumbent with no less than six months to vacate the spectrum. After the six-month notice period has expired, the FS licensee must relinquish its license to the Commission, unless it has entered into an agreement with the affected FSS licensee that allows it to continue to operate on a mutually agreed upon basis.

* * * * *

§ 101.97 [Removed and Reserved]

26. Remove and reserve § 101.97.

27. Amend § 101.147 by:

a. Revising the list of frequency bands in paragraph (a);

b. Removing note 30 of paragraph (a):

c. Revising paragraph (r) introductory text;

d. Removing and reserving paragraph (r)(4); and

e. Revising paragraphs (r)(7), (8), (10), (12), and (13).

The revisions read as follows:

§ 101.147 Frequency assignments.

(a) * * *

928.0–929.0 MHz (28)
932.0–932.5 MHz (27)
932.5–935 MHz (17)
941.0–941.5 MHz (27)
941.5–944 MHz (17) (18)
952.0–960.0 MHz (28)
1,850–1,990 MHz (20) (22)
2,110–2,130 MHz (1) (3) (7) (20) (23)
2,130–2,150 MHz (20) (22)
2,160–2,180 MHz (1) (2) (20) (23)
2,180–2,200 MHz (20) (22)
2,450–2,500 MHz (12)
2,650–2,690 MHz
3,700–4,200 MHz (8) (14) (25)
5,925–6,425 MHz (6) (14) (25)
6,425–6,525 MHz (24)
6,525–6.875 MHz (14) (33)
6,875–7,125 MHz (10), (34)

10,550–10,680 MHz (19)
10,700–11,700 MHz (8) (9) (19) (25)
11,700–12,200 MHz (24)
12,200–12,700 MHz (31)
12,700–13,200 (22), (34)
13,200–13,250 MHz (4) (24) (25)
14,200-14,400 MHz (24)

17,700-18,300 MHz (5) (10) (15)

19,300-19,700 MHz (5) (10) (15)

21,200–22,000 MHz (4) (11) (12) (13) (24) (25) (26)
22,000–23,600 MHz (4) (11) (12) (24) (25) (26)
24,250–25,250 MHz
29,100–29,250 MHz (5), (16)
31,000–31,300 MHz (16)
42,000–42,500 MHz
71,000–76,000 MHz (5) (17)
81,000–86,000 MHz (5) (17)
92,000–94,000 MHz (17)
94,100–95,000 MHz (17)

* * * * *

(r) In the bands 17,700 to 19,700 and 24,250 to 25,250 MHz: Operation of stations using frequencies in these bands is permitted to the extent specified in this paragraph (r). Licensees, except 24 GHz band licensees, may use either a two-way link or one frequency of a frequency pair for a one-way link and must coordinate proposed operations pursuant to the procedures required in § 101.103. The use of the band 18.3-19.3 GHz is limited to grandfathered stations. Licensees in the fixed-satellite service may require that licensees of grandfathered stations operating in the bands 18.3-19.3 GHz cease operations in accordance with the provisions in § 101.95. (Note that stations authorized as of September 9, 1983, to use frequencies in the band 17.7-19.7 GHz may, upon proper application, continue to be authorized for such operations, consistent with the above conditions in this paragraph (r) related to the 18.3-19.3 GHz band.) Applicants for one-way spectrum from 17.7-18.3 GHz for multichannel video programming distribution are governed by paragraph (r)(6) of this section. Licensees are also allowed to use one-way (unpaired) channels in the 17.7-17.74 GHz sub-band to pair with other channels in the FS portions of the 18 GHz band where, for example, the return pair is already in use and therefore blocked or in TDD systems. Stations used for MVPD operations in the 17.7-17.8 GHz band must coordinate with the Federal Government before operating in the zones specified in § 1.924(e) of this chapter.

* * * * *

(7) 10 Megahertz maximum authorized bandwidth channels:

Table 7 to paragraph (r)(7)

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 Megahertz Separation	
17705.0	N/A
17715.0	N/A
17725.0	N/A
17735.0	N/A
17745.0	19305.0
17755.0	19315.0
17765.0	19325.0
17775.0	19335.0
17785.0	19345.0
17795.0	19355.0
17805.0	19365.0
17815.0	19375.0
17825.0	19385.0
17835.0	19395.0
17845.0	19405.0
17855.0	19415.0
17865.0	19425.0
17875.0	19435.0
17885.0	19445.0
17895.0	19455.0
17905.0	19465.0
17915.0	19475.0
17925.0	19485.0
17935.0	19495.0

17945.0	19505.0
17955.0	19515.0
17965.0	19525.0
17975.0	19535.0
17985.0	19545.0
17995.0	19555.0
18005.0	19565.0
18015.0	19575.0
18025.0	19585.0
18035.0	19595.0
18045.0	19605.0
18055.0	19615.0
18065.0	19625.0
18075.0	19635.0
18085.0	19645.0
18095.0	19655.0
18105.0	19665.0
18115.0	19675.0
18125.0	19685.0
18135.0	19695.0

(8) 20 Megahertz maximum authorized bandwidth channels:

Table 8 to paragraph (r)(8)

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 Megahertz Separation	
17710.0	N/A
17730.0	N/A
17750.0	19310.0

17770.0	19330.0
17790.0	19350.0
17810.0	19370.0
17830.0	19390.0
17850.0	19410.0
17870.0	19430.0
17890.0	19450.0
17910.0	19470.0
17930.0	19490.0
17950.0	19510.0
17970.0	19530.0
17990.0	19550.0
18010.0	19570.0
18030.0	19590.0
18050.0	19610.0
18070.0	19630.0
18090.0	19650.0
18110.0	19670.0
18130.0	19690.0

* * * * *

(10) 40 Megahertz maximum authorized bandwidth channels:

Table 10 to paragraph (r)(10)

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 Megahertz Separation	
17720.0	N/A
17760.0	19320.0
17800.0	19360.0

17840.0	19400.0
17880.0	19440.0
17920.0	19480.0
17960.0	19520.0
18000.0	19560.0
18040.0	19600.0
18080.0	19640.0
18120.0	19680.0

* * * * *

(12) 80 Megahertz maximum authorized bandwidth channels:

Table 12 to paragraph (r)(12)

Transmit (receive) (MHz)	Receive (transmit) (MHz)
1560 Megahertz Separation	
17740.0	N/A
17820.0	19380.0
17900.0	19460.0
17980.0	19540.0
18060.0	19620.0

(13) The frequencies on channels 35-39 listed in Table 13 are available for point-to-multipoint systems and are available by geographic area licensing in the 24 GHz Service to be used by the relevant licensee. The 24 GHz spectrum can be aggregated or disaggregated and does not have to be used in the transmit/receive manner shown except to comply with international agreements along the U.S. borders. Channels 35 through 39 are licensed in the 24 GHz Service by Economic Areas for any digital fixed service. Channels may be used at either nodal or subscriber station locations for transmit or receive but must be coordinated with adjacent channel and adjacent area users in accordance with the provisions of § 101.509. Stations also must comply with all applicable international coordination agreements.

Table 13 to paragraph (r)(13)

Channel No.	Nodal station frequency band (MHz) limits	User station frequency band (MHz) limits
35	24,250-24,290	25,050-25,090
36	24,290-24,330	25,090-25,130
37	24,330-24,370	25,130-25,170
38	24,370-24,410	25,170-25,210
39	24,410-24,450	25,210-25,250

* * * * *

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