FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 2

[ET Docket No. 13–115 and RM–11341; FCC 23–76; FR ID 198084]

Allocation of Spectrum for Non-Federal Space Launch Operations

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: In this document the Commission proposes to adopt three footnotes to the Table of Frequency Allocations to address the use of spectrum by manned and unmanned spacecraft during space missions. The Commission also seeks further comment on whether to include new spectrum allocations in specific bands for communications with cargo and crew capsules and payload communications with the International Space Station (ISS) and other crewed space stations. In addition, the Commission seeks further comment on expanding the use of the 2360–2395 MHz band, both in the context of additional uses to the band as well as expanding use in the band beyond the three frequencies currently designated for telemetry and telecommand operations of launch vehicles.

DATES: Comments are due on or before March 4, 2024 and reply comments are due on or before April 1, 2024.

ADDRESSES: Pursuant to §§ 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS). *See* Electronic Filing of Documents in Rulemaking Proceedings, 63 FR 24121 (1998). You may submit comments, identified by ET Docket No. 13–115 and RM–11341, by any of the following methods:

- *Electronic Filers:* Comments may be filed electronically using the internet by accessing the ECFS: *https://www.fcc.gov/ecfs/.*
- *Paper Filers:* Parties who choose to file by paper must file an original and one copy of each filing.

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

- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 45 L Street NE, Washington, DC 20554.
- Effective March 19, 2020, and until further notice, the Commission no longer accepts any hand or messenger delivered filings. This is a temporary measure taken to help protect the health and safety of individuals, and to mitigate the transmission of COVID–19. *See FCC Announces Closure of FCC Headquarters Open Window and Change in Hand-Delivery Policy, Public Notice,* 35 FCC Rcd 2788, 2788–89 (OS 2020), *https://www.fcc.gov/document/fcc-closes-headquarters-open-window-and-changes-hand-delivery-policy.*

People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, computer diskettes, audio recordings), send an email to *fcc504@fcc.gov* or call the Consumer & Governmental Affairs Bureau at 202–418–0530 (voice), 202–418–0432 (TTY).

FOR FURTHER INFORMATION CONTACT: Nicholas Oros of the Office of Engineering and Technology, at *Nicholas.Oros@fcc.gov* or 202–418–0636; Linda Chang of the Wireless Telecommunications Bureau at *Linda.Chang@fcc.gov* or 202–418–1339; or Julia Malette of the Space Bureau at *Julia.Malette@fcc.gov* or 202–418–2453.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Second Further Notice of Proposed Rulemaking (*FNPRM*), ET Docket No. 13–115 and RM–11341; FCC 23–76, adopted on September 21, 2023 and released on September 22, 2023. The full text of this document is available for public inspection and can be downloaded at: *https://docs.fcc.gov/public/attachments/FCC-23-76A1.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).

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

[1] 47 CFR 1.1200 *et seq.*

Procedural Matters

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

Initial Regulatory Flexibility Analysis. As required by the Regulatory Flexibility Act, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the

possible significant economic impact on a substantial number of small entities of the proposals addressed in this *Second Further Notice of Proposed Rulemaking.* The IRFA is set forth in Appendix E of the FCC document found at *https://docs.fcc.gov/public/attachments/FCC-23-76A1.pdf.* Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines for comments on the *Second Further Notice of Proposed Rulemaking,* and should have a separate and distinct heading designating them as responses to the IRFA.

Accessing Materials

Providing Accountability Through Transparency Act: The Providing Accountability Through Transparency Act requires each agency, in providing notice of a rulemaking, to post online a brief plain-language summary of the proposed rule. Accordingly, the Commission will publish the required summary of the Second Further Notice of Proposed Rulemaking at *https://www.fcc.gov/proposed-rulemakings.*

Synopsis

NASA Footnotes

NTIA has requested that the Commission add three footnotes to the Allocation Table to address the use of spectrum by manned and unmanned spacecraft during space missions. The text of these requested footnotes is as follows:

USxxx Use of the bands 2290–2293 MHz and 2297–2300 MHz by Federal and non-Federal space stations may be authorized on a primary basis for the specific purpose of emergency transmissions from manned spacecraft used in the exploration and use of outer space, including the Moon and other celestial bodies. This allocation is restricted to emergency transmissions from manned spacecraft when experiencing emergency situations. Additionally, the bands 2025–2110 MHz and 2110–2120 MHz may also be authorized on a primary basis for transmissions of related commands to the spacecraft. Such operations should be conducted in accordance with Recommendation ITU–R SA.1863.

USyyy In the band 2213.5–2218.5 MHz, non-Federal space stations operating in the space operation service providing transportation service of crew to and from the International Space Station, may be authorized on a primary basis to transmit in the space-to-Earth direction, to authorized receiving stations, subject to such conditions as may be applied on a case-by-case basis. Such transmissions shall not cause harmful interference to authorized Federal stations. The power flux-density at the Earth's surface from such emissions from these non-Federal stations shall not exceed −144 to −154 dBW/m²/4 kHz, depending on the angle of arrival, in accordance with ITU Radio Regulation No. 21.16.

USzzz In the band 2200.2–2206.2 MHz, non-Federal space stations operating in the space operation service may be authorized on a primary basis to transmit to the International Space Station (ISS) while within 30 km of the ISS, subject to such conditions as may be applied on a case-by-case basis. Such transmissions shall not cause harmful interference to authorized Federal stations. The power-flux-density of such emissions at the Earth's surface from these non-Federal stations shall not exceed −144 to −154 dBW/m²/4 kHz, depending on the angle of arrival, in accordance with ITU Radio Regulation No. 21.16. ITU Radio Regulation No. 5.392 also applies.

Draft footnote USxxx applies to emergency transmissions to and from manned spacecraft in two portions of the 2200–2290 MHz band as well as the 2025–2110 MHz and 2110–2120 MHz bands. The Commission proposes to add this footnote to the allocations table recognizing the importance of emergency communications to safeguard human life during manned space missions. The Commission seeks comment on this proposal. Because emergency communications from manned spacecraft are likely to occur infrequently the Commission tentatively concludes that making this spectrum available for this purpose will not present a significant interference risk to other users of these bands. As the 2200–2290 MHz band has a space operation allocation in the space-to-earth direction, permitting transmissions from spacecraft is appropriate. The 2025–2110 MHz band has a primary Federal space operations allocation in the Earth-to-space direction which is consistent with making transmissions to manned spacecraft. The 2110–2120 MHz band has a primary space research service (deep space) (Earth-to-space) allocation at Goldstone California. Given that use of the 2110–2120 MHz for space transmissions is currently limited to this one location, should USXXX have a similar limitation on use of this band? Should any other restrictions be placed on the use of these bands for emergency communications for manned spacecraft to avoid harmful interference from occurring to other users of these bands?

Draft footnote USyyy applies to transmissions to ground stations by non-Federal spacecraft transporting crew to and from the International Space Station (ISS). NASA currently has contracts with SpaceX and Boeing to shuttle crew members to the ISS. There is currently a federal Space Operation space-to-Earth allocation for the 2200–2290 MHz band, but the non-federal Space Operation allocation for this band is limited to use for pre-launch testing and space launch operations and therefore does not permit transmissions by crew transport spacecraft after the launch phase of the mission. Given the importance of reliable communications in safeguarding human life during manned space missions, the Commission proposes to add this footnote to the Allocation Table. The Commission tentatively concludes that the power flux limits on these transmissions will prevent interference from occurring to receivers on the earth's surface from these transmissions. The Commission seeks comment on this proposal.

Draft footnote USzzz applies to spacecraft that are transmitting in portions of the 2200–2290 MHz band within 30 kilometers of the ISS. NASA has contracts with commercial companies to transport both supplies and crew to the ISS. These spacecraft need to communicate with the ISS when they are docking. As the Space Operation allocation for the 2200–2290 MHz band is limited to use for pre-launch testing and space launch operations, there is no allocation that permits these non-Federal spacecraft to communicate with the ISS in this band. The Commission proposes to add this footnote to the Allocation Table in recognition of the importance of these space missions as well as the limited number of such missions which should present a minimal risk of interference occurring to other users of the band. As with USyyy, the Commission tentatively concludes that the power flux limits on these transmissions will prevent interference from occurring to receivers on the earth's surface from these transmissions. The Commission seeks comment on this proposal.

NASA has adopted a transition plan that envisions deorbiting the ISS in early 2031. Prior to deorbiting the ISS, NASA intends to purchase crew time from at least two Commercial LEO Destinations (CLDs)—*i.e.,* private space stations. As the projected lifetime of the ISS is now less than eight years, the Commission seeks comment on whether the new proposed footnotes USyyy and USzzz should be limited to spacecraft traveling to the ISS. Should these footnotes also apply to future manned space stations that are operated by commercial entities? Should they be limited to manned space stations only in low earth orbit or apply more generally to manned space stations anywhere beyond the Earth's atmosphere?

Space Operation

In this *FNPRM* the Commission continues its efforts to support the expanding activities of the commercial

space sector that benefit the public interest. Specifically, the Commission focuses on the question of spectrum allocation and licensing processes for certain post-space launch activities, particularly with respect to certain space operations communications currently addressed through experimental licensing, such as crew or cargo capsules destined for the International Space Station (ISS), or similar operations planned for the future, such as spectrum requirements for commercial crewed space stations. Commenters also raised a number of issues that overlap the topics currently being considered in the *Space Innovation; Facilitating Capabilities for In-space Servicing, Assembly, and Manufacturing* proceeding (FCC 22–66, IB Dockets 22–271, 22–272). This broader range of topics will be addressed separately and concurrently with that proceeding, as noted in the accompanying *Second Report and Order.*

Spectrum Allocation for Certain Post-Space Launch Payload Operations. The Commission seeks further comment on whether to include new spectrum allocations in specific bands for communications with cargo and crew capsules and payload communications with the ISS and other crewed space stations. In the *FNPRM* the Commission sought comment on whether there are improvements to the licensing process that could facilitate more routine licensing for certain payload activities currently addressed through experimental licensing. Specifically, the Commission noted the current use by SpaceX of S-band frequencies for cargo and crew capsules and links with the ISS as well as use by Orbital Sciences Corporation, a Northrop Grumman Systems Corporation Affiliate, of 2287.5 MHz (space-to-Earth) as well as 2287.5 MHz for links between the Cygnus spacecraft and TDRSS, and 2203.2 MHz for links between the Cygnus and the ISS. The Commission sought comment on whether any changes to the Table of Frequency Allocations being adopted or proposed for the 2025–2110 MHz and 2200–2290 MHz frequency bands were needed to provide for these cargo and crew capsule communications, what are the spectrum requirements for such operations, and if there are other frequency bands that the Commission should also consider for such uses.

In response, SpaceX noted that it has, through the STA process, used the 2025–2110 MHz band for its Dragon capsule to communicate with the ISS and TDRSS, and supports an expanded approach for 2200–2290 MHz band, which would alleviate the need for seeking an STA to cover communication between SpaceX's Dragon and the ISS and TDRSS. Northrop Grumman also noted its use of the 2200–2290 MHz band for ISS-related communications and supports the inclusion of payload operations in the allocation for this band, which is used by its Cygnus mission. Northrop Grumman also suggested that the Commission adopt a fleet licensing process for payload activities, in specific for ISS-related activities, such as its Cygnus mission.

Other commenters supported allocations in the S-band as well as the L-band and X-band for OOS and RPO operations generally. Industry Participants assert that slightly expanding the 2200–2290 MHz and 2025–2110 MHz allocations to include RPO alongside space launch and reentry ''would provide a safer space environment for time-critical RPO communications, where failure can result in loss of spacecraft, termination of a mission, and potentially loss of human lives.'' They also note that commercial operators have already invested in technology that supports OOS operations in the S-band. Black Sky suggests opening the band for all on-orbit missions to put the U.S. industry on an equal footing with international operators. Spaceflight recommended that the Commission consider 8025–8400 MHz (X-band) and 1610–1626.5 MHz (L-band) for secondary allocation for payload operations specifically. In response to Spaceflight's suggestion for allocation in the L-band, Globalstar asserts that allocation for inter satellite links and space-to-space communication between a launch vehicle and satellites in the L-band is unnecessary and should continue to be authorized only on an experimental basis. In particular Globalstar focuses on the Big LEO band where Globalstar operates and has concerns of harmful interference. Federal agencies were generally opposed to changing the status of the S-band for payload operations as discussed in the accompanying *Second Report and Order,* however NTIA, NASA, DOD, and DOC note that the 2360–2395 MHz band could be used as an alternative to expanding allocation in 2200–2290 MHz band. The Commission considers this alternative in further discussion below.

As discussed in the accompanying *Second Report and Order,* the Commission concludes that deliberations for providing S-band, or other possible bands (such as L-band and X-band suggestions by Spaceflight), allocation for OOS/RPO more generally be continued via the ongoing ISAM proceeding. However, the Commission seeks further comment on possible necessary changes to the Table of Frequency Allocations to account for space-to-space communications between a crew or cargo capsule and crewed space stations, including in bands outside the S-band. Do the three footnotes requested by NTIA meet this need? Should the Commission adopt an allocation for ISS-related space-to-space communications in this proceeding? Should the Commission expand such an allocation to account for future crewed space stations and operations not connected to the ISS? Should the rules addressing these operations be included in part 25 of the FCC's rules?

Suborbital Spaceflight Operations. Additionally, the Commission seeks further comment on spectrum allocation and licensing needs related to suborbital spaceflight. Are there aspects of suborbital commercial spaceflight that fall outside of the definition the Commission has adopted for space launch operations that requires further licensing and spectrum allocation considerations? In response to the *FNPRM,* Virgin Galactic noted its use, through experimental licensing, of the VHF band, L-band, and S-band for its suborbital flights and suggested that the Commission develop and adopt rules allowing allocation for commercial spaceflight operations in these bands. Specifically, Virgin Galactic has operated in the 123.225 MHz, 123.275 MHz, 123.375 MHz, 123.450 MHz, and 123.525 MHz (VHF) frequencies, the 1445.5 MHz, 1451.5 MHz, 1462.5 MHz, 1470.5 MHz 1480.5 MHz (L-band) frequencies, and the 2360–2390 MHz (S-band) frequencies. Communications in these bands have included telemetry as well as video and voice communications. The *Second Report and Order* the Commission adopted has limited use of the S-band to telemetry and tracking communications for launch under part 26. Should the Commission establish allocations beyond experimental or STA licensing for voice or video communications for these types of crewed suborbital spaceflight operations?

In further considering communication related to crewed suborbital operations the Commission notes the importance of safety of life communications. Currently, operators who obtain experimental licensing approvals or STAs for these activities are communicating on a non-protected, non-interference basis and must cease operations in the event interference with a primary or secondary allocated operator occurs. The Commission seeks comment on how it should ensure a

more permanent level of protection for suborbital spaceflight operation communications, while recognizing the need to avoid harmful interference with other important operations in already encumbered bands. Should any of the portions of the VHF, L-band, or S-band that have been authorized experimentally for communications beyond telemetry be allocated for suborbital spaceflight operations on a primary or secondary basis? Are there other bands beyond those the Commission is considering today that might be suitable for these operations?

Use of 2360–2395 MHz Band or Other Bands for Commercial Space Launch

Three frequencies in the 2360–2395 MHz band are available for both Federal and non-Federal telemetry and telecommand operations of launch vehicles. Beyond these three frequencies, the band is assigned primarily for aeronautical telemetry and telecommand operations for flight testing of aircraft and missiles. In the *FNPRM,* the Commission requested comment on changes that it could take in administering the 2360–2395 MHz space launch rules. For example, the Commission sought comment on whether it should administer the 2360–2395 MHz space launch use, which is currently regulated under subpart J of the Commission's part 87 rules, under the same rule part as the commercial space launch rules applicable to the 2200–2290 MHz band adopted in the *Second R&O* or retain the current part 87 designation.

In response to the *FNPRM,* certain commenters filed in support of expanding space launch use in the 2360–2395 MHz band. For example, SpaceX argues that uses of the band should extend to the full range of space operations, while Virgin Galactic encourages the Commission to ensure that any primary allocation of the band, as well as associated service and technical rules, facilitate telemetry and video downlink, which it states is consistent with Virgin Galactic's use of the spectrum to monitor the health and safety of its spaceflight participants and crew. NTIA, NASA, and DOD advocate the use of the 2360–2395 MHz band as an alternative to the 2200–2290 MHz and 2025–2110 MHz bands, arguing that the three existing frequencies in the 2360–2395 MHz band provide additional spectrum.

AFTRCC, however, argues that there should not be an expansion of the band and urges the Commission to limit the allocation in that band to just the three channels already allocated for space launches, and avoid proposing allocations for space operations that include bands needed for flight testing and space launches. In support, AFTRCC asserts that space launches create large interference cones to flight test operations, and that even a few seconds of interference could disrupt the most critical portions of a flight test and would add a significant risk factor to aircraft flight tests in this band. Similarly, Boeing advises that the Commission should exercise caution with respect to the use of additional portions of the 2360–2395 MHz band for launch operations or in-orbit activities. Boeing asserts that the greater 2360–2395 MHz band is heavily used to support non-federal flight test operations in locations throughout the United States, and that use of the band by commercial aircraft manufacturers is intensive and increasing.

The Commission seeks further comment on expanding the use of the 2360–2395 MHz band, both in the context of additional uses to the band as well as expanding use in the band beyond the three frequencies currently designated. While the Commission is aware that this band is heavily used for flight test purposes and agrees that it should proceed cautiously with respect to measures that have the potential to introduce additional interference to operations in the band, the Commission also recognizes that the 2200–2290 MHz and 2025–2110 MHz bands may not accommodate the increasing numbers of operations in the future. While the Commission finds that providing space launch operators with increased certainty regarding access to the 2200–2290 MHz and 2025–2110 MHz band is in the public interest and that careful coordination will be effective in enabling use of these bands, the record supports further review of additional spectrum options. Accordingly, the Commission seeks to better understand the current use of the 2360–2395 MHz band. The Commission seeks information on how both flight testing and launch operations in the band are coordinated and conducted, and whether there are measures that could help increase use by space launch operations without increasing the risk of interference to flight test operations. For example, space launch operations in the band are subject to pre-grant frequency coordination, but do not have a coordination requirement once an authorization is granted. Would revising the 2360–2395 MHz band rules to apply provisions that are now applicable to the 2200–2290 MHz and 2025–2110 MHz band, including the per launch coordination requirement, help to facilitate increased use of space launch operations in the 2360–2395 MHz band?

Further, the Commission received limited comment on how to administer rules relating to the 2360–2395 MHz band, in particular comment regarding whether and how to harmonize existing 2360–2395 MHz licensing and technical rules with rules now applicable to the 2200–2290 MHz and 2025–2110 MHz band. Accordingly, the Commission seeks further comment on certain 2360–2395 MHz issues that were first raised in the *FNPRM.* The Commission requests additional comment on how best to administer the space launch rules for this band. Should the Commission incorporate the 2360–2395 MHz space launch use into new part 26 or should it retain the part 87 designation? If the Commission administers the 2360–2395 MHz space launch use under the new rule part, should the Commission revises its rules to apply the same non-exclusive licensing scheme the Commission adopts today or retain the existing licensing framework provided under the current part 87 flight testing rules? In that event, should the Commission continues to apply the technical rules currently applicable to these services? The Commission also notes that space launch telemetry and telecommand operations in the 2360–2395 MHz band occur under a Mobile allocation. The Commission seeks further comment on whether it should add a primary Space Operation allocation to the band, subject to the same restrictions as apply to such operations under the Mobile allocation as specified in footnote US276 of the U.S. Table. Further, Industry Participants state that, while they appreciate the suggestion of increased 2360–2395 MHz band use in light of congestion in the S-band, the International Table of Frequency Allocations reserves this band for Fixed Service, Mobile Service, Amateur, and Radiolocation services, and consequently it would be necessary to modify that allocation to permit use of that band at the international level. Industry Participants state that a failure to obtain such a modification would be a hardship for on-orbit operators seeking mission support from non-U.S. ground stations. The Commission requests comment regarding this issue.

With respect to additional spectrum options for space launch operations, Virgin Galactic suggests that the Commission expand the use of the 1435–1525 MHz band for telemetry and safety of flight during spaceflight operations. As in the case of the 2360–2395 MHz band, the 1435–1525 MHz band is assigned primarily for

aeronautical telemetry and telecommand functions associated with flight testing. Space launch and reentry operations are permissible uses of the band. AFTRCC, however, argues that this band is the ''workhorse spectrum'' for aeronautical flight testing, and that interference with sensitive flight test equipment risks pilot safety and the success of test maneuvers. Accordingly, says AFTRCC, this band should be reserved for aeronautical mobile telemetry uses. The Commission seeks comment on whether the 1435–1525 MHz band can effectively accommodate space launch operations, or whether such use should be discouraged despite being permissible under our rules. As in the case with the 2360–2395 MHz band above, the Commission seeks information regarding the current usage of this band, how operations are conducted and coordinated, and whether there are measures that may be taken to successfully integrate space launch use along with flight test operations. Would per launch coordination including an enhanced scheduling mechanism be helpful? To the extent that commenters agree that space launch activities can occur along with flight test operations, the Commission request that commenters also speak to any changes—similar to those discussed above for the 2360–2395 MHz band—the Commission should make to harmonize any space launch use in this band with rules applicable to the 2200–2290 MHz and 2025–2110 MHz bands. However, in the event that commenters believe that increased use of either of these bands for space launch uses should not be accommodated, the Commission requests comment on other spectrum bands that may be appropriate candidates.

Ordering Clauses

Accordingly, *it is ordered* that pursuant to Sections 1, 2, 4(i), 5(c), 301, 303(c), 303(f), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 151, 152, 154(i), 155(c), 301, 303(c), 303(f), and 303(r), and section 1.411 of the Commission's rules, 47 CFR 1.411, this *Second Report and Order and Second Further Notice of Proposed Rulemaking is hereby adopted.*

It is further ordered that the Office of the Secretary, Reference Information Center, *shall send* a copy of the *Second Report and Order and Second Further Notice of Proposed Rulemaking* including the Final Regulatory Flexibility Analysis and the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

Federal Communications Commission.

Marlene Dortch,

Secretary.

Proposed Rules

For the reasons discussed in the preamble, the Federal Communications Commission proposes to amend 47 CFR part 2 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 § 2.106 paragraph (a) by revising the Table of Frequency Allocations, pages 36 and 37 to read as follows:

§ 2.106 Table of Frequency Allocations.

(a) * * *

BILLING CODE 6712–01–P

1700-1710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341		1700-1710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341 5.384	5.341	5.341 US88	
1710-1930 FIXED MOBILE 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.386 5.387 5.388			1710-1761 5.341 US91 US378 US385	1710-1780 FIXED MOBILE 5.341 US91 US378 US385	
			1761-1780 SPACE OPERATION (Earth-to-space) G42 US91		
			1780-1850 FIXED MOBILE SPACE OPERATION (Earth-to-space) G42	1780-1850	
			1850-2025	1850-2000 FIXED MOBILE	RF Devices (15) Personal Communications (24) Wireless Communications (27) Fixed Microwave (101)
1930-1970 FIXED MOBILE 5.388A 5.388B 5.388	1930-1970 FIXED MOBILE 5.388A 5.388B Mobile-satellite (Earth-to-space) 5.388	1930-1970 FIXED MOBILE 5.388A 5.388B 5.388			
1970-1980 FIXED MOBILE 5.388A 5.388B					

5.388					
1980-2010 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B 5.389F					
2010-2025 FIXED MOBILE 5.388A 5.388B 5.388	2010-2025 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.388 5.389C 5.389E	2010-2025 FIXED MOBILE 5.388A 5.388B 5.388		2000-2020 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 2020-2025 FIXED MOBILE	Satellite Communications (25) Wireless Communications (27)
2025-2110 SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to-space) (space-to-space) 5.392			2025-2110 SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) SPACE RESEARCH (Earth-to-space) (space-to-space) FIXED MOBILE 5.391 5.392 US90 US92 US222 US346 US347 USxxx	2025-2110 FIXED NG118 MOBILE 5.391 Space Operation (Earth-to-space) US94 5.392 US90 US92 US222 US346 US347 USxxx	Space Launch Services (26) TV Auxiliary Broadcasting (74F) Cable TV Relay (78) Local TV Transmission (101J)

Table of Frequency Allocations 2110-2483.5
MHz (UHF)

International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
2110-2120 FIXED MOBILE 5.388A 5.388B SPACE RESEARCH (deep space) (Earth-to-space) 5.388			2110-2120 US252 USxxx	2110-2120 FIXED MOBILE US252 USxxx	Public Mobile (22) Wireless Communications (27)
2120-2170 FIXED MOBILE 5.388A 5.388B 5.388	2120-2160 FIXED MOBILE 5.388A 5.388B Mobile-satellite (space-to-Earth) 5.388 2160-2170 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.388 5.389C 5.389E	2120-2170 FIXED MOBILE 5.388A 5.388B 5.388	2120-2200	2120-2180 FIXED MOBILE NG41	Fixed Microwave (101)
2170-2200 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A 5.389F				2180-2200 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth)	Satellite Communications (25) Wireless

			Communications (27)
2200-2290 SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (space-to-Earth) (space-to-space) 5.392	2200-2290 SPACE OPERATION (space-to-Earth) (space-to-space) US96 EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED (line-of-sight only) MOBILE (line-of-sight only including aeronautical telemetry, but excluding flight testing of manned aircraft) 5.391 SPACE RESEARCH (space-to-Earth) (space-to-space) 5.392 US303 USyyy USzzz	2200-2290 US96 US303 USyyy USzzz	
2290-2300 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	2290-2300 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth) USxxx	2290-2300 SPACE RESEARCH (deep space) (space-to-Earth) USxxx	

2300-2450 FIXED MOBILE 5.384A Amateur Radiolocation	2300-2450 FIXED MOBILE 5.384A RADIOLOCATION Amateur	2300-2305 G122	2300-2305 Amateur	Amateur Radio (97)
		2305-2310 US97 G122	2305-2310 FIXED MOBILE except aeronautical mobile RADIOLOCATION Amateur US97	Wireless Communications (27) Amateur Radio (97)

■ 3. Amend § 2.106 by adding (c)(96)(i) through (iii) to read as follows:

(c) * * *

(96) * * *

(i) USxxx Use of the bands 2290–2293 MHz and 2297–2300 MHz by Federal and non-Federal space stations may be authorized on a primary basis for the specific purpose of emergency transmissions from manned spacecraft used in the exploration and use of outer space, including the Moon and other celestial bodies. This allocation is restricted to emergency transmissions from manned spacecraft when experiencing emergency situations. Additionally, the bands 2025–2110 MHz and 2110–2120 MHz may also be authorized on a primary basis for transmissions of related commands to the spacecraft. Such operations should be conducted in accordance with Recommendation ITU–R SA.1863.

(ii) USyyy In the band 2213.5–2218.5 MHz, non-Federal space stations operating in the space operation service providing transportation service of crew to and from the International Space Station, may be authorized on a primary basis to transmit in the space-to-Earth direction, to authorized receiving stations, subject to such conditions as may be applied on a case-by-case basis. Such transmissions shall not cause harmful interference to authorized Federal stations. The power flux-density at the Earth's surface from such emissions from these non-Federal stations shall not exceed −144 to −154 dBW/m²/4 kHz, depending on the angle of arrival, in accordance with ITU Radio Regulation No. 21.16.

(iii) USzzz In the band 2200.2–2206.2 MHz, non-Federal space stations operating in the space operation service may be authorized on a primary basis to transmit to the International Space Station (ISS) while within 30 km of the ISS, subject to such conditions as may be applied on a case-by-case basis. Such transmissions shall not cause harmful interference to authorized Federal stations. The power-flux-density of such emissions at the Earth's surface from these non-Federal stations shall not exceed −144 to −154 dBW/m²/4 kHz, depending on the angle of arrival, in accordance with ITU Radio Regulation No. 21.16. ITU Radio Regulation No. 5.392 also applies.

* * * * *

[FR Doc. 2024–01995 Filed 1–31–24; 8:45 am]

BILLING CODE 6712–01–C