

WAIVER REQUESTS

SpaceX continues to seek innovative and more efficient uses of spectrum to achieve its mission to ensure that every person in the world can access high-quality service and ubiquitous connectivity wherever they live, work, or travel. Since SpaceX initially applied for its second-generation (“Gen2”) system, the age of artificial intelligence has taken hold. AI-enabled applications, services, and devices stand poised to supercharge innovation, scientific discovery, human creativity, and economic growth in ways that benefit humanity now and into the future. But delivering these benefits requires a communications infrastructure with the capacity, coverage, and resilience to swiftly and evenly distribute those benefits to everyone, everywhere. The Gen3 system will provide the communications backbone of the AI age. To that end, SpaceX requests several waivers of the Commission’s rules to unlock spectrum for next-generation satellite service that will enable the Gen3 system to deliver the capacity, coverage, and resiliency necessary to keep pace with exponentially accelerating demand for high-bandwidth, real-time, and AI-based applications for billions of people around the world, including those who still lack adequate broadband.

Pursuant to Section 1.3 of the Commission’s rules, the Commission may waive its rules for good cause shown.¹ “Waiver is appropriate if special circumstances warrant a deviation from the general rule and such deviation would better serve the public interest than would strict adherence to the general rule,” including “more effective implementation of overall policy.”² In determining whether waiver is appropriate, the Commission should “take into account

¹ 47 C.F.R. § 1.3; *see also WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969); *Ne. Cellular Tel. Co. v. FCC*, 897 F.2d 1164 (D.C. Cir. 1990).

² *GE American Communications, Inc.*, Order and Authorization, 16 FCC Rcd 11038, para. 9 (IB 2001) (quoting *WAIT Radio*, 418 F.2d at 1159).

considerations of hardship, equity, or more effective implementation of overall policy.”³ As shown below, SpaceX’s Gen3 system demonstrates good cause for the Commission to grant a waiver, to the extent necessary, of various limitations in the Commission’s Schedule S, and to grant a waiver of Sections 2.106, 25.114(a)(1), 25.146(a)(2), 25.146(c), 25.156(d), 25.157, and 25.159(b) of the Commission’s rules.

Granting the requested waivers would serve the public interest by enabling the Gen3 system to deliver multi-gigabit speed, symmetrical service and to accommodate orders of magnitude for more users on the network. For many rules SpaceX requests to waive for its Gen3 system, including its requests to operate in certain Ku- to W-band spectrum lacking formal fixed-satellite service allocations, the Commission already granted similar waivers for SpaceX’s Gen2 system. SpaceX incorporates those waiver requests and the Commission’s reasons for granting them here. SpaceX also requests additional spectrum for the Gen3 system necessary to meet the needs of tomorrow’s consumers and AI-enabled applications and devices, which will require massive uplink to accommodate high-definition and real-time audiovisual information. Permitting the Gen3 system to operate across wide, contiguous channels for fronthaul and backhaul service enhances spectrum efficiency and performance, including dynamic traffic routing to alleviate congestion, accommodate more users in more places, and maintain connectivity during outages or disasters. These ultra-wide channels are particularly important to deliver reliable, high-capacity broadband to users in rural and underserved areas and to support critical applications such as emergency response, telemedicine, and remote enterprise connectivity.⁴ At the same time, the

³ *WAIT Radio*, 418 F.2d at 1159.

⁴ *Principles for Promoting Efficient Use of Spectrum and Opportunities for New Services; Promoting Efficient Use of Spectrum through Improved Receiver Interference Immunity Performance*, ET Docket Nos. 23-122 and 22-137, Policy Statement, 38 FCC Rcd 3682, 3682, para. 1 (2023) (recognizing that “networks continue to require greater bandwidth to support next-generation applications like robotics, artificial intelligence, precision farming, augmented reality, and cloud computing.”).

requested waivers can be granted in a manner that protects incumbent users from harmful interference and fully preserves the integrity of the Commission’s spectrum sharing frameworks.

SpaceX will continue to coordinate and collaborate in good faith with incumbent operators and stakeholders operating consistent with the U.S. Table of Frequency Allocations (“U.S. Table”), including implementing technical and operational measures (*e.g.*, coordination procedures, power limits, and avoidance techniques) based on modern, efficient spectrum management principles to ensure that radio astronomy, passive sensing, safety-of-life, and other protected services are safeguarded. SpaceX is actively engaging with U.S. federal agencies regarding the bands it has requested for its Gen3 system and will continue to coordinate in good faith to understand and mitigate risks of harmful interference to federal operations. In these circumstances, a limited waiver strikes the appropriate balance between regulatory certainty and continued innovation, ensuring that the Commission’s rules are implemented in a way that maximizes consumer benefits, promotes competition, and supports U.S. leadership in next-generation satellite communications.

I. Waiver of Section 2.106—Table of Frequency Allocations

To ensure that Americans have access to fiber-like, low-latency broadband wherever they live, work, or travel, and to maintain American competitiveness in space and AI, SpaceX requests, as necessary, a waiver of Section 2.106 of the Commission’s rules to use several frequency bands in a manner that does not conform to either the U.S. Table or the International Table of Frequency Allocations (“International Table”).

The Commission recognized that “there may be benefits associated with operations not consistent with the current International Table in certain circumstances.”⁵ Waivers of such

⁵ *Expediting Initial Processing of Satellite and Earth Station Applications*, Report and Order and Further Notice of Proposed Rulemaking, 38 FCC Rcd 8838, 8848-49, para. 26 (2023) (“*Satellite Processing Order*”).

allocations are generally granted “when there is little potential for interference into any service authorized under the Table of Frequency Allocations and when the non-conforming operator accepts any interference from authorized services.”⁶ The Commission, likewise, has permitted non-conforming uses where the operator agrees to comply with established technical limits known to protect other authorized services.⁷ And the Commission found that a waiver of the Table of Frequency Allocations is appropriate when an operator seeking the waiver has undertaken efforts to update the table. For many of the spectrum bands for which SpaceX requests a waiver for the Gen3 system, the Commission recently granted a waiver for SpaceX’s Gen2 system to use that spectrum for fixed-satellite service operations on a non-conforming basis. SpaceX incorporates by reference those waiver requests and the Commission’s rationale for granting them here.

Special circumstances exist to grant this waiver request. The exponential rise of AI and AI-enabled services requires a commensurate exponential increase in broadband capacity to enable American enterprises to remain at the forefront of innovation and ensure that all people can enjoy the benefits of an abundant, AI-enabled future. Rapidly expanding the capacity of next-generation satellite systems is particularly important to ensure that as broadband speeds continue to improve for urban populations, those in rural, remote, and Tribal areas are not left behind. The Commission recognizes that the need for satellite spectrum abundance is critical to growing the competitive ecosystem of existing and emerging satellite services. Granting the waivers would deliver that

⁶ *The Boeing Company*, Order and Authorization, 16 FCC Rcd 22645, para. 12 & n.48 (IB & OET 2001) (“*Boeing Authorization*”) (citations omitted) (quoting *Fugro-Chance, Inc.*, Order and Authorization, 10 FCC Rcd 2860, ¶ 2 (IB 1995)); *Letter from Jose P. Albuquerque & Mark Settle to Suzanne Malloy*, 30 FCC Rcd 4841, 4842 (IB & OET 2015).

⁷ *See, e.g., ContactMEO Communications, LLC*, Order and Authorization, 21 FCC Rcd 4035, paras. 1, 26-27, 39 (IB 2006) (permitting NGSO FSS downlinks, from three or four satellites, in a GSO FSS band, conditioned on compliance with Article 22’s EPFD limit); *Northrop Grumman Space & Mission Systems Corporation*, Order and Authorization, 24 FCC Rcd 2330, paras. 71, 76, 90 (IB 2009) (“*Northrop Grumman*”) (same); *Boeing Authorization*, 16 FCC Rcd at paras. 16-17 (permitting aeronautical MSS uplinks in FSS spectrum based on compliance with protection measures endorsed by Working Party 4A).

abundance and allow the Gen3 system to help maintain American global competitiveness in space, spectrum, and AI.

The Commission has also recognized the importance of flexible, innovation-oriented spectrum management for satellite systems, particularly where operations will not cause harmful interference or claim protection from authorized, allocated services. Granting this waiver would be consistent with that approach. SpaceX focused its requests primarily on finding innovative ways to promote the delivery of high-quality content and real-time services and to unlock underutilized spectrum efficiently. Doing so will not only support bandwidth-intensive, real-time and AI-enhanced applications that require more symmetrical upload and download speeds, but also will ensure that American consumers and industries can access dedicated, fiber-like capacity even in the most remote corners of the country. The Gen3 system will also employ advanced spectrum-sharing and interference mitigation techniques to prevent harmful interference to other users.

Waiving the Table of Frequency Allocations to permit non-conforming uses of certain frequency ranges in the Ku-, Ka-, V-, E-, W-, and D-bands, as requested herein, would promote the public interest by dramatically enhancing the quality, coverage, and reliability of next-generation satellite service for consumers in the United States and abroad without causing harmful interference to other authorized services.

Importantly, until such time that the Commission or International Telecommunications Union (“ITU”) updates the service allocations in these frequency bands to permit the satellite services requested herein, SpaceX will operate in these bands on a non-interference, non-protected basis with respect to authorized services, and is designing its Gen3 system to efficiently share the spectrum with other satellite providers that may seek to use the bands. Consistent with the

Commission’s spectrum management principles, SpaceX will rely on modern, efficient interference protection criteria, licensing information, and—to the extent available—real-world deployment data to ensure that the use of these bands does not cause harmful interference to duly authorized systems. For avoidance of doubt, in situations where the Table of Frequency Allocations *has* allocated a frequency band for Fixed-Satellite Service (“FSS”) or Mobile-Satellite Service (“MSS”) in some regions but not others—*e.g.*, internationally but not in the United States, or in Region 2 but not Regions 1 or 3—the Gen3 Application requests access to those frequency bands consistent with their primary and/or secondary frequency allocations. SpaceX thus limits its waiver request below to the extent that operating a satellite system in a frequency band within a specific radiocommunications service or in a specific direction (*e.g.*, space-to-Earth or Earth-to-space) does not conform to the U.S. or International Tables, as applicable.

A. Ku-Band Frequencies

Millions of consumers and a wide range of enterprises throughout America and around the world rely on robust and reliable next-generation satellite service using workhorse Ku-band frequencies for last-mile end-user links. But as innovation in and demand for AI-enabled services increases at an exponential rate, next-generation satellite systems must deliver ever-higher-speed and lower-latency end-user service to keep up. While downlink capacity will remain essential to deliver broadband to end users, the rapid rise of real-time communications and audiovisual data processing for AI-enabled devices—including industrial automation, precision agriculture, telemedicine, and personal robotics—will also require a significant expansion of end-user uplink capacity. The Commission recently reiterated the value of unlocking contiguous spectrum to provide “super bands” necessary to meet the needs of today’s consumers and businesses and maintaining American global competitiveness in wireless services. Unlocking these super-bands is particularly warranted when adjacent bands are underused, unnecessarily encumbered, or

present opportunities for innovative, efficient sharing between services. From a technical perspective, granting a waiver to operate in adjacent or near-adjacent spectrum would allow SpaceX to efficiently upgrade its existing hardware to make productive use of underused bands for consumers. Authorizing additional Ku-band spectrum thus would allow SpaceX to efficiently increase aggregate system capacity, improve service continuity in areas where other bands are congested or constrained, and enhance the ability of its Gen3 system to deliver low-latency, high-speed connectivity to consumers, enterprises, public-sector users, and unserved or underserved communities.

Accordingly, SpaceX requests a waiver of the Table of Frequency Allocations in several Ku-band frequencies to unlock fiber-like, symmetrical speeds for consumers through contiguous Ku-band downlink operations from 10.7-13.4 GHz and near-contiguous uplink operations from 13.75-15.63 GHz (excepting the 15.35-15.43 GHz band allocated solely for passive operations). SpaceX provides additional band-specific waiver rationales in the following sections.

12.7-12.75 GHz. The Gen3 Application requests authority for Gen3 space stations to transmit downlinks in the 12.7-12.75 GHz frequency range. The 12.7-12.75 GHz frequency range is allocated for FSS downlink in Regions 1 and 3 on a co-primary basis in the International Table and on a primary basis for FSS uplink in the U.S. Table. Because the United States has not yet allocated this frequency range for FSS downlink operations, SpaceX requests a waiver of the U.S. Table, as necessary, to transmit downlinks in the 12.7-12.75 GHz band in the United States.

Good cause exists to grant this request as doing so would not only encourage more efficient and intensive use of the band, which is currently underutilized for satellite services, but would also harmonize the use of the 12.7 GHz band in the United States with global spectrum allocations. Indeed, many stakeholders have expressed support for opening the band up for more intensive use

for similar reasons in the Commission’s ongoing Spectrum Abundance proceeding,⁸ which proposes to adopt a conforming downlink allocation in the 12.7-12.75 GHz frequency range.⁹

In addition to advancing key Commission goals related to efficient and intensive use of spectrum, granting this requested waiver would serve the public interest by improving the quality of service for consumers, enterprises, and first responders. The 12.7-12.75 GHz frequency range is particularly suitable for enhancing the quality of satellite service for consumers because it lies immediately adjacent to the 10.7-12.7 GHz downlink band where SpaceX has deployed its phased array terminals for millions of consumers and a wide range of enterprise users around the world. Granting a waiver to conduct downlinks in the 12.7-12.75 GHz frequency range would enhance the capacity and quality of service for consumers and critical American industries such as maritime, aviation, agriculture, and telecommunications. A waiver would also support essential operations of federal, state, and local government users, from community anchor institutions to first responders, who increasingly rely on satellite services to meet their connectivity needs. Further, a waiver would permit SpaceX to conduct downlink operations globally in the band and ultimately support the Administration’s as well as the Commission’s efforts to maintain America’s position as a wireless and satellite leader—indeed, doing so would enhance SpaceX’s satellite network, which serves people in over 160 markets today.

⁸ See e.g., *Satellite Spectrum Abundance*, SB Docket No. 25-180, Further Notice of Proposed Rulemaking and Notice of Proposed Rulemaking, 40 FCC Rcd 3794, 3801, para. 19, n.43-45 (2025) (“*Spectrum Abundance NPRM*”).

⁹ See *id.* at 3801-10, paras. 19-45; *Amendment of Parts 2 and 25 of the Commission's Rules to Enable NGSO Fixed-Satellite Service (Space-to-Earth) Operations in the 17.3-17.8 GHz Band*, IB Docket No. 22-273, Report and Order, 39 FCC Rcd 11156, 11156-67, para. 1 (2024) (“*17 GHz Order*”) (“Our action today provides a contiguous 1300 MHz of spectrum for NGSO FSS downlink operations, allowing for technologically innovative and enhanced satellite services to the benefit of American consumers.”).

12.75-13.25 GHz. SpaceX also requests a waiver of the U.S. Table and International Table to provide downlink FSS services in the 12.75-13.25 GHz band for downlink FSS transmissions.¹⁰ Like the 12.7-12.75 GHz frequency range, the Commission recently sought comment on whether it should adopt a downlink allocation for the adjacent 12.75-13.25 GHz band.¹¹ The record reflects industry and public interest support for opening the entire 12.7-13.25 GHz band for downlink operations to complement the 10.7-12.7 GHz band.¹² In the *Spectrum Abundance NPRM* the Commission stated that the 12.75-13.25 GHz band has been allocated globally for FSS (uplink) on a co-primary basis, but remains lightly used in part because it lies immediately adjacent to heavily used downlink operations, providing no duplex gap for reliable frequency-division duplex (FDD) operations.¹³ However, as stakeholders have demonstrated, these restrictions artificially limit FSS deployments in the band and unduly limit the benefit that this spectrum could have for American consumers.¹⁴

SpaceX also demonstrated through its downlink operations in the adjacent 10.7-12.7 GHz band that it is capable of operating in the 12.75-13.25 GHz band in a manner that fully protects the sparse terrestrial operations that exist in the band from harmful interference, including through power flux-density limits.¹⁵ SpaceX's proposed downlink operations pose little risk of harmful

¹⁰ 47 C.F.R. § 2.106(d)(52) (stating that, except as provided in Footnote NG527A of the U.S. Table of Frequency Allocations, "the use of the bands 10.7-11.7 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by geostationary satellites in the fixed-satellite service (FSS) shall be limited to international systems, i.e. other than domestic systems").

¹¹ See *Spectrum Abundance NPRM*, 40 FCC Rcd at 3801-802, paras. 19-22; *17th GHz Order*, 39 FCC Rcd at 11156-67, para. 1.

¹² See, e.g., Letter from New America's Open Technology Institute and the International Center for Law and Economics to Marlene H. Dortch, SB Docket Nos. 25-180, 25-157, 25-306 (Feb. 13, 2026); Reply Comments of the Commercial Space Federation, SB Docket No. 25-180 (Aug. 26, 2026).

¹³ *Spectrum Abundance NPRM*, 40 FCC Rcd at 3801-802, paras. 19-22.

¹⁴ *Id.* at 3801-3802, para. 22; *id.* at n.48 (citing Satellite Operators Joint NPRM Comments at 6).

¹⁵ Satellite downlinks may operate in the band without causing harmful interference to the very few, limited incumbent terrestrial deployments in the band, just as satellite operators do in the adjacent 10.7-12.7 GHz band. But SpaceX reiterates its opposition to expanded high-powered terrestrial operations in either the 12.2-12.7

interference to limited GSO uplink operations in the band, due to both the high-powered earth station operations required to connect to GSO satellites and the significant attenuation of backlobe emissions from SpaceX downlinks over tens of thousands of kilometers of path loss to a GSO receiver. Authorizing SpaceX to operate downlinks across the 12.7-13.25 GHz band would also meaningfully improve download capacity in the Gen3 system, allowing more consumers to connect to better broadband service. If granted, SpaceX will ensure that in- and adjacent-band operators are protected from harmful interference.¹⁶ As such, granting this waiver would serve the public interest and would benefit consumers for many of the same reasons mentioned above for the 12.7-12.75 GHz frequency range.

13.25-13.4 GHz. SpaceX requests a waiver to use the 13.25-13.4 GHz band for downlink FSS to further enhance the Ku-band downlink capacity of the Gen3 system for consumers.¹⁷ The 13.25-13.4 GHz band is allocated globally for Earth exploration satellite service (EESS) (active), aeronautical radionavigation, and space research (active). Within the United States, the band is allocated for these services for both Federal and non-Federal use, with non-Federal Earth exploration satellite and space research operations on a secondary basis. Footnote 5.497 limits aeronautical radionavigation in the band to Doppler navigation aids.¹⁸ The 13.25-13.4 GHz band

GHz or 12.7-13.25 GHz band. SpaceX's unrefuted technical analysis shows that ubiquitous high-powered fixed or mobile service cannot deploy in the band without causing harmful interference to ubiquitous satellite consumer equipment receiving in the 12.2-12.7 GHz or 12.7-13.25 GHz band. *See e.g.*, Letter from David Goldman to Marlene H. Dortch, WT Docket No. 20-443, Attach. A (June 21, 2022).

¹⁶ *See generally Spectrum Abundance NPRM*, 40 FCC Rcd at 3808-811, paras. 38-45.

¹⁷ 47 C.F.R. § 2.106(a).

¹⁸ 47 C.F.R. § 2.106(b)(497) ("The use of the band 13.25-13.4 GHz by the aeronautical radionavigation service is limited to Doppler navigation aids.").

is sparsely used today for Earth-exploration satellites and space research, with only a few Chinese sensors populating the band and no current known U.S. users.¹⁹

Permitting SpaceX to operate contiguous downlink across the full 10.7-13.4 GHz band would meaningfully expand the capacity of the Gen3 system to reach more consumers with significantly better broadband performance. SpaceX recognizes the importance of aeronautical radionavigation for safety-of-life operations and will coordinate as necessary to protect those operations from harmful interference. SpaceX will operate in this band on a non-interference, non-protection basis with respect to co-primary Federal and non-Federal services in the band, including with respect to Doppler navigation aids in the band.

14.5-14.8 GHz. The Gen3 Application requests authority for Gen3 space stations to operate in the 14.5-14.8 GHz frequency range, which is allocated for FSS in Regions 1, 2, and 3 on a co-primary basis in the International Table. Because the United States has not allocated the band to the FSS, however, SpaceX requests a waiver of the U.S. Table, as necessary, to operate in the 14.5-14.8 GHz frequency range in the United States as well.

Good cause exists to grant this waiver, as the Commission found when granting an identical waiver for SpaceX's upgraded Gen2 system.²⁰ This spectrum is particularly suitable for next-generation satellite service, as it lies immediately adjacent to the 14.0-14.5 GHz uplink band that SpaceX deployed in its phased array terminals for millions of consumers around the world. Indeed,

¹⁹ See World Meteorological Organization, Observing Systems Capability Analysis and Review Tool, <https://space.oscar.wmo.int/satellitefrequencies>.

²⁰ *In the Matter of Space Exploration Holdings, LLC*, et al., SAT-LOA-20200526-00055, et al., Authorization and Order, DA 26-36, at 5, para. 9 (rel. Jan. 9, 2026) (“*SpaceX Gen2 Authorization and Order*”) (“As part of this authorization, we grant SpaceX’s request for waiver of the U.S. Table of Frequency Allocations’ to conduct global uplink communications in the 14.5-14.8 GHz, 17.3-17.8 GHz, 51.4-52.4 GHz, 92.0-94.0 GHz, 94.1-95.0 GHz, 95.0-100.0 GHz, 102.0-109.5 GHz, and 111.8-114.25 GHz (Earth-to-space) bands and global FSS downlink communications in the 18.6-18.8 GHz (space-to-Earth) band on an unprotected and non-interference basis.”).

the Commission recognized the importance of enabling contiguous spectrum to support advanced services, such as high-speed broadband access.²¹ Providing access to an additional 300 megahertz of spectrum to strengthen the uplink capacity of SpaceX's phased array antennas would align with Commission policy promoting the deployment of more symmetrical broadband speeds to consumers, particularly in areas of the country underserved and unserved by terrestrial broadband. Authorizing uplink use of 14.5-14.8 GHz frequency range will also ensure that all consumers can benefit from real-time, AI-enabled applications that require high bandwidth, including real-time audiovisual understanding, communications, and autonomous robots. Additional uplink capacity will also be essential to meeting the high-bandwidth needs of enterprise and government users that require more robust uplink capacity to manage and accommodate higher traffic from many simultaneous users and devices.

As it is required to do for its Gen2 system, SpaceX will operate in the band on a non-interference, non-protection basis and subject to any conditions necessary to ensure successful coexistence.²²

14.8-15.35 GHz. SpaceX requests a waiver for FSS uplink operations in the 14.8-15.35 GHz frequency range.²³ In conjunction with the 14.5-14.8 GHz band, granting authorization in the 14.8-15.35 GHz band will enable wide, contiguous Ku-band uplink spectrum, primarily deployed in user terminals for millions of consumers around the world. Adding this contiguous uplink is essential to address the 4:1 gap between downlink and uplink service in Ku-band, a gap that imposes significant constraints on real-time and enterprise applications that require high-bandwidth uplink to send traffic or to handle uplink traffic from many devices simultaneously.

²¹ See *17th GHz Order*, 39 FCC Rcd at 11156-67, para. 1.

²² *SpaceX Gen2 Order*, DA 26-36 at 5, para. 9.

²³ 47 C.F.R. § 2.106(a).

In the United States, where the 14.8-15.35 GHz frequency range is allocated for federal use, SpaceX will operate on a non-interference, non-protection basis subject to any conditions necessary to ensure successful coexistence with federal users.

B. Ka-Band Frequencies

Like its Gen2 system, SpaceX requests to use Ka-band frequencies in the Gen3 system for both high-capacity end-user terminals and for robust, reliable backhaul, including gateway earth stations and other dedicated high-capacity uses. To meet the accelerating capacity demands of orders of magnitude for more users on the network, the Gen3 requires wide, contiguous Ka-band spectrum channels that exceeds what current FSS spectrum allocations enable. Additional uplink capacity is particularly important to backhaul traffic from users through SpaceX's gateway earth stations and to deliver more symmetrical, fiber-like upload speeds to consumers using real-time, bandwidth-intensive applications. From a technical perspective, granting a waiver to operate in adjacent or near-adjacent spectrum would allow SpaceX to efficiently upgrade its existing hardware to make productive use of underused bands for consumers. Authorizing additional Ka-band spectrum thus would allow SpaceX to efficiently increase aggregate system capacity, improve service continuity in areas where other bands are congested or constrained, and enhance the ability of its Gen3 system to deliver low-latency, high-speed connectivity to consumers, enterprises, public-sector users, and unserved or underserved communities.

Accordingly, SpaceX requests a waiver of the Table of Frequency Allocations necessary to permit downlinks in the 17.3-21.2 GHz band and uplinks in the 21.4-23.6 GHz, 24.25-25.25 GHz, and 25.5-31 GHz bands. SpaceX provides additional band-specific waiver rationales in the following sections.

18.6-18.8 GHz. SpaceX proposes to use the 18.6-18.8 GHz band for downlink FSS transmissions and seeks a waiver of the U.S. and International Tables to do so.²⁴ While the 18.6-18.8 GHz band is allocated globally for FSS (downlink) on a co-primary basis limited to GSO operations, the Commission recognizes the strong demand from NGSO FSS systems to make productive use of the spectrum for consumers. The Commission recently authorized SpaceX and Amazon to use the 18.6-18.8 GHz band subject to federal coordination.²⁵ Grant of this instant waiver request would thus align with Commission precedent and advance the public interest for many of the same reasons that the ITU and Commission recently authorized NGSO operations in the 17.3-17.8 GHz band.²⁶ Moreover, just as GSO and NGSO systems can and do share spectrum in the lower- and upper-adjacent bands, coexistence between GSO and NGSO systems is readily achievable in the 18.6-18.8 GHz band.

SpaceX will operate in the 18.6-18.8 GHz band on a non-interference, non-protected basis with respect to other authorized users, including GSO networks and Earth-exploration satellite service (passive). To protect GSO networks, SpaceX will operate consistent with the modernized EPFD limits discussed below for its Ka-band operations in the adjacent 17.8-18.6 GHz band, or the terms of any superseding coordination with GSO operators. SpaceX will also coordinate with federal users in the United States. To the extent that other NGSO systems seek to use the band, SpaceX can leverage the same techniques that permit sharing in its adjacent, authorized bands to

²⁴ 47 CFR § 2.106(a), (d)(164).

²⁵ *See SpaceX Gen2 Authorization*, DA 26-36 at 6.

²⁶ *See SpaceX Gen2 Authorization and Order*, DA 26-36 at 5, para. 9. This authorization aligns with the Commission's earlier decision to accept three NGSO-like applications for filing to use the 18.6-18.8 GHz band, and its subsequent waiver for NGSO system Karousel to operate in the band. *See Karousel Satellite LLC*, Memorandum Opinion, Order and Authorization, 33 FCC Rcd. 8485, ¶ 18 (2018).

efficiently share the spectrum with other users. SpaceX will participate in ongoing ITU-R Working Party 7C efforts exploring NGSO operations in the band in anticipation of WRC-27.

19.3-19.7 GHz. SpaceX proposes to use the 19.3-19.7 GHz band for downlink FSS transmissions from its Gen3 satellites. The 19.3-19.7 GHz band is allocated for FSS (downlink) operations on a co-primary basis; however, use of the 19.4-19.6 GHz band in the United States is limited to feeder links for NGSO systems in the MSS.²⁷ Internationally, the 19.3-19.7 GHz band is allocated to FSS (uplink and downlink) on a co-primary basis.

The Commission has recognized that the 19.4-19.6 GHz band remains significantly underused in the United States as it is confined to a handful of isolated, legacy gateway earth stations. In light of this underuse and the benefit of permitting next-generation systems to make more productive use of the spectrum for consumers, the Commission recently granted waivers to SpaceX and Amazon to conduct general FSS operations in the band.²⁸ To the extent necessary, and consistent with the Commission's grant for its Gen2 system, SpaceX seeks a similar waiver of Section 2.106(a) for its Gen3 system to permit non-feeder-link NGSO FSS operations in the band. SpaceX will operate under this waiver on a non-interference, non-protected basis relative to primary licensed operations, including GSO FSS networks, as is already required of NGSO FSS operations in the 19.3-19.4 GHz and 19.6-19.7 GHz bands. SpaceX will also coordinate with other users in the band as needed to ensure ongoing operations in the band are protected.

20.2-21.2 GHz and 30-31 GHz. SpaceX seeks authority in its Gen3 Application to use the 20.2-21.2 GHz band for FSS downlink and 30-31 GHz band for FSS uplink outside the United

²⁷ 47 C.F.R. § 2.106(a), (d)(166).

²⁸ See generally *SpaceX Gen2 Authorization*, DA 26-36 at 6; see also Grant of Kuiper System LLC, ICFS File Nos. SAT-LOA-20211104-00145 and SAT-AMD-20250311-00068 at 3 (Feb. 19, 2026) ("*Kuiper Gen1, Gen2, and Polar Grant*").

States pursuant to the band's co-primary FSS allocations. In the United States, SpaceX will operate in these bands subject to successful coordination with federal users and subject to any conditions necessary to ensure successful coexistence.

The 20.2-21.2 GHz and 30-31 GHz bands present several important benefits for next-generation satellite systems. Because the bands are immediately adjacent to existing non-federal Ka-band spectrum, they would allow SpaceX to rapidly update its hardware to connect more consumer, enterprise, and government users to even higher-quality service. Additional contiguous Ka-band is particularly important because the Gen3 system will rely on Ka-band for both reliable user links and backhaul links. Finally, allowing next-generation satellite systems such as SpaceX's Gen2 system to use these bands would complement NTIA and Commission efforts to make it easier for federal agencies to access commercial satellite systems to achieve critical federal missions.

21.4-23.6 GHz. SpaceX requests a waiver to operate FSS uplinks in the 21.4-23.6 GHz frequency range. The 21.4-23.6 GHz frequency range is not currently allocated for uplink FSS operations in either the U.S. or the International Table. Instead, this spectrum is primarily allocated for Earth exploration-satellite, Fixed, Mobile, and Radio Astronomy services, some of which are protected by International Footnote 5.149 and U.S. Footnote US342 requiring that all practicable steps be taken to avoid harmful interference to these passive services.²⁹

The 21.4-23.6 GHz frequency range is well suited to support next-generation satellite systems such as SpaceX's Gen3 system because it lies adjacent to spectrum authorized for user and gateway links for SpaceX's Gen2 system. This additional capacity falls between SpaceX's workhorse Ka-band operations in the 17.3-20.2 (space-to-Earth) and 27.5-30 GHz (Earth-to-space)

²⁹ 47 C.F.R. § 2.106(a), (b)(149), (c)(342).

bands, allowing SpaceX to efficiently develop and deploy equipment that can make productive use of the spectrum for gateway and high-capacity end-user operations.³⁰

SpaceX can operate in these bands without causing harmful interference to existing operations. With respect to terrestrial operations, the Commission's Part 101 rules only permit individual licensing of fixed point-to-point links in these bands.³¹ SpaceX can readily identify and protect these links because the Commission requires operators to individually license each link with its specific location and parameters in the Commission's Universal Licensing System. Moreover, years of operational experience in nearby Ka-band spectrum demonstrates that millimeter-wave fixed links and earth station uplinks can coexist through readily available coordination techniques. For any ubiquitous user uplink operations in the band, SpaceX will rely on modern, efficient interference protection criteria, licensing information, and real-world deployment data to ensure that the use of these channels does not cause harmful interference to duly authorized fixed links. While footnote 5.532 of the Table of Frequency Allocations prohibits passive services from constraining active terrestrial operations in the 22.21-22.5 GHz band, SpaceX will coordinate as necessary with federal operators to protect passive operations in the band.³²

24.25-24.75 GHz. SpaceX requests a waiver to operate FSS uplinks in the 24.25-24.75 GHz band. Permitting NGSO FSS uplink operations in this bands would permit more intensive and efficient use of Ka-band spectrum for consumers, enterprises, and first-responders. While the Commission authorizes satellite operations in the 24.75-25.25 GHz band today, use of the band remains limited because it lies on a small island gigahertz away from Ka-band downlink and uplink.

³⁰ See generally *SpaceX Gen2 Authorization*, DA 26-36.

³¹ 47 C.F.R. Part 101.

³² 47 C.F.R. § 2.106(b)(532).

The diversity of allocations between 24.25-25.25 GHz—including fixed-, inter-, and radionavigation-satellites and fixed, mobile, and radar operations—compounds the difficulty of any operator making productive use of these bands. Fortunately, because these bands remain lightly used with services that can readily share spectrum in practice, granting a waiver for Gen3 to operate uplinks across 24.25 to 25.25 GHz will allow Gen3 to finally put these spectrum bands into productive use.

SpaceX will operate under this waiver on a non-interference, non-protected basis relative to primary licensed operations. Allocations in adjacent and analogous spectrum bands demonstrate that SpaceX's proposed operations are compatible with existing allocations in the bands. For example, fixed-satellite service earth stations and Upper Microwave Flexible Use Service deployments can coexist in the 24.25-24.45 GHz band, just as they do in the 24.75-25.25 GHz band. Moreover, fixed-satellite service uplinks and inter-satellite links are compatible on a co-primary basis in the 24.65-24.75 GHz band, just as Regions 1 and 3 found that those services can share spectrum with near-identical propagation characteristics and use cases in the adjacent 24.45-24.65 GHz band. The decision at WRC-23 to make upper Ka-band spectrum available for both fixed-satellite uplink and inter-satellite links reflects global recognition that these bands can be shared efficiently. Finally, fixed-satellite service uplinks can coexist with radionavigation services in the 24.45-24.65 GHz band, just as the Commission and ITU found that fixed-satellite uplinks can coexist with radionavigation in the 45.5-46.9 and 66-71 GHz bands.

For any ubiquitous user uplink operations in the band, SpaceX will rely on modern, efficient interference protection criteria, licensing information, and real-world deployment data to ensure that the use of these channels does not cause harmful interference to duly authorized systems. SpaceX will coordinate with relevant in- and adjacent-band operators as necessary, and

subject to any conditions necessary to ensure successful coexistence. For any such uplink transmissions, SpaceX will seek appropriate earth stations authorizations before operating in the band.

25.5-27 GHz. SpaceX requests a waiver to receive FSS uplinks in the 25.5-27 GHz frequency range. The 25.5-27 GHz band is allocated to the Earth Exploration-Satellite Service (space-to-Earth) for federal operations, the Space Research Service (space-to-Earth) for federal and non-federal operations, the Inter-Satellite Service (space-to-space) for federal and non-federal operations, as well as terrestrial fixed and mobile services on a federal basis. Standard Frequency and Time Signal-Satellite Services (Earth-to-space) are also permitted for federal and non-federal operations.

Much like the 21.4-23.6 GHz frequency range, the 25.5-27 GHz band is well suited to support SpaceX's Gen3 system because it will provide contiguous spectrum resources that can support high-capacity end-user and backhaul links through flexible beamforming and efficient frequency reuse. As such, use of these bands would allow SpaceX to increase aggregate system capacity, improve service continuity in areas where other bands are congested or constrained, and enhance the ability of its Gen3 system to deliver low-latency, high-speed connectivity to consumers, enterprises, public-sector users, and unserved or underserved communities.

SpaceX can readily operate in the 25.5-27 GHz band without causing harmful interference to incumbent users. SpaceX's Gen1 and Gen2 systems efficiently coexist with terrestrial fixed and mobile operations in the adjacent 27.5-28.35 GHz and 29.1-29.25 GHz bands, and similar efficient sharing is possible in the 25.5-27 GHz band. Moreover, because SpaceX will operate in the Earth-to-space direction, it can readily coexist with active Earth-exploration and space research operations through spatial separation and other efficient sharing techniques. In any event, SpaceX

will coordinate its proposed operations with federal users, and subject to any conditions necessary to ensure successful coexistence.

27-27.5 GHz. SpaceX proposes to use the 27-27.5 GHz band for uplink FSS transmissions and seeks a waiver of the U.S. Table to operate these links in the United States. The ITU allocated the 27-27.5 GHz band in Regions 2 and 3 for the fixed-satellite service (Earth-to-space) on a co-primary basis. In the U.S., non-Federal operators may operate inter-satellite links in the band on a secondary basis to federal operations. SpaceX today relies heavily on the adjacent 27.5-30 GHz band for its global networks of gateway earth station uplinks. These Ka-band links are essential to deliver reliable backhaul uplink from gateway sites—and on to end users—even under weather conditions that make higher-band operations infeasible. But retaining that high level of reliability for a growing number of customers requires additional Ka-band uplink spectrum. The 27-27.5 GHz band would deliver additional contiguous uplink capacity to support next-generation satellite backhaul. Moreover, this enhanced Ka-band uplink capacity can help support future user terminals delivering ultra-high-throughput end-user service.

SpaceX will operate in the United States and Region 1 on a non-interference, non-protection basis in the 27-27.5 GHz band. SpaceX will coordinate with federal users and operate subject to any conditions necessary to ensure successful coexistence

29.1-29.5 GHz. SpaceX proposes to use the 29.1-29.5 GHz band for uplink FSS transmissions. The Commission has allocated the 29.1-29.25 GHz band to FSS (uplink) on a co-primary basis, and the 29.25-29.5 GHz band to FSS (uplink) on a primary basis. But FSS use of the 29.1-29.25 GHz and 29.25-29.5 GHz bands is limited to feeder links for NGSO systems in the MSS, and for geostationary satellite networks in the 29.25-29.5 GHz segment. Internationally, the band is allocated to FSS (uplink) on a co-primary basis but similarly limited to feeder links for

NGSO systems in the MSS and to geostationary satellite systems, subject to the provisions of Article 9.11A of the Radio Regulations. Further, feeder links for NGSO networks in the MSS are directed to employ uplink adaptive power control or other methods of fade compensation, such that earth station transmissions are conducted at the power level required to meet the desired link performance while reducing the level of mutual interference between both networks.

Consistent with its grant of a similar waiver request for SpaceX's Gen2 system, the Commission should find that grant of the instant waiver request is in the public interest.³³ Moreover, grant would provide additional public interest benefits as it would allow SpaceX to make even more efficient and productive use of the 29.1-29.5 GHz band for consumers by using the band to support its FSS operations. As a practical matter, MSS "feeder link" traffic and non-feeder-link FSS traffic is largely indistinguishable and transmit through the same earth station equipment, causing no additional interference risk for other users than if the traffic was used for MSS feeder links. Permitting SpaceX to use the 29.1-29.5 GHz band for non-feeder-link uplink traffic would permit more efficient network planning and resource allocation. Furthermore, as with its operations across all bands, SpaceX ensures state-of-the-art frequency reuse through its narrow and independently steerable beams allowing for efficient spectrum sharing with current users. Accordingly, SpaceX seeks a waiver to permit NGSO FSS operations in the band, and if granted, will operate under this waiver on a non-interference, non-protected basis relative to primary licensed operations.

C. V-Band Frequencies

42-42.5 GHz. SpaceX seeks a waiver of the U.S. Table to permit NGSO FSS downlink operations in the band, which would unlock additional spectrum to connect more individual,

³³ See generally *SpaceX Gen2 Order*, DA 26-36 at 6-7.

enterprise, industrial, and government users—including first responders—to higher-quality broadband service without causing harmful interference to any other users. In its *Spectrum Abundance* proceeding the Commission proposed authorizing downlink FSS in this greenfield spectrum because of advances in satellite technology and explosive growth in broadband demand.³⁴ The Commission recognizes that FSS service in the 42-42.5 GHz band would meaningfully extend the existing 37.5-42 GHz band FSS downlink allocation to support a range of use cases, including individually licensed earth stations for next-generation satellite backhaul.³⁵ The record in the proceeding demonstrates strong support for adding an FSS allocation.³⁶ And since then, the Commission granted several operators space station licenses to use this spectrum for downlink operations both domestically and internationally.³⁷

SpaceX can readily coexist with other in-band and adjacent-band users of the 42-42.5 GHz band. Free space path loss, atmospheric attenuation, and limited penetration work together to significantly limit the risk of interference, enabling terrestrial links and satellite earth stations to operate in close proximity, even within tens of meters. For downlink operations in the 42-42.5 GHz band, SpaceX’s satellite systems have many tools at their disposal to mitigate interference risk into both active and passive services on the ground. For example, SpaceX entered into a coordination agreement with the National Science Foundation, under which the parties developed a cutting-edge boresight avoidance technique that enables efficient use of spectrum without

³⁴ See *Spectrum Abundance NPRM*, 40 FCC Rcd at 3811, para. 46.

³⁵ *Id.*

³⁶ See Comments of Kuiper Systems LLC, SB Docket No. 25-180 (July 28, 2025); Comments of the Computer & Communications Industry Association (CCIA), SB Docket No. 25-180 (July 28, 2025); Comments of Logos Space Services, Inc., SB Docket No. 25-180 (July 28, 2025).

³⁷ *Space Bureau Opens Processing Rounds, Cut-Off Established for Additional NGSO-like Satellite Systems in the KU- and KA-band and V-band*, DA 26-552, at 2-3 (SB June 5, 2026) (“June 5th Processing Round PN”).

causing interference to radio astronomy observatories.³⁸ As such, and consistent with Commission precedent granting similar waivers in this band, SpaceX requests that the Commission grant the instant request.

45.5-47.2 GHz. SpaceX seeks a waiver to the extent necessary to use the 45.5-46.9 GHz, 46.9-47 GHz, and 47-47.2 GHz bands for FSS uplink operations. V-band spectrum is becoming increasingly critical for next-generation satellite services to support backhaul and enterprise users. The Commission and ITU acknowledged this through proceedings and agenda items aimed at unlocking additional Q/V-band spectrum for NGSO systems to connect more individual, enterprise, industrial, and government users to higher-quality broadband service without causing harmful interference to any other users.

The 45.5-46.9 GHz and 46.9-47 GHz bands are currently allocated for non-Federal MSS operations and, by footnote, for communications between satellites and land stations at specified fixed points.³⁹ The ITU and Commission's rules define the "Mobile-Satellite Service" as including "feeder links necessary for its operation." While SpaceX requests authority to operate MSS links in the 45.5-47 GHz frequency range consistent with the U.S. Table, to the extent necessary, SpaceX requests a waiver to use the band for non-feeder-link FSS operations. As a practical matter, MSS "feeder link" traffic and non-feeder-link FSS traffic is largely indistinguishable and transmit through similar equipment, causing no additional interference risk for other users than if the traffic was used for feeder links. Moreover, permitting SpaceX to use the 45.5-47.2 GHz frequency ranges for uplink traffic would permit more efficient network planning and resource allocation.

³⁸ See Starlink, Protecting Radio Astronomy Through Real-time Coordination (Aug. 4, 2024), https://www.starlink.com/public-files/Telescope_Boresight_Avoidance.pdf.

³⁹ 47 C.F.R. § 2.106(a), (b)(554).

Furthermore, as with its operations across all bands, SpaceX ensures state-of-the-art frequency reuse with its narrow and independently steerable beams allowing for efficient spectrum sharing with current users. SpaceX also requests a waiver to conduct earth station uplink operations in the 47-47.2 GHz band. The 47-47.2 GHz band is globally allocated on a co-primary basis for Amateur and Amateur-Satellite Service, although public records reflect little to no amateur satellite operations in the band. Fortunately, just as with the 51.4-52.4 GHz band, for which SpaceX received a Commission waiver to conduct earth station uplink operations, SpaceX's operations in the 47-47.2 GHz band will use narrow, steerable beams and minimum elevation angles that minimize the risk of harmful interference to terrestrial operations in the band.⁴⁰

51.4-52.4 GHz. SpaceX seeks a waiver to permit NGSO FSS uplink operations in the 51.4-52.4 GHz frequency range, which would support the public interest by making available additional spectrum to connect more individual, enterprise, industrial, and government users—including first responders—to higher-quality broadband service without causing harmful interference to any other users. The Commission last year proposed to add a formal FSS uplink allocation to the U.S. Table, and recently granted SpaceX a waiver to operate 15,000 Gen2 satellites using this spectrum.⁴¹

Consistent with the Commission's grant of a similar request for SpaceX's Gen2 system, the Commission should find that a grant here serves the public interest. NGSO FSS operations in the 51.4-52.4 GHz frequency range offer significant consumer benefits and still allow for sharing

⁴⁰ *SpaceX Gen2 Authorization*, DA 26-36 at 7.

⁴¹ *Spectrum Abundance NPRM*, 40 FCC Rcd at 3815-16, paras. 57-59; *id.* (“[The ITU’s] studies, which were completed shortly before WRC-19, concluded that ‘the additional allocation to FSS being considered is beneficial to make broadband connections more accessible to communities regardless of their geographical location and with more affordable costs as achieved by HTS (High Throughput Satellite) systems’ and recommended adding an FSS allocation in the 51.4-52.4 GHz band for GSO networks, along with limits of unwanted emission power to ensure GSO compatibility with EESS (passive) operations in the 52.6-54.25 GHz band.”); *see also SpaceX Gen2 Authorization*, DA 26-36 at 7.

with other spectrum users—such as by using the V-band interference protection criteria for adjacent-band downlink operations to protect terrestrial fixed and mobile services from harmful interference and GSO operations from unacceptable interference.⁴² Moreover, as with its other requests for additional uplink spectrum, granting SpaceX’s waiver request would advance the Commission’s broadband policy by enabling the Gen3 system to deliver more symmetrical, fiber-like speeds, including to consumers and enterprise, industrial, and government end users requiring dedicated capacity.

In any event, until the Commission or ITU establishes an NGSO FSS allocation for the 51.4-52.4 GHz frequency range, SpaceX will operate in the band on a non-interference, non-protected basis with respect to co-primary users in the band.⁴³ In the 51.4-52.4 GHz frequency range, SpaceX operations will coordinate with federal agencies to protect passive EESS receiver operation in 50.2-50.4 GHz band.

D. E-Band Frequencies

67-71 GHz and 77-81 GHz. SpaceX seeks authority in its Gen3 Application to use the 67-71 GHz band for FSS downlink operations and 77-81 GHz frequency range for FSS uplink operations to enhance the capacity of its E-band gateway earth station operations. Over the last several years, SpaceX has successfully deployed over one hundred gateway earth station sites in major markets throughout the United States using E-band spectrum—including in urban, suburban, and exurban areas—serving millions of Americans with no demonstrated instances of harmful

⁴² See Comments of Kuiper Systems LLC, SB Docket No. 25-180, 7-10 (July 28, 2025); Comments of the Satellite Industry Association, SB Docket No. 25-180, 10 (July 28, 2025).

⁴³ See *Satellite Processing Order*, 38 FCC Rcd at 8849, para. 27 (any applicant seeking waiver to proceed without an international spectrum allocation would need to do so in conformance with Article 4.4 of the ITU Radio Regulations, which requires “the express condition that the station’s use of the frequencies shall not cause harmful interference to, and shall not claim protection from harmful interference caused by, a station operating in accordance with the ITU R.R.”).

interference to or from any co-primary spectrum users. Adding the 67-71 GHz band and 77-81 GHz frequency ranges immediately adjacent to existing E-band spectrum authorized for NGSO FSS would add eight gigahertz of contiguous spectrum for both end-user and backhaul use cases, nearly doubling E-band capacity.⁴⁴

The 67-71 GHz band is allocated on a co-primary basis for non-Federal MSS operations. The ITU and Commission's rules define the "Mobile-Satellite Service" as including "feeder links necessary for its operation," and Footnote 5.554 of the Table of Frequency Allocations permits "satellite links connecting land stations at specified fixed points" in the 66-71 GHz band." While SpaceX requests authority to operate MSS links in the 67-71 GHz band consistent with the U.S. Table, to the extent necessary, SpaceX requests a waiver to use the band for non-feeder-link FSS operations. As a practical matter, MSS "feeder link" traffic and non-feeder-link FSS traffic are largely indistinguishable and transmit through similar equipment, causing no additional interference risk for other users than if the traffic was used for feeder links. Moreover, permitting SpaceX to use the 67-71 GHz band for downlink traffic would permit more efficient network planning and resource allocation. Furthermore, as with its operations across all bands, SpaceX ensures state-of-the-art frequency reuse through narrow and independently steerable beams allowing for efficient spectrum sharing with current users.

The 77-81 GHz frequency range is allocated on a co-primary basis to non-Federal Radio Astronomy and Radiolocation operations, as well as to the Amateur-Satellite Service on a secondary basis. Operations of the Gen3 system in this spectrum will efficiently protect radio astronomy observations from harmful interference consistent with footnote US342 of the U.S.

⁴⁴ *Spectrum Abundance NPRM*, 40 FCC Rcd at 3815-16, para. 57 (highlighting the value of opening contiguous spectrum).

Table, just as SpaceX's current E-band operations do in the adjacent 81-86 GHz band. The Gen3 system can also coexist with automotive radar in the band. Next-generation satellite systems such as the Gen3 system use extremely narrow beams and must operate earth stations at relatively high minimum elevation angles five degrees or more above the horizon, creating angular discrimination with automotive radars that typically operate at or near horizontal elevation angles. Moreover, gateway earth stations are typically located in fenced enclosures or on top of buildings and feature small coordination zones, shielding automotive radars at street level from harmful interference. Atmospheric attenuation at these high frequencies will further reduce the risk of harmful interference into automotive radars.

E. W-Band Frequencies

SpaceX seeks a waiver to provide uplink communications in the 92-94 GHz, 94.1-95 GHz, 95-100 GHz, 102-105 GHz, 105-109.5 GHz, and 111.8-114.25 GHz bands. Consistent with the Commission's recent grant of a similar waiver for SpaceX's Gen2 system, grant of the waiver is in the public interest here.⁴⁵ In addition, Gen3's use of these bands aligns with the specific W-band spectrum identified by the Commission in the *Spectrum Abundance* proceeding to boost high-speed satellite connectivity.⁴⁶ As with Gen2, the Gen3 system will operate in these bands on a non-interference, non-protected basis, leveraging its success operating earth stations in the 81-86 GHz band while protecting non-federal and federal users from harmful interference. Like SpaceX's earth station uplink operations in the 81-86 GHz band, its operations in the W-band will feature high-gain, narrow beams that can coexist with terrestrial fixed and mobile deployments in close proximity with little to no risk of harmful interference. In the 92-95 GHz frequency range,

⁴⁵ *SpaceX Gen2 Authorization*, DA 26-36 at 8.

⁴⁶ *See Spectrum Abundance NPRM*, 40 FCC Rcd at 3815-16, para. 60.

SpaceX will use the third-party link registration database that the Commission has established for the band to efficiently coordinate any operations with incumbent users and ensure that earth station operations do not cause harmful interference to fixed service links. As with Gen2, SpaceX will operate on a non-interference, non-protected basis with respect to protected terrestrial operations in the band should the Commission make them available.

Permitting SpaceX to use W-band spectrum for enhanced uplink capabilities—including for backhaul—would serve the public interest for the many of the same reasons that the Commission found that authorizing 81-86 GHz FSS uplink spectrum would benefit consumers.⁴⁷ A waiver would allow SpaceX to swiftly make use of spectrum that is very lightly used, highly efficient, and permits wide channels for greater bandwidth.

As it has in E-band, SpaceX will coordinate its deployments in these bands to protect radio astronomy, radiolocation, radionavigation, and Earth exploration satellites. SpaceX will coordinate any operations in the band with the radio astronomy observatories listed in footnote US161, and satellite observations in the space research (passive) service, consistent with its long-standing commitment to collaborate with radio astronomers to protect their critical scientific work. To protect co-primary radiolocation and radionavigation services, SpaceX will coordinate with Federal agencies and non-Federal operators to ensure that those services can operate without harmful interference. Finally, SpaceX will coordinate any operations in these bands with adjacent-band users, including passive Earth exploration satellite service consistent with applicable ITU protection criteria.

⁴⁷ See Comments of the Computer & Communications Industry Association (CCIA), SB Docket No. 25-180, 5-6 (July 28, 2025).

F. D-Band Frequencies⁴⁸

SpaceX continues to seek opportunities to leverage ever-more efficient spectrum bands to meet the demand for high-capacity, low-latency broadband powering innovative real-time applications. SpaceX's experience developing revolutionary engineering has demonstrated the possibilities of higher millimeter-wave frequencies to meet these goals, enabling SpaceX's Gen3 satellite network to serve many more consumers while using spectrum that can efficiently coexist with other users even in close physical proximity.

As a next step in the evolution of satellite broadband, SpaceX seeks a waiver of the U.S. and International Tables to use even-higher-frequency D-band spectrum in the Gen3 system to enhance its parabolic earth station operations, particularly for backhaul use cases. Specifically, SpaceX seeks a waiver to access the 122.25-164 GHz, 167.0-174.8 GHz, 191.8-226 GHz, and 231.5-275 GHz frequency ranges for bidirectional FSS downlink and uplink operations. The requested authority would permit SpaceX to deploy its innovative Gen3 system utilizing spectrum above 100 gigahertz to provide high-capacity communications services, advanced data transport capabilities, and resilient broadband connectivity. Because portions of the requested spectrum are not allocated domestically and/or internationally for NGSO FSS operations consistent with Applicant's proposed use, waiver relief is necessary to permit the Commission to consider and authorize the requested operations.

As an initial matter, SpaceX recognizes the importance of protecting incumbent services and preserving opportunities for future spectrum development in these bands. SpaceX will operate under any waiver subject to coordination procedures required by the Commission, consistent with

⁴⁸ Engineers refer to sub-terahertz frequencies above the 110 GHz band by several letter names, including D-band, G-band, and H-band. For ease, SpaceX refers to these frequencies collectively as D-band in this application.

applicable ITU Radio Regulations, on a non-harmful interference, unprotected basis with respect to protected services . As discussed in more detail below, SpaceX is also committed to continuing its coordination efforts and outreach to relevant in- and adjacent-band operators, including radio astronomy operators, to ensure that its Gen3 operations do not cause harmful interference.

Waiver is appropriate here because there are special circumstances that warrant deviation from the general rule. In particular, the requested frequencies occupy the upper millimeter-wave and sub-terahertz spectrum ranges, which represent the next generation of satellite communications technology. The Gen3 system incorporates these advanced technologies, allowing operations that were not contemplated when existing allocation frameworks for the bands were established. In addition, the unprecedented growth in demand for broadband connectivity, AI infrastructure, cloud services, autonomous systems, and machine-to-machine communications requires significantly expanded satellite spectrum resources. Without access to these frequencies, which provide the bandwidth necessary to, among other things, increase overall capacity, reduce congestion, and enable next-generation satellite services, SpaceX's ability to deploy advanced high-capacity services would be significantly constrained.

More specifically, SpaceX's operations in the D-band will feature high-gain, narrow beams that can coexist in close proximity with terrestrial fixed and mobile deployments with little to no risk of harmful interference. Permitting SpaceX to use D-band spectrum for backhaul would serve the public interest for many of the same reasons that the Commission found that authorizing W-band uplink spectrum would benefit consumers. A waiver would allow SpaceX to swiftly make use of spectrum that is very lightly used, highly efficient, and permits wide channels for greater bandwidth. It would also achieve the goals of the Commission's Spectrum Abundance

proceeding⁴⁹ to find new and innovative ways to leverage increasingly higher frequency bands to serve consumers. Further, as with its other requests for additional uplink spectrum, granting SpaceX's waiver request would advance the Commission's broadband policy by enabling the Gen3 system to deliver more symmetrical, fiber-like speeds, including to consumers, industrial, and government end users requiring dedicated capacity. And permitting bidirectional use of these bands will ensure that the Gen3 system can deploy sufficient uplink or downlink capacity as needed to efficiently manage evolving end-user needs.

Active commercial operations in these bands remain nascent and limited, leaving most bands essentially greenfield for novel uses. As such, the risk of harmful interference between SpaceX's operations and other commercial users is vanishingly low. To the extent any such risk exists, the propagation characteristics of the band facilitate coexistence in close physical proximity. SpaceX will coordinate any operations in the band with the radio astronomy observatories listed in footnote US161, and satellite observations in the space research (passive) service, consistent with its long-standing commitment to collaborate with radio astronomers to protect their critical scientific work. To protect co-primary radiolocation and radionavigation services, SpaceX will coordinate with Federal agencies and non-Federal operators to ensure that those services can operate without harmful interference.

Importantly, and to demonstrate SpaceX's continued commitment to collaboration and coordination, SpaceX has and will continue to meet with relevant radio astronomy stakeholders to ensure that there is no harmful interference to their operations in these bands. SpaceX recognizes the importance of radio astronomy operations in sub-THz spectrum, including at the Atacama

⁴⁹ See *Spectrum Abundance NPRM*, 40 FCC Rcd at 3815-18, paras. 60-63 (discussing how benefits of W-band spectrum for FSS operators can help achieve the Commission's goals).

Large Millimeter/submillimeter Array; Submillimeter Array; James Clerk Maxwell Telescope; Arizona Radio Observatory; Owens Valley Radio Observatory; the South Pole Telescope; Cosmology Large Angular Scale Surveyor, Simons Array; Plateau de Bure Interferometer; and Institut de Radioastronomie Millimétrique. SpaceX looks forward to continuing the conversations with relevant radio astronomy stakeholders to ensure that it does not cause harmful interference to the important and critical radio astronomy operations.

SpaceX will coordinate its operations in these bands with passive Earth exploration satellite service to protect their operations. Most of the D-band frequencies SpaceX requests for its Gen3 system lie adjacent to the Earth-exploration satellite service. SpaceX will coordinate with federal agencies using this spectrum to ensure its out-of-band emissions do not cause harmful interference to passive sensors operating in the band, just as it has done to protect adjacent-band operations in the 86-92 GHz band.

SpaceX also requests to operate in the 148.5-151.5 GHz and 200-209 GHz frequency ranges and seeks a waiver of footnote US246 of the U.S. Table to conduct those operations. Footnote US246 prohibits radiocommunications transmissions in bands allocated to passive services such as the Earth exploration satellite service. But in contrast to heavily used passive sensor bands subject to US246 such as the 164-167 GHz and 174.8-191.8 GHz bands, the 148.5-151.5 GHz and 200-209 GHz bands are lightly used.

The 148.5-151.5 GHz band currently has three operational sensors—NASA’s Aqua, the DOW’s DMSP sensor, and China’s Fengyun-3D satellite—the former two of which are scheduled for end-of-mission this summer and end-of-life shortly thereafter, and the latter of which is slated for end-of-life around 2027.⁵⁰ After that, the 148.5-151.5 GHz band will have no operational or

⁵⁰ Stacy Kish, *Terra: The End of An Era*, THE EARTH OBSERVER (Dec. 29, 2025), <https://science.nasa.gov/science-research/earth-science/terra-the-end-of-an-era/>; National Centers for Environmental Information, *Defense*

planned sensors left. The forthcoming lack of any federal sensors present special circumstances that justify waiver of U.S. Table footnote 246 to permit bidirectional FSS uplink operations.⁵¹ Further, granting the waiver would not upset the purpose of the rule because SpaceX's operations—which must occur on a non-interference basis in any event—would present no risk of harmful interference into operational Earth-exploration satellite service sensors. In any event, SpaceX will coordinate its Gen3 operations with NASA and the Department of War to protect their passive operations through the end of the Aqua and DMSP operational lives. Moreover, SpaceX will coordinate its Gen3 operations with any future sensors that may operate in the band to prevent harmful interference.

The 200-209 GHz band is also relatively lightly used, with only two operational systems—NASA's Aura sensor and commercial operator Tomorrow.io. Like NASA's Aqua sensor, the NASA Aura sensor is scheduled for end-of-mission soon, likely within the next two years, eliminating any risk of harmful interference.⁵² While Tomorrow.io's millimeter-wave sounder remains operational with 13 low-Earth orbit satellites using a 2 gigahertz channel centered at 204.8 GHz, the propagation characteristics of fixed-satellites service operations in these frequencies make coexistence feasible even within the same band. SpaceX's operations in the band will feature ultra-narrow beams from fixed earth stations on the ground. Moreover, SpaceX intends to build upon its experience developing operational data sharing techniques with the radio astronomy

Meteorological Satellite Program (DMSP), NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, <https://www.ncei.noaa.gov/products/satellite/defense-meteorological-satellite-program>; see also World Meteorological Organization, Observing Systems Capability Analysis and Review Tool, <https://space.oscar.wmo.int/>.

⁵¹ 47 C.F.R. § 2.106(c)(246).

⁵² See e.g., NASA Aqua Summary, <https://aqua.nasa.gov/sites/default/files/AquaStatus.pdf>; see also NASA Aura, <https://science.nasa.gov/mission/aura/>.

community to protect spaceborne passive sensors from harmful interference. Any other risk may be addressed through good faith private coordination.

II. Waiver of Section 25.114(a)(1)—Limitations in Schedule S

As required by the Commission's rules,⁵³ SpaceX submitted with this application a completed Schedule S, which contains certain technical information in a prescribed form. But SpaceX has found that it cannot accurately describe its system in certain respects due to limitations in Schedule S itself. Below SpaceX discusses four aspects of the Gen3 system that fall into this category. To the extent necessary, SpaceX requests that the Commission waive these aspects of Schedule S in light of these limitations.

First, the Schedule S web form does not practically accommodate complete beam and orbital parameter data for the Gen3 system. Accordingly, and consistent with past SpaceX applications,⁵⁴ SpaceX has provided a sample of that data in the electronic version of Schedule S, which includes orbital parameters, for inclusion in the record of this application.⁵⁵ This database includes three representative orbital configurations for the Gen3 constellation. These configurations represent three possible configurations the Gen3 system could occupy but are not an exhaustive representation of all the configurations the Gen3 system could take. Therefore, while the database includes three possible configurations, for the avoidance of doubt SpaceX seeks to operate the proposed system of 100,000 satellites with the flexibility to use the configuration

⁵³ See 47 C.F.R. § 25.114(a)(1).

⁵⁴ See e.g., *SpaceX Gen2 Authorization*, DA 26-36 at 11; *id.* at n. 43 (citing SpaceX Gen2 Upgrade Modification. Waiver Requests at 4-7; SpaceX Gen2 Upgrade Amendment, Waiver Requests at 22-25); *see also* SpaceX Gen2 Upgrade Modification. Waiver Requests at 4 (“Accordingly, SpaceX will provide a sample of that data in the electronic version of Schedule S and deliver to the Commission a database with the complete information required on Schedule S, including orbital parameters, for inclusion in the record of this application.”).

⁵⁵ Because SpaceX will provide only a portion of its orbital parameter data in the Schedule S, not all aspects of the system will be accurately captured by that software. For example, the “Total Number of Satellites in the Active Constellation” will reflect the number provided in the sample rather than the total number in the Gen3 system.

best positioned to serve users at a given time, not limited to the three representative orbital configurations attached to the Schedule S.⁵⁶

Second, beams used by SpaceX satellites will be divided into small channels that, depending on utilization and other factors, may be bonded into channels as large as 3,900 MHz in the downlink and 3,500 MHz in the uplink for phased array antennas and 5,000 MHz in each direction for parabolic antennas. But Schedule S only permits entry of a single, static channel plan. Accordingly, SpaceX has provided an example of one possible channel plan on Schedule S, with the full range of channel configurations described more fully in the Technical Attachment. Because it is only possible to submit a single channel plan on Schedule S, and impracticable to include every possible permutation of channel bandwidths in the attached technical database, SpaceX has provided a representative channel plan that reflects the widest possible channel widths for each beam.

Third, SpaceX intends to operate at twenty different orbital altitudes with a range of antenna gains, resulting in many possible combinations of transmit and receive antenna gain contours. Rather than provide all possible contours for a representative satellite at all altitudes as contemplated by Section 25.114(c)(4)(vi)(B), SpaceX provided the contours for satellites at the lowest and highest relevant operating altitudes along with the lowest and highest antenna gains. Given that there is relatively little difference among the plots, this approach should illustrate the full range of values without requiring submission of contours for the very large number of possible combinations. SpaceX can supply the remaining contours to the Commission upon request.

⁵⁶ In this instant application SpaceX submits the data in .csv format. If the Commission staff requires an .mdb format for its review, SpaceX can submit the same information in the .csv in .mdb format.

Fourth, technical characteristics for the beams described in Schedule S were generated for the lowest (and therefore highest PFD) altitude requested. Certain parameters may very slightly vary for satellites at different altitudes.

III. Waiver of 25.146(a)(2) and (c)

Sections 25.146(a)(2) and (c) of the Commission’s rules require an NGSO FSS applicant to: (1) certify that it will comply with any applicable EPFD limits in Article 22 and Resolution 76 of the ITU Radio Regulations; and (2) receive a “favorable” or “qualified favorable” finding by the ITU Radiocommunication Bureau with respect to such compliance prior to initiating service.⁵⁷ SpaceX seeks limited waiver, to the extent necessary, of these rules for its Gen3 system’s Ka-band operations.

Consistent with the Commission’s findings in recent grants of similar waiver requests as well as its determination in the recently adopted *Spectrum Modernization R&O*, there is good cause to grant the requested waiver of Section 25.146(a)(2).⁵⁸ In the *Spectrum Modernization R&O* the FCC found that “existing EPFD limits are needlessly prescriptive, outdated, and overprotective of GSO operations, and that they unreasonably constrain services by innovative new NGSO systems.”⁵⁹ The Commission further found that strict adherence to these limits constrains NGSO capacity, reduces spectral efficiency, and imposes unnecessary costs on consumers, without a commensurate interference-protection benefit.⁶⁰ In place of this outdated framework, the

⁵⁷ 47 C.F.R. § 25.146(a)(2), (c).

⁵⁸ *SpaceX Gen2 Authorization*, DA 26-36 at 7, para. 4; *id.* at 10-13, paras. 16-19; *see also Kuiper Gen1, Gen2, and Polar Grant* at 5-7.

⁵⁹ *See Modernizing Spectrum Sharing for Satellite Broadband*, SB Docket No. 25-157, Report and Order, FCC 26-26, para. 48 (2026) (“*Spectrum Modernization R&O*”).

⁶⁰ *Id.* at paras. 48-49.

Commission has adopted a domestic approach based on objective, performance-based metrics.⁶¹ The Commission intended for its new framework to apply immediately, noting that further delay “would sacrifice the immediate economic and other benefits of the new framework.”⁶²

Indeed, “[r]etaining the existing EPFD limits, even temporarily, would have a concrete and substantial impact on NGSO deployment and the ability of NGSO operators to deliver innovative new services to customers.”⁶³ In recognition of the strong public interest benefits of the Commission’s new framework for consumers, SpaceX seeks to comply with the Commission’s updated sharing framework for GSO and NGSO systems, as it may be modified through future Space Bureau action. But since these the rules adopted by the Commission in the *Spectrum Modernization R&O* are not yet effective, SpaceX seeks to waive the requirement to demonstrate compliance with a legacy EPFD mask that the Commission has already determined is not the appropriate metric for real-world interference protection.

SpaceX also requests a waiver of Section 25.146(c) of the Commission’s rules to permit U.S. domestic service to commence prior to completion of the ITU validation process.⁶⁴ The Commission has previously granted this precise relief.⁶⁵ In authorizing SpaceX’s Gen2 system, the Commission found good cause to grant a waiver of Section 25.146(c) of its rules stating that doing so was in the public interest due “to the benefits to SpaceX’s service and thus American consumers and the continued protection of GSO operators.”⁶⁶ The same public interest benefits

⁶¹ *Id.* at paras. 50-71.

⁶² *Id.* at para. 80.

⁶³ *Id.*

⁶⁴ 47 C.F.R. § 25.146(c).

⁶⁵ *SpaceX Gen2 Order*, DA 26-36 at 10-13, paras. 16-19; *see also Kuiper Gen1, Gen2, and Polar Grant* at 5-6.

⁶⁶ *SpaceX Gen2 Order*, DA 26-36 at 11, para. 17.

apply here. SpaceX will continue to pursue the relevant ITU filings and will submit any required favorable or qualified favorable findings to the Commission when available. SpaceX further commits to operate on an “at-risk” basis, acknowledging that it will make any necessary operational adjustments should subsequent ITU findings require modification. This approach preserves the integrity of the ITU process while avoiding unnecessary delay in the deployment of advanced NGSO services in the United States.

For the foregoing reasons, SpaceX respectfully requests that the Commission grant a waiver of Sections 25.146(a)(2) and (c) to the extent necessary as grant of such relief is fully consistent with Commission precedent, advances the public interest, and ensures that the Commission’s rules are applied in a manner that reflects current technical realities and policy objectives.

IV. Waiver of Sections 25.156(d) and 25.157: Processing Round Procedures

SpaceX respectfully requests a waiver of the Commission’s processing round rules in Sections 25.156(d) and 25.157 for the frequency bands that were not explicitly included in the processing round established in the *June 5th Processing Round PN*.⁶⁷ Under Section 25.156(d) and 25.157 of the Commission’s rules, applications for authority to launch and operate an NGSO-like system are ordinarily processed under a “modified processing round” framework, which establishes common status and interference protections for systems within a round, with a default band splitting mechanism during in-line events to share spectrum among competing applicants.⁶⁸

⁶⁷ *June 5th Processing Round PN*, DA 26-552. The frequencies included in this processing round include 10.7-12.7 GHz, 12.7-13.25 GHz, 13.75-14.0 GHz, 14.0-14.5 GHz, 15.43-15.63 GHz, 17.3-17.7 GHz, 17.7-17.8 GHz, 17.8-18.6 GHz, 18.6-18.8 GHz, 18.8-19.3 GHz, 19.3-19.7 GHz, 19.7-20.2 GHz, 24.75-25.75 GHz, 27.5-29.1 GHz, 29.1-29.5 GHz, 29.5-30.0 GHz, 37.5-40.0 GHz, 40.0-42.0 GHz, 47.2-50.2 GHz, and 50.4-51.4 GHz bands by NGSO FSS systems. *Id.* at 1.

⁶⁸ See 47 C.F.R. §§ 25.156(d)(1) (“Applications for NGSO-like satellite operation will be considered pursuant to the procedures set forth in § 25.157, except as provided in § 25.157(b) or (i), as appropriate.”), 25.157.

The primary purpose of the processing round procedure is to prevent one applicant from unreasonably precluding additional entry by other satellite operators in the requested frequency band.⁶⁹ The Commission explained that processing rounds are intended to create an orderly and predictable sharing environment, not to impose artificial procedural barriers that undermine efficient deployment of modern NGSO systems.⁷⁰ The Commission waived the processing round requirement and allowed NGSO systems access to the entire frequency band when doing so will not preclude additional entry.⁷¹ In so doing, the Commission found that good cause exists to grant a waiver where grant “would not create new spectrum conflicts with other operators” and where “it was more efficient to authorize the requested operations with conditions than to initiate a processing round for those frequencies.”⁷² Moreover, the Commission waived the processing round rounds where, as here, an applicant requested to operate on a non-interference, unprotected basis, including a request to operate in a manner that does not conform to the U.S. Table.⁷³ Similarly, the Commission declined to require a processing round non-conforming spectrum in its

⁶⁹ See *Streamlining Licensing Procedures for Small Satellites*, IB Docket No. 18-86, Notice of Proposed Rulemaking, 33 FCC Rcd 4152, 4171, para. 41 (2018) (“The Commission adopted this [processing round] approach for NGSO-like satellite systems because of the possibility of otherwise unreasonably limiting additional market entry if licenses were granted on a first-come, first-served basis.”); see also *Amendment of the Commission’s Space Station Licensing Rules and Policies*, First Report and Order and Further Notice of Proposed Rulemaking in IB Docket No. 02-34, and First Report and Order in IB Docket No. 02-54, 18 FCC Rcd. 10760, 10774-75, para. 25 (2003) (“2003 Licensing R&O”); *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, IB Docket No. 16-408, Report and Order and Further Notice of Proposed Rulemaking, 32 FCC Rcd 7809, 7829, para. 61 (2017).

⁷⁰ *Revising Spectrum Sharing Rules for Non-Geostationary Orbit, Fixed-Satellite Service Systems*, IB Docket No. 21-456, Report and Order and Further Notice of Proposed Rulemaking, FCC 23-29, at 4, para. 11 (rel. Apr. 21, 2023) (“NGSO Spectrum Sharing R&O”).

⁷¹ See, e.g., *Iridium Constellation LLC*, Order and Authorization, 31 FCC Rcd. 8675, ¶ 41 (IB & OET 2016) (“*Iridium*”) (waiving processing round requirements for an NGSO system because access will not preclude additional entry); *O3b Limited*, Public Notice, 30 FCC Rcd. 6115 (IB 2015); *Northrop Grumman* ¶¶ 23-34; *Space Imaging, LLC*, Declaratory Order and Order and Authorization, 20 FCC Rcd. 11964, ¶ 10 (IB 2005) (same); *Lockheed Martin Corporation*, Order and Authorization, 20 FCC Rcd. 11023, ¶ 15 (IB 2005) (same).

⁷² *SpaceX Gen2 Order*, DA 26-36 at 7-8, para. 13; *Space Exploration Holdings, LLC, Request for Orbital Deployment and Operating Authority for the SpaceX Gen2 NGSO Satellite System*, Order and Authorization, 39 FCC Rcd 2159, 2164, para. 11 (SB rel. Mar. 8, 2024).

⁷³ See *SpaceX Gen2 Order*, DA 26-36 at 8, para. 14.

third Ku/Ka/V-band processing round, including many of the bands SpaceX requests for its Gen3 system.⁷⁴ And the Commission now stand poised to follow through on its proposal to exclude bands above 52 GHz from its processing round rules altogether.

This precedent demonstrates that Section 25.157 is a procedural tool, not a barrier, and may be waived where strict application would elevate form over substance. SpaceX's Gen3 Application presents similar circumstances. SpaceX requests to include its Gen3 system in the processing round for those bands the Commission included in its public notice announcing the round. For other bands, good cause exists for granting a waiver. Some of the frequencies SpaceX requests for its Gen3 system outside of the third processing round are bands for which the Commission already waived its processing round requirements and declined to include in the third processing round. The same good cause exists for granting a waiver for the Gen3 system. Other bands SpaceX requests outside the third processing round lack a formal FSS allocation, meaning SpaceX would have to operate on a non-interference, non-protection basis and *could not* preclude future entry. In those cases, the Commission waived the processing round requirements conditioned on participating in a future processing round should the operator seek spectrum protection. The physics of the high frequency bands targeted by SpaceX in V-, E-, W-, and D-band for the Gen3 system also warrant waiver of a processing round because they will enable the use of narrow, directional beams that facilitate spectrum sharing strategies and thus would not preclude entry by other satellite systems. Across all bands in the Gen3 system that fall outside the processing round, limited interest exists from other satellite operators for using the new frequency bands that SpaceX proposes to use in the Gen3 system. Nevertheless, SpaceX will coordinate its

⁷⁴ See *SpaceX Gen2 Order*, DA 26-36 at 7-10, paras. 13-15.

operations in good faith and efficient coordination should there be any other FSS systems in these bands in the future.

In addition, grant of this waiver request is in the public interest because it enables the Commission to evaluate SpaceX's Gen3 system holistically as it is actually designed to operate, rather than as an artificially segmented construct. The Commission has repeatedly emphasized that its NGSO framework is intended to promote efficient spectrum use, robust competition, and rapid deployment of advanced satellite services.⁷⁵ Allowing holistic consideration of SpaceX's Gen3 system advances each of these goals. Moreover, conditioned treatment of out-of-round frequencies ensures that all relevant interference protections and coordination mechanisms remain fully intact.

In addition, there is good cause to grant this waiver of the processing round procedure because doing so would avoid costly regulatory delays to the enhancement of SpaceX's high-capacity, low-latency satellite broadband service. SpaceX has been rapidly innovating to provide high-capacity, low-latency satellite broadband service to meet the demand for high-quality, real-time services. As the Commission recognizes—supporting next-generation connectivity and maintaining U.S. leadership in space requires a meaningful pipeline of spectrum, and flexible use of that spectrum to meet evolving needs.⁷⁶

Strict adherence to Section 25.157 in this context would impose unnecessary procedural barriers without yielding corresponding public-interest benefits. For example, SpaceX would be required to defer the benefits of this new system if SpaceX has to wait until the FCC announces a new processing round, sets a “cut-off” date, and engages in lengthy review of other applications.

⁷⁵ See e.g., *NGSO Spectrum Sharing R&O*.

⁷⁶ *Spectrum Abundance NPRM*, 40 FCC Rcd at 3794-92, paras. 1-2.

This would also deprive Americans in unserved and underserved locations of access to the robust broadband they require to keep pace in an increasingly connected world. It also would harm American competitiveness abroad by delaying deployment of a U.S.-licensed satellite system designed to meet the needs of the AI age.

For the foregoing reasons, SpaceX respectfully requests that the Commission grant a waiver of Section 25.157 to enable SpaceX to receive authorization for and swiftly bring this new spectrum into use for the benefit of American consumers. Such relief is consistent with Commission precedent and necessary to ensure that the Commission's rules are applied in a manner that reflects modern NGSO system design and the Commission's own policy objectives.

V. Waiver of Section 25.159(b)—Limits on Number of Pending Applications

Building upon its considerable experience providing high-speed broadband and innovating satellite technology, SpaceX's Gen3 system will deliver provide higher capacity and even lower latency using spectrum already authorized for use by its Gen2 system.⁷⁷ Some of the frequency bands for which SpaceX seeks authorization for the Gen3 system are included in this open processing round and are simultaneously being sought for authorization for SpaceX's Gen2 system.⁷⁸ In particular, these frequencies include the 12.7-13.25 GHz, 13.75-14.80 GHz, 15.43-15.63 GHz, 17.3-17.8 GHz, 18.6-18.8 GHz, 19.3-19.7 GHz, 24.75-25.25 GHz, 37.5-40 GHz, 40-42 GHz, 47.2-50.2 GHz, and 50.4-51.4 GHz frequency ranges.

⁷⁷ *SpaceX Gen2 Order*, DA 26-36.

⁷⁸ *See June 5th Processing Round PN*, DA 26-552 at 2-3 (“We therefore include SpaceX’s operations, as authorized and conditioned in the SpaceX Gen2 V3 Upgrade Order, in the respective third Ku-/Ka-band and third V-band processing rounds for its operations in the following frequency bands: 12.7-13.25 GHz, 13.75-14.0 GHz, 14.5-14.75 GHz, 14.75-14.80 GHz, 15.43-15.63 GHz, 17.3-17.8 GHz, 18.6-18.8 GHz, 19.3-19.7 GHz, 24.75-25.25 GHz, 29.1-29.5 GHz, 37.5-40.0 GHz, 40.0-42.0 GHz, 47.2-50.2 GHz, and 50.4-51.4 GHz.”).

Based on the plain reading of the FCC’s determination in the *2003 Licensing R&O* the Section 25.159(b) limits on multiple pending applications do not apply in this context.⁷⁹ Nevertheless, SpaceX requests a waiver, to the extent necessary, of the Section 25.159(b) requirement that limits the number of pending applications by a NGSO-like satellite applicant in a particular frequency band in the same processing round.⁸⁰ SpaceX’s Gen3 system application presents special circumstances that warrant deviation from the Commission prohibition on multiple pending applications in a processing round. The Commission originally adopted Section 25.159—in conjunction with surety bond, “three strikes,” and deployment milestone requirements—as a means of restricting operators from warehousing or trafficking spectrum by simultaneously submitting multiple applications for new NGSO-like systems within a processing round.⁸¹ But SpaceX’s Gen3 application represents the precise opposite situation. In this case, SpaceX filed its first application nearly two years ago, the Commission already reviewed and approved that request, and SpaceX is poised to launch its first satellites under that license. And while the Commission has not initiated a new processing round since then, the Commission could not have intended to prohibit SpaceX from participating in a processing round years later for a completely new constellation. The Commission never aimed to “preclude legitimate applications from consideration” but instead adopted Section 25.159 to “restrain speculation without restricting applicants’ business plans.”⁸²

⁷⁹ *2003 Licensing R&O*, 18 FCC Rcd at 10848-49, para. 233; *see also* 47 C.F.R. § 25.159(e) (limiting the scope of Section 25.159(b) to “the paired frequency bands available for satellite service listed in § 25.202.”).

⁸⁰ 47 C.F.R. § 25.159(b) (“Applicants with an application for one NGSO-like satellite system license on file with the Commission in a particular frequency band will not be permitted to apply for another NGSO-like satellite system license in that frequency band in the same processing round subject to the procedures of §§ 25.157 and 25.261.”).

⁸¹ *2003 Licensing R&O*, 18 FCC Rcd at 10846-52, paras. 227-243.

⁸² *Id.* at 10847, para. 230 (“We agree with Teledesic that limiting pending applications to five GSO orbit locations or one NGSO satellite system per frequency band will restrain speculation without restricting applicants’ business

The Commission's decision to split SpaceX's Gen2 System across multiple processing rounds also creates special circumstances that warrant waiver of Section 25.159. When the Commission announced its third Ku/Ka/V-band processing round, it included a wide range of frequencies, including all Ku- and Ka-band frequencies with fixed-satellite service allocations within SpaceX's Gen2 authorization. But the notice also explains that SpaceX's Gen2 system will be a part of its third-round *only* for newly authorized Ku and Ka-band spectrum. The Ku- and Ka-band spectrum space requested as a part of its original Gen2 System application retain their status in the 2020 processing round.

Waiving the processing round in the current circumstance is consistent with the objectives of the current rule and is aligned with the proposed rule currently being considered by the Commission.⁸³ The Commission originally adopted the rule against multiple applications for the same frequency bands submitted by the same entity in the same round to deter warehousing and encourage construction, launch, and operation of constellations. In other words, the Commission intended to drive operators to launch systems quicker, which is consistent with SpaceX's waiver request. In contrast, denying the waiver request would have the unintended consequence of deterring operators from launching new constellations at a pace that outruns the Commission's ability to start new processing rounds.

But more importantly, SpaceX applied for its Gen2 system years ago and the Commission has already licensed those satellites and operations. This approval triggered the running of the Gen2 deployment milestones from a date before this instant processing round was even opened.

plans."); *id.* ("We disagree that this limit on pending applications will preclude legitimate applications from consideration. Rather, it simply requires satellite operators to prioritize their business plans.").

⁸³ See generally *Space Modernization for the 21st Century*, SB Docket No. 25-306, Report and Order and Further Notice of Proposed Rulemaking, FCC-CIRC2607-02, at paras. 166-93 (rel. Jul. 1, 2026).

In fact, SpaceX launched satellites under the Gen2 license before filing the application for its Gen3 system. In contrast, SpaceX's Gen3 system is an entirely new constellation, which will be subject to a new set of deployment milestones.

In other words, SpaceX will not have two pending applications in the same round—it will have one pending application for a new system and a separate license for an operational constellation. The possibility that both applications could even be considered as part of a single processing round is only the artifact of the happenstance of the timing of the processing rounds and entirely outside of SpaceX's control. In fact, this waiver would not even be necessary under the new rules the Commission is considering this month to address exactly this sort of situation. Under the new rules the Commission would have run multiple annual processing rounds since SpaceX submitted its Gen2 application.

Hence, granting the instant request to waive Section 25.159 of the Commission's rules is not only consistent with the intent of the current rule to encourage new deployments but also would not even be necessary under the new rules. Accordingly, the Commission should, to the extent necessary, grant SpaceX the requested waiver to best serve American consumers.

VI. Conclusion

For the foregoing reasons, the Commission should find that there is good cause for the grant a waiver, to the extent necessary, of various limitations in the Commission's Schedule S, and to grant a waiver of Sections 2.106, 25.114(a)(1), 25.146(a)(2), 25.146(c), 25.156(d), 25.157, and 25.159(b) of the Commission's rules.