

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:  
Hawthorne CA Gateway STA Request

1. Applicant

Name:	SpaceX Services, Inc.	Phone Number:	202-649-2700
DBA Name:		Fax Number:	
Street:	1155 F Street, N.W.	E-Mail:	patricia.cooper@spacex.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20004
Attention:	Ms Patricia Cooper		



File # SES-STA - 20190410 - 00513

Call Sign E190161 Grant Date 5/9/2019  
(or other identifier)

Term Dates

From 5/15/2019 To: 5/14/2020

Approved: Paul C. Blair

*For a 60 day period.*  
*PCB*

<b>2. Contact</b>		<b>Name:</b> William M. Wiltshire	<b>Phone Number:</b> 202-730-1350
<b>Company:</b>	Harris, Wiltshire & Grammis LLP	<b>Fax Number:</b> 202-730-1301	
<b>Street:</b>	1919 M Street, NW	<b>E-Mail:</b> wwiltshire@hwglaw.com	
<b>Suite:</b>	Suite 800		
<b>City:</b>	Washington	<b>State:</b> DC	
<b>Country:</b>	USA	<b>Zipcode:</b> 20036	
<b>Attention:</b>		<b>Relationship:</b> Legal Counsel	
<p>(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)</p> <p>3. Reference File Number SESLICINTR201900882 or Submission ID</p>			
4a. Is a fee submitted with this application?			
<p><input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).</p> <p><input type="radio"/> Governmental Entity <input checked="" type="radio"/> Noncommercial educational licensee</p> <p><input type="radio"/> Other (please explain):</p>			
4b. Fee Classification CGX – Fixed Satellite Transmit/Receive Earth Station			
5. Type Request			
<p><input checked="" type="radio"/> Use Prior to Grant <input checked="" type="radio"/> Change Station Location <input type="radio"/> Other</p>			
6. Requested Use Prior Date 05/01/2019			
7. City/Hawthorne			
8. Latitude (dd mm ss.s h) 33 55 16.3 N			

9. State CA	10. Longitude (dd mm ss.h) 118 19 33.9 W
11. Please supply any need attachments. Attachment 1: Gateway STA Request	Attachment 2: Attachment 3:
12. Description. (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)  SpaceX Services seeks special temporary authority for communications between its Ku-band gateway earth station and the first tranche of SpaceX NGSO satellites for 60 days after orbital injection.	13. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of &quot;party to the application&quot; for these purposes.
14. Name of Person Signing Patricia Cooper	15. Title of Person Signing Vice President, Satellite Government Affairs
WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).	

## **FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT**

The public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD-PERM, Paperwork Reduction Project (3060-0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to [PRA@fcc.gov](mailto:PRA@fcc.gov). PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

Remember – You are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060-0678.

**THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.**

Applicant: SpaceX Services, Inc.  
 IBFS File Number: SES-STA-20190410-00513  
 Call Sign(s): E190161



File # SES-STA-20190410-00513

Call Sign E190161 Grant Date 5/9/2019

(or other identifier)

Term Dates

From 5/5/2019 To: 5/14/2020

Approved: Paul E. Blas

Pursuant to the attached Basis of Grant, SpaceX Services, Inc. (SpaceX) is granted special temporary authority for 60 days from the date of satellite launch to operate its four Cobham, Model MK3 series, 1 meter fixed antenna earth station in Hawthorne, CA with the SpaceX S2983 NGSO satellites operating in the 550x 550 km NGSO orbit, inclined to 97.59°, to test the communications payload on each of the up to 75 satellites in the 10.7-12.7 GHz (space-to-Earth) and 14.0-14.5 GHz (Earth-to-space) frequency bands under the following conditions.

1. Operations are limited to:

Antenna Id	Frequency Bands (MHz)	T/R Mode	Polarization(H,V,L,R)	Emission Designator	Maximum EIRP per Carrier(dBW)	Maximum ERIP Density per Carrier(dBW/4kHz)
HA-1	10700 12700	R	Right Hand Circular	240MD7W	0.0	0.0
Modulation and Services BPSK up to 64QAM; Digital Data						
HA-1-1	14000 14500	T	Right Hand Circular	240MD7W	50.43	-33.37
Modulation and Services BPSK up to 64QAM; Digital Data						

2. All operations under this grant of special temporary authority must be on an unprotected and non-harmful interference basis, *i.e.*, SpaceX must not cause harmful interference to, and must not claim protection from interference caused to it by, any other lawfully operating station.
3. In the event of any harmful interference under this grant of special temporary authority, SpaceX must cease operations immediately upon notification of such interference and must inform the Commission, in writing, immediately of such an event.
4. Operations authorized here must comport with the conditions imposed in DA 19-342.<sup>1</sup>
5. The term of this authorization commences on the date of launch of the up to 75 satellites covered by this grant. SpaceX must notify the Chief of the Satellite Division, in writing, of the date of launch and the commencement of this grant of special temporary authority.
6. Grant of this authorization is without prejudice to any determination that the Commission may make regarding pending or future SpaceX applications.
7. Any action taken or expense incurred as a result of operations pursuant to this STA is solely at SpaceX's risk.

This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 CFR § 0.261, and is effective immediately.

<sup>1</sup> Space Exploration Holdings, LLC, Order and Authorization, DA 19-342 (IB rel. Apr. 26, 2019) (SpaceX Modification Order).

## Basis for Grant

On April 18, 2019, WorldVu Satellites Limited (OneWeb) submitted a letter opposing SpaceX's requests for special temporary authority (STA).<sup>2</sup> On April 23, 2019, SpaceX responded to OneWeb's letter.<sup>3</sup> On April 25, 2019, EchoStar Satellite Operating Corporation and Hughes Network Systems, LLC (together with their affiliates, "EchoStar"), and Intelsat License LLC (Intelsat) submitted a written *ex parte* presentation in response to developments in the above-referenced proceedings concerning, *inter alia*, the SpaceX modification application and the gateway earth station and space station STA requests.<sup>4</sup>

OneWeb raises concerns that SpaceX fails to present "extraordinary circumstances" requiring temporary operations, as required by Section 309(f) of the Communications Act and Section 25.120(b) of the Commission's rules.<sup>5</sup> In this instance, SpaceX seeks authority to operate its gateway earth stations for special operations (launch and early operations and testing) of a temporary nature (for brief period of time prior to commencement of commercial operations). Such operations have been granted through STAs routinely in the past for similar in-orbit testing (IOT) operations for geostationary satellites prior to commencing operations,<sup>6</sup> and for LEOP operations for NGSO satellites.<sup>7</sup> The ability to operate gateway earth stations to communicate with satellites during the orbit-raising phases, as requested in this application, is important to ensure proper functioning and to identify and correct any issues before satellites reach operational orbit. Accordingly, grant of the requested STAs for SpaceX's gateway earth stations to communicate with its authorized space stations serves the public interest.

OneWeb also argues that SpaceX is attempting to shortcut the Commission's review of SpaceX's modification application that was pending before the Commission at the time SpaceX filed its requests for earth station and space station special temporary authority.<sup>8</sup> OneWeb further asserts that the requests for STA were incomplete as filed.<sup>9</sup> As an initial matter, SpaceX's modification application was granted on

---

<sup>2</sup> Letter from Brian D. Weimer, Counsel to OneWeb, to Marlene H. Dortch, Secretary, FCC, dated April 18, 2019 (OneWeb Opposition).

<sup>3</sup> See Letter from William M. Wiltshire, Counsel to SpaceX, to Marlene H. Dortch, Secretary, FCC, dated April 23, 2019.

<sup>4</sup> See Letter from Jennifer A. Manner, Senior Vice President, Regulatory Affairs, EchoStar Satellite Operating Company and Hughes Network Systems, LLC; and Susan H. Crandall, Associate General Counsel, and Cynthia J. Grady, Senior Counsel, Intelsat US LLC, to Marlene H. Dortch, Secretary, FCC, dated April 23, 2019.

<sup>5</sup> OneWeb Opposition at 1-2 (citing 47 U.S.C. § 309(f) and 47 CFR § 25.120(b)).

<sup>6</sup> See, e.g., IBFS File Nos. SAT-STA-20170302-00032, SAT-STA-20170314-00050, SAT-STA-20170526-00080, SAT-STA-20170718-00105, SAT-STA-20170921-00135, SAT-STA-20180118-00007, SAT-STA-20171218-00173, SAT-STA-20180214-00016, & SAT-STA-20180905-00066. Certain temporary operations (except in-orbit testing) are already permitted by rule, without the need to seek further Commission authorization, for satellites authorized to operate in the geostationary orbit. 47 CFR § 25.282 ("A space station authorized to operate in the geostationary satellite orbit under the part is also authorized in connection with short-term, transitory maneuvers directly related to post-launch, orbit-raising maneuvers, provided [certain conditions are met].") There is no similar rule automatically authorizing the temporary operations of satellites authorized to operate in non-geostationary orbits.

<sup>7</sup> The Satellite Division has previously granted special temporary authority for launch and early operation phase (LEOP) for NGSO space stations. See, e.g., IBFS File No. SAT-STA-20170726-00109 & SAT-STA-20180724-00055 (granting 180-day STAs to Terra Bella for LEOPs).

<sup>8</sup> OneWeb Opposition at 3-4.

<sup>9</sup> *Id.* at 5.

April 26, 2019,<sup>10</sup> and thus the argument regarding shortcircuiting the review of then-pending modification application is moot. In addition, we find that SpaceX's requests for STA provide, as required by our rule governing STA requests, "the full particulars of the proposed operation including all facts sufficient to justify the temporary authority sought and the public interest therein."<sup>11</sup> The information provided in the STA requests, in conjunction with the information in its modification application that was incorporated by reference, is fully consistent with the information provided in other requests for STA in connection with LEOP and in-orbit testing operations.

Finally, EchoStar and Intelsat argue in their *ex parte* filing that the STA request made an insufficient showing to grant a waiver of a condition on SpaceX's previous license grant that required, prior to the launch of SpaceX's system, the International Telecommunication Union to issue a "favorable" or "qualified favorable" finding that SpaceX's proposed operations will meet equivalent isotropically radiated power (EIRP) limits. This issue was addressed by the International Bureau in the grant of SpaceX's modification application and is not a basis for denial of grant of SpaceX's requests for STA.<sup>12</sup>

---

<sup>10</sup> *Space Exploration Holdings, LLC*, Order and Authorization, DA 19-342 (IB rel. Apr. 26, 2019) (*SpaceX Modification Order*).

<sup>11</sup> 47 CFR § 25.120(a).

<sup>12</sup> *SpaceX Modification Order* at para.28.

## REQUEST FOR SPECIAL TEMPORARY AUTHORITY

SpaceX Services, Inc. (“SpaceX Services”), pursuant to Section 25.120 of the Commission’s rules, hereby requests Special Temporary Authority (“STA”) to operate its gateway earth stations for up to 60 days to communicate with the first tranche of non-geostationary orbit (“NGSO”) satellites to be launched by its sister company, Space Exploration Holdings, LLC (“SpaceX”). SpaceX Services currently has applications pending for six Ku-band gateway earth stations, located in North Bend, WA; Conrad, MT; Merrillan, WI; Greenville, PA; Redmond, WA; and Hawthorne, CA.<sup>1</sup> It would operate each earth station under the requested STA with the technical characteristics set forth in the associated pending application.

The Commission has good cause to approve this request to enhance the safety of space. Specifically, the requested STA would permit SpaceX Services to communicate with the SpaceX NGSO satellites and conduct in-orbit testing during the orbit-raising phase. The requested STA would allow SpaceX to confirm the operational status of its satellites immediately upon insertion, rather than wait weeks while the satellites are orbit raising to ensure proper functioning. This testing would yield a number of public interest benefits. For instance, SpaceX could act quickly in the unlikely event of a performance issue with one of its spacecraft to identify and correct the problem even before the satellites reach operational orbit. Accordingly, the STA will serve the public interest by enhancing space safety and promoting the health and safety of SpaceX’s NGSO constellation.

SpaceX Services will operate on a non-interference basis. As set forth in the underlying earth station applications, these gateways will protect terrestrial and space systems in shared spectrum bands. Specifically, they will observe the applicable equivalent power flux-density (“EPFD”) limits set forth in Article 22 and Resolution 76 of the ITU Radio Regulations and the applicable power flux-density (“PFD”) limits set forth in the Commission’s rules and Article 21 of the ITU Radio Regulations, which the Commission has found sufficient to protect GSO systems and terrestrial systems, respectively, against harmful interference. In addition, SpaceX Services has completed frequency coordination for each of its proposed earth station sites, providing additional assurance that they can operate on a non-interference basis. In the extremely unlikely event that harmful interference should occur due to transmissions to or from its earth station, SpaceX Services will take all reasonable steps to eliminate the interference. Should an issue arise, SpaceX Services can be reached at [satellite-operators-pager@spacex.com](mailto:satellite-operators-pager@spacex.com), which links to the pagers of appropriate technical personnel 24/7.

The first tranche of SpaceX satellites is scheduled to be launched in early May 2019. Accordingly, SpaceX Services requests that the Commission issue an STA structured to begin on the launch date and remain in force for up to 60 days.

---

<sup>1</sup> The IBFS file numbers for these earth station applications are SES-LIC-INTR2019-00877 through -00882, respectively. Those applications contain all relevant operational characteristics and are hereby incorporated herein to the extent necessary.