



File # SAT-STA-2020 0103-00005

S2983

Call Sign 53018

Grant Date 01/30/20

(or other identifier)

Term Dates period of

From 01/11/20

To: 30 days

Approved: Stephen J. Duall

Approved by OMB
3060-0678

Date & Time Filed: Jan 3 2020 4:53:57:046PM
File Number: SAT-STA-20200103-00005
Callsign:

*with conditions

Stephen J. Duall
Chief, Satellite Policy Branch

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SPACE STATION SPECIAL TEMPORARY AUTHORITY
FOR OFFICIAL USE ONLY

APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:

Respacing STA Extension Request

1. Applicant

Name:	Space Exploration Holdings, LLC	Phone Number:	202-649-2700
DBA Name:		Fax Number:	202-649-2701
Street:	1155 F Street, N.W. Suite 475	E-Mail:	patricia.cooper@spacex.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20004
Attention:	Ms Patricia Cooper		

ATTACHMENT TO GRANT
Space Exploration Holdings, LLC
IBFS File No. SAT-STA-20200103-00005

IBFS File No(s):	SAT-STA-20200103-00005 ⁵	GRANTED – With Conditions  International Bureau Satellite Division
Licensee/Grantee:	Space Exploration Holdings, LLC	
Call Sign:	S2983/S3018	
Satellite Name:	SpaceX Ku/Ka-band Starlink Constellation	
Orbital Location: (required station-keeping tolerance)	Non-geostationary orbit (NGSO)	
Administration:	United States of America	
Nature of Service:	Telemetry, Tracking, and Command (TT&C); Testing	
Scope of Grant:	Special temporary authority (STA) for a period of 30 days to conduct Launch and Early Orbit-Phase (LEOP) operations (1) to perform TT&C necessary for orbit-raising of each of the 60 satellites that were launched on November 11, 2019 from the initial payload testing altitude of 350 km to an altitude of 550 km and deploy them into the orbital planes specified in SpaceX’s recently granted modification, ¹ and (2) to test the communications payload on each of the 60 satellites. ²	
Service Area(s):	Not Applicable	
Frequencies:	TT&C Frequencies 12.221 GHz (space-to-Earth) and 13.925 GHz (Earth-to-space) Payload Testing Frequencies Ku-band: 10.7-12.7 GHz (space-to-Earth) and 14.0-14.5 GHz (Earth-to-space) Ka-band: 17.8-18.6 GHz, 18.8-19.3 GHz, and 19.7-20.2 GHz (space-to-Earth); and 27.5-28.35 GHz, 28.35-29.1 GHz and 29.5-30.0 GHz (Earth-to-space).	
Operations under this grant must comport with the legal and technical specifications set forth by the applicant or petitioner and with Federal Communication Commission’s rules not waived herein. This grant is also subject to the following conditions:		

¹ See *Space Exploration Holdings, LLC, Request for Modification of the Authorization for the SpaceX NGSO Satellite System*, Order and Authorization, DA 19-1294 (IB rel. Dec. 19, 2019) (*SpaceX Second Modification Order*).

² Various petitions were filed against SpaceX's first STA request for this second tranche of Starlink satellites. See *Written Ex Parte* Presentation of EchoStar Satellite Operating Corp., Hughes Network Systems, Intelsat, and AT&T, IBFS File No. SAT-STA-20190924-00098 (filed Oct. 9, 2019); Letter from Nickolas G. Spina, Counsel to Kepler Communications, Inc., to Marlene H. Dortch, Secretary, FCC, IBFS File No. SAT-STA-20190924-00098 (filed Oct. 15, 2019); Notice of Written Ex Parte of WorldVu Satellites Limited, IBFS File No. SAT-STA-20190924-00098 (filed Oct. 17, 2019) (*OneWeb Ex Parte*). We granted that STA in part and deferred in part. See Policy Branch Information, Public Notice, Report No. SAT-01427, DA 19-1178 (Nov. 14, 2019). Specifically, SpaceX's request to deploy its recently launched satellites to new orbital planes as specified in its recent modification application was deferred pending the outcome of that application. See *Space Exploration Holdings, LLC, Request for Special Temporary Authority*, DA 19-1178 (Granted in part and deferred in part Nov 7, 2019) (*SpaceX Second Tranche LEOPS STA*). As that modification has been granted in the *SpaceX Second Modification Order*, and as the majority of petitions against SpaceX's STA expressed concerns regarding SpaceX's request to place satellites in new orbital planes proposed in what was at the time a pending modification, we find those comments to be moot and do not address them further here. All other comments were addressed in the grant of the original STA for this tranche of satellites. See *SpaceX Second Tranche LEOP STA* at 3-4. For ease of reference, all relevant conditions in the prior grant are repeated here.

ATTACHMENT TO GRANT
Space Exploration Holdings, LLC
IBFS File No. SAT-STA-20200103-00005

1. 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.
2. In the event of any harmful interference under this grant of special temporary authority, SpaceX must immediately cease operations upon notification of such interference and inform the Commission, in writing, of such an event.
3. SpaceX's payload-frequency operations must be limited to testing and must not include provision of commercial services.
4. During LEOP operations SpaceX must operate only the TT&C frequencies and test frequencies specified above.
5. SpaceX must make available to any requesting party the data used as input to the ITU-approved validation software to demonstrate compliance with applicable equivalent power flux density (EPFD) limits.
6. Operations authorized in this grant of STA must comport with any conditions contained in the *SpaceX Second Modification Order*.

Licensee/grantee is afforded thirty (30) days from the date of release of this action to decline the grant as conditioned. Failure to respond within this period will constitute formal acceptance of the grant as conditioned.

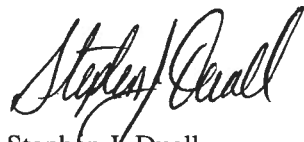
This action is taken pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 CFR § 0.261, and is effective upon release.

Station licenses are subject to the conditions specified in Section 309(h) of the Communications Act of 1934, as amended, 47 U.S.C. § 309(h).

Action Date:	January 30, 2020
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Term Dates	From: January 11, 2020.	To: period of 30 days
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Approved:



Stephen J. Duall
Chief, Satellite Policy Branch

2. Contact

Name:	William M. Wiltshire	Phone Number:	202-730-1350
Company:	Harris, Wiltshire & Grannis LLP	Fax Number:	202-730-1301
Street:	1919 M St. NW 8th Floor	E-Mail:	wwiltshire@hwglaw.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20036 -
Attention:		Relationship:	Legal Counsel

(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.)

3. Reference File Number SATSTA2019092400098 or Submission ID

4a. Is a fee submitted with this application?

- ☒ If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).
- ☐ Governmental Entity ☐ Noncommercial educational licensee
- ☐ Other (please explain):

4b. Fee Classification CXW – Space Station (Non-Geostationary)

5. Type Request

- ☐ Change Station Location ☒ Extend Expiration Date ☐ Other

6. Temporary Orbit Location

7. Requested Extended Expiration Date
2020-02-10 00:00:00.0

8. 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 requests extension of special temporary authority for its NGSO satellites to communicate with gateway and TT&C earth stations for an additional 30 days.

9. 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 "party to the application" for these purposes. ☒ Yes ☐ No

10. Name of Person Signing
Patricia Cooper

11. Title of Person Signing
Vice President, Satellite Government Affairs

12. Please supply any need attachments.

Attachment 1: STA Extension Reques

Attachment 2:

Attachment 3:

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

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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.

REQUEST FOR EXTENSION OF SPECIAL TEMPORARY AUTHORITY

On November 7, 2019, the Commission granted in part and deferred in part SpaceX Exploration Holdings, LLC's ("SpaceX") request for Special Temporary Authority ("STA") for its non-geostationary orbit ("NGSO") satellites launched on November 11, 2019.¹ SpaceX respectfully requests that the Commission extend that STA – including the portion initially deferred – for an additional 30 days for the reasons discussed below.

The current STA authorizes SpaceX (1) to perform telemetry, tracking, and control ("TT&C") functions necessary for orbit-raising of each of the 60 satellites launched on November 11 from the insertion altitude of 280 km to an altitude of 350 km for initial payload testing and then to raise 20 of those satellites to a previously authorized orbital plane at an altitude of 550 km; and (2) to test the communications payload on each of the 60 satellites using the 10.7-12.7 GHz, 17.8-18.6 GHz, 18.8-19.3 GHz, and 19.7-20.2 GHz (space-to-Earth) and 14.0-14.5 GHz, 27.5-29.1 GHz, and 29.5-30.0 GHz (Earth-to-space) frequency bands. The Commission deferred action on that portion of SpaceX's request to raise and operate the remaining satellites in orbital planes proposed in its then-pending modification application. That modification has since been approved, and SpaceX has renewed its request that the Commission grant authority to continue orbit raising and testing of its remaining satellites so that they can proceed to populate the newly-authorized orbital planes.²

Pursuant to the STA, SpaceX has been communicating with earth stations operated by its sister company, SpaceX Services, Inc. ("SpaceX Services") during the orbit-raising phase and early operations of its satellites. Applications for all of those earth stations are currently pending.³ SpaceX has operated with these earth stations pursuant to the STA for nearly two months, and has received no complaints from any other authorized spectrum user.

Allowing continued communications between the SpaceX space stations and SpaceX Services earth stations would serve the public interest. The STA covers TT&C functions that are essential to commanding the spacecraft and ensuring the health and safety of SpaceX's nascent constellation. This is especially important for those satellites that have been holding at an altitude of 350 km awaiting authorization to proceed to the newly-authorized orbital planes at 550 km. The STA also allows SpaceX to confirm the operational status of its satellites. Extending the STA would allow SpaceX to continue to provide TT&C functions that are essential to commanding all of these spacecraft and ensuring continuing monitoring of and control over SpaceX's nascent

¹ See Public Notice, DA 19-1178 (rel. Nov. 15, 2019). As required under the STA, SpaceX confirmed the November 11, 2019 launch and commencement of operations date for its satellites, which began the term of the STA.

² See *Space Exploration Holdings, LLC*, DA 19-1294 (rel. Dec. 19, 2019); Letter from William M. Wiltshire to Marlene H. Dortch, IBFS File No. SAT-STA-20190924-00098 (Dec. 20, 2019).

³ SpaceX Services currently has applications pending for six Ku-band gateway earth stations (located in North Bend, WA; Conrad, MT; Merrilan, WI; Greenville, PA; Redmond, WA; and Hawthorne, CA); one Ku-band TT&C earth station (located in Brewster, WA); and five Ka-band gateway earth stations (located in Conrad, MT; Loring, ME; Redmond, WA; Greenville, PA; and Merrilan, WI). See Public Notice, Rep. No. SAT-01388 (rel. May 10, 2019); IBFS File Nos. SES-LIC-20190816-01062 and -01063, SES-LIC-20190827-01110, SES-LIC-20190906-01170 and -01171.

constellation, as well as maintaining communications with these craft to assess their functionality. Accordingly, extension of the STA will continue serve the public interest by enhancing space safety and promoting the health and safety of SpaceX's NGSO constellation.

SpaceX will continue to operate on a non-interference basis. Consistent with its authorization, SpaceX 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. Nonetheless, in the extremely unlikely event that harmful interference should occur due to transmissions to or from its spacecraft, SpaceX will take all reasonable steps to eliminate the interference. Should an issue arise, SpaceX can be reached at satellite-operators-pager@spacex.com, which links to the pagers of appropriate technical personnel 24/7.

Accordingly, SpaceX requests that the Commission extend the STA for these space stations for an additional 30 days.