Approved by OMB
3060–0678

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATIONEnter a description of this application to identify it on the main menu:
30 Day STA – Helios Sirion Pathfinder–2 Commissioning

1. Applicant

Name:	Astro Digital US, Inc.	**Phone Number:**	650–919–4032
DBA Name:		**Fax Number:**	
Street:	3171 Jay Street	**E–Mail:**	Chris@astrodigital.com
City:	Santa Clara	**State:**	CA
Country:	USA	**Zipcode:**	95054 –
Attention:	Mr Chris Biddy		

FEDERAL COMMUNICATIONS COMMISSION
GRANTED
International Bureau

File # SES-STA-20190227-00188

Call Sign E170192 Grant Date 3/13/2019
(or other identifier)

Term Dates
From 3/13/2019 To: 4/12/2019

Approved: Paul E Blais

Summary of UHF band Technical Information
For Coordination with NTIA/FAS

Applicant: Astro Digital US, Inc
File No.: SES-STA-20190227-00188
Call Sign: E170192

Astro Digital is grant special temporary authority for 30 days beginning March13, 2019 operate its fixed earth station located at Santa Clara, CA. with the Australian SIRION-1 NGSO satellite in sun-synchronous orbit at 591 kilometers to provide telemetry, tracking and control (TT&C) services in the 402.88-402.92 MHz (Earth-to-space) and the 401.48-401.52 MHz (space-to-Earth) frequency bands under the following conditions.

1. All operations shall be on an unprotected and non-harmful interference basis, Astro Digital US Inc shall not cause harmful interference to, and shall not claim protection from, interference caused to it by any other lawfully operating station and it shall cease transmission(s) immediately upon notice of such interference and must inform the Commission, in writing, immediately of such an event.

2. The licensee shall, always, take all necessary measures to ensure that operation of this (these) authorized earth station(s) does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR §§ 1.1307(b) and 1.1310. Physical measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions, such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling, or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers.

3. Any action taken, or expense incurred as a result of operations pursuant to this STA is solely at Astro Digital US Inc 's risk.

4. Transmissions are limited to 40 dBW EIRP per 40 kHz.

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

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2. Contact

Name:	Tony Lin	**Phone Number:**	202–637–5795
Company:	Hogan Lovells US LLP	**Fax Number:**	
Street:	555 13th ST, NW	E–Mail:	tony.lin@hoganlovells.com
City:	Washington	**State:**	DC
Country:	USA	**Zipcode:**	20004 –
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 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 CGX – Fixed Satellite Transmit/Receive Earth Station

5. Type Request

◉ Use Prior to Grant ○ Change Station Location ○ Other

6. Requested Use Prior Date 03/01/2019	
7. CitySanta Clara	8. Latitude (dd mm ss.s h) 37 22 48.0 N

9. State CA	10. Longitude (dd mm ss.s h) 121 57 40.0 W

11. Please supply any need attachments.

Attachment 1: Legal Narrative 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.)

Astro Digital US, Inc. requests special temporary authority to communicate with the Sirion Pathfinder-2 satellite for 30 days to facilitate recovery of the satellite.

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 "party to the application" for these purposes. ◉ Yes ○ No

14. Name of Person Signing Chris Biddy	15. Title of Person Signing Chief Executive Officer

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).

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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.

Attachment 1
Astro Digital US, Inc.
Response to Question 12

Request for Special Temporary Authorization

Astro Digital US, Inc. ("Astro Digital") hereby requests from the Federal Communications Commission (the "FCC") special temporary authority ("STA") for a period of 30 days,[1] commencing on March 1, 2019 until and including March 31, 2019, to operate its Part 25 licensed UHF Earth Station in Santa Clara California (the "Astro Digital Earth Station")[2] to communicate with the Sirion Pathfinder-2 satellite (the "Satellite"), a licensed Australian Space object, and facilitate recovery of the Satellite, as explained below.[3]

The Satellite is owned by Sirion Global Pty Ltd. ("Sirion Global"), an Australia company that is owned by Helios Wire Corporation, a Canadian company, and will operate under the Australian International Telecommunication Union ("ITU") filing, SIRION-1, and the Russian Federation ITU filing, AURIGA. The Satellite was manufactured by Astro Digital and launched on a SpaceX Falcon 9 rocket to a sun-synchronous orbit with an altitude of 591 km, on December 3, 2018 as part of the SSOA mission from Vandenberg Air Force Base. The Satellite carries communications payloads in the S, C, and UHF bands, with the UHF band being used for initial telemetry and command operations.

Sirion Global planned for the initial satellite command and telemetry operations to be conducted through a licensed UHF earth station owned and operated by Kongsberg Satellite Services (KSAT) in Tromso, Norway. Astro Digital was commissioned to provided remote operations services through the Astro Digital Mission Control Center in Santa Clara with commands sent via the UHF earth station in Tromso. Shortly after the SSOA launch, the Satellite was observed to be tumbling at an abnormal rate. This tumbling has created communication issues that were amplified by unanticipated ground segment commissioning issues with the new KSAT facility, including ground system interface, compatibility issues between the Mission Control Center and the remote ground station, and local RF

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[1] *See* 47 C.F.R. § 25.120(b)(3). Astro Digital may request renewal of the STA, as necessary to facilitate recovery, but does not expect the aggregate STA term to exceed 180 days.

[2] *See* Stamp Grant, Astro Digital US, Inc., SES-AMD-20171227-01389 (granted Jul. 27, 2018). Astro Digital incorporates by reference the antenna parameters specified in its license.

[3] To the extent necessary, Astro Digital requests waiver of the Commission's rules regarding the provision of certain technical information in light of the limited use communications with the satellite. *See* 47 C.F.R. §§ 25.137 and 25.114; *see also, e.g.*, Stamp Grant, Universal Space Network, Inc., SES-STA-20181008-03145 (granted Dec. 4, 2018).

interference issues.[4] The Satellite tumble rate must be urgently reduced to avoid mission failure and total loss of the Satellite. Consistent reliable communication must be provided to bring the Satellite under control and ultimately maneuver to its proper orbit.

Accordingly, Astro Digital requests authority to communicate with the Satellite from the Astro Digital Earth Station and raise the Satellite to its proper 650 km orbit. The additional communication attempts or passes from the Astro Digital Earth Station, which will be free of local RF interference and interface issues, will facilitate recovery of the Satellite. Astro Digital believes that it will take no more than a total of 180 days to achieve this through the use of the fully operational Astro Digital Santa Clara earth station. Once these problems are resolved the Satellite's operations will be re-commandeered through the Tromso facility. Because Satellite's health is at risk, Astro Digital requests that the FCC act expeditiously.[5]

Astro Digital submits that grant of this request to facilitate recovery of a satellite from a potential mission ending and uncontrollable state serves the public interest, convenience, and necessity. Astro Digital's operation of the Satellite through the Astro Digital Earth Station should enable Astro Digital to bring the Satellite under control and place it into a safe operating condition in its proper orbit before transferring full telemetry and command functions back to KSAT's licensed earth station in Tromso, Norway.

Earth Station Frequencies:

Astro Digital seeks authority to operate on the following frequencies, consistent with the FCC's grant of its Part 25 Earth station license and its spectrum coordination with relevant federal agencies for uplink. Astro Digital understands that coordination with affected Federal operators in the downlink band has already been initiated.

Link Direction	Frequency Band	Bandwidth Occupied	Max. Data Rate
Uplink (command)	402.88-402.92 MHz	40 kHz	38.4 kbps
Downlink (telemetry)	401.48-401.52 MHz	40 kHz	38.4 kbps

Uplink output power is 40 dBW EIRP. Astro Digital understands that its authorized operations will be on an unprotected, non-harmful interference basis.

Site Address:

[4] All of these issues are being addressed expeditiously but it is unclear when they will be resolved.
[5] *See* 47 C.F.R. § 25.120(b)(3) (no public notice required for grant of STAs of 30 days or less).

3171 Jay St.
Santa Clara, CA 95054

Earth Station coordinates:

Latitude: 37° 22' 48" N
Longitude: 121° 57' 40" W