

S2862 SAT-MOD-20170317-00053 IB2017000764  
 Terra Bella Technologies Inc.  
 S2862 SkySat Constel



\*with conditions

File # SAT-MOD-20170317-00053

Call Sign S2862 Grant Date 06/28/17

(or other identifier)

Term Dates See

From 06/28/17 To: conditions

Approved: *Stephen J. Duall*

Stephen J. Duall  
 Chief, Satellite Policy Branch

Approved by OMB  
 3060-0678

Date & Time Filed: Mar 17 2017 5:39:52:390PM  
 File Number: SAT-MOD-20170317-00053

FCC APPLICATION FOR SPACE AND EARTH STATION:MOD OR AMD – MAIN FORM	FCC Use Only
FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	


APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:  
 Terra Bella Application to Modify Call Sign S2862

1-8. Legal Name of Applicant

<b>Name:</b>	Terra Bella Technologies Inc.	<b>Phone Number:</b>	720-238-5634
<b>DBA Name:</b>		<b>Fax Number:</b>	
<b>Street:</b>	1061 Terra Bella Avenue	<b>E-Mail:</b>	craig@terrabella.com
<b>City:</b>	Mountain View	<b>State:</b>	CA
<b>Country:</b>	USA	<b>Zipcode:</b>	94043 -
<b>Attention:</b>	Craig Scheffler		

**ATTACHMENT TO GRANT**  
Terra Bella Technologies Inc.  
IBFS File No. SAT-MOD-20170317-00053

<b>IBFS File No(s):</b>	SAT-MOD-20170317-00053	<p><b>GRANTED – With Conditions</b></p>  <p><b>International Bureau Satellite Division</b></p>
<b>Licensee/Grantee:</b>	Terra Bella Technologies Inc.	
<b>Call Sign:</b>	S2862	
<b>Satellite Name:</b>	SkySat-16 through SkySat-21	
<b>Orbital Location: (required station-keeping tolerance)</b>	NGSO at altitudes between 400 km and 630 km and inclinations between 97.0 and 97.9 degrees. <sup>1</sup>	
<b>Administration:</b>	United States of America	
<b>Nature of Service:</b>	Earth Exploration Satellite Service	
<b>Scope of Grant:</b>	<p>Authorization to deploy and operate up to six additional non-geostationary orbit remote-sensing satellites, SkySat16 through SkySat21, in the Earth Exploration Satellite Service from circular orbits with altitudes from 400 to 630 km, depending on the launch vehicle used, and with inclination ranging between 97 and 97.9 degrees</p> <p>Modification of authorization to permit space-to-Earth downlink of remote sensing and telemetry data in the 8025-8400 MHz band to all earth station locations approved for such transmissions under the existing coordination agreement between Terra Bella and NASA, or any successor agreement.</p>	
<b>Previous Grant(s):</b>	<p>Authority to construct, deploy and operate two satellites, SkySat-1 and SkySat-2, in high-inclination circular orbits with altitudes from 450 to 637 kilometers and with inclination ranging between 85 and 100 degrees. <i>See</i> IBFS File No. SAT-LOA-20120322-00058 (granted Sept. 20, 2012).</p> <p>Authority to construct, deploy, and operate SkySat-3 at an orbital altitude of approximately 510 by 502 km with inclination of 97.42 degrees. <i>See</i> IBFS File No. SAT-MOD-20150408-00019 (granted in part and deferred in part June 10, 2016).</p> <p>Authority to construct, deploy and operate 12 additional satellites, SkySat-4 through SkySat-15, in circular orbits with altitudes from 400 to 630 km, depending on the launch vehicle used, and with inclination ranging between 97 and 97.9 degrees. <i>See</i> IBFS File No. SAT-MOD-20150408-00019 (granted Aug. 31, 2016).</p>	
<b>Service Area(s):</b>	Global. <i>See</i> Schedule S Tech Report and Exhibit 43 at 39-74.	
<b>Frequencies:</b>	8025-8400 MHz (space-to-Earth) (remote sensing data and telemetry) 2025-2110 MHz (Earth-to-space) (command)	
<p><b>Unless otherwise specified herein, 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.</b></p> <p>1. Terra Bella must prepare the necessary information, as may be required, for submission to the International Telecommunication Union (ITU) to initiate and complete the advance publication, coordination, due diligence, and notification process for these space stations, in accordance with the ITU Radio Regulations. Terra Bella will be held responsible for all cost-recovery fees associated with ITU filings. No protection from interference caused by radio stations authorized by other administrations is guaranteed unless</p>		

<sup>1</sup> Terra Bella states that SkySat-16 through SkySat-21 are designed to operate in independent, high-inclination, circular orbits with altitudes in the range of 400 to 630 km and inclinations between 97.0 and 97.9 degrees, and are expected to operate in sun-synchronous orbits with a nominal altitude of 500 km. Exhibit 43 at 2.

**ATTACHMENT TO GRANT**  
Terra Bella Technologies Inc.  
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coordination and notification procedures are timely completed or, with respect to individual administrations, by successfully completing coordination agreements. Any radio station authorization for which coordination has not been completed may be subject to additional terms and conditions as required to effect coordination of the frequency assignments of other administrations. See 47 CFR § 25.111(b).

2. Power flux-density from operation of the SkySat-1 through SkySat-21 space stations in the 8025-8400 MHz band must not exceed the limits in No. 22.5 or Table 21-4 of the International Telecommunication Union's Radio Regulations or the limits in ITU-R Recommendation SA-1157. Terra Bella must also take into account the information in ITU-R Recommendation SA-1810.

3. Operations pursuant to this authorization must not cause harmful interference to stations operating in the 2025-2110 MHz band in accordance with the U.S. Table of Frequency Allocations. See 47 CFR § 2.106, Footnote US347.

4. Operation pursuant to this authorization must be in compliance with the terms of a Memorandum of Agreement between Terra Bella and the National Aeronautics and Space Administration pertaining to operation in the frequency band 8025-8400 MHz.

5. Transmissions of remote-sensing and telemetry data in the 8025-8400 MHz frequency band may only be made to and when within line of sight of the earth stations approved for such transmissions under the existing Memorandum of Agreement between Terra Bella and NASA, or any successor agreement.

6. Given the opportunity for additional entrants to operate in Terra Bella's requested frequency bands, we grant Terra Bella's request for a waiver of the modified processing round requirements in 47 CFR §§ 25.156 and 25.157. See *DigitalGlobe, Inc.*, Order and Authorization, 20 FCC Red 15696 (Sat. Div., Int'l Bur. 2005) at ¶ 8.

7. Because Terra Bella must comply with technical requirements in Part 2 of the Commission's rules, which should prevent harmful interference to other operators in the band, we grant its request for a waiver of the default service rules in 47 CFR § 25.217 (b). See *DigitalGlobe, Inc.*, supra, at ¶ 15.

8. This authorization will become null and void if, at any time during the license term, there are no Terra Bella satellites operating.

9. Terra Bella was subject to milestone and bond obligations imposed as conditions to a previous grant of authority to operate the SkySat-3 satellite in the 2020-2025 MHz band. See IBFS File No. SAT-MOD-20150408-00019 (granted in part and deferred in part June 10, 2016). We find that, following the discharge of the bond requirement associated with this previous grant, warehousing concerns are addressed in this situation through the imposition of condition 8 above.

10. Within 30 days after launching each satellite authorized herein, Terra Bella must file a notification with the Commission specifying the satellite's orbital altitude and inclination. The authority granted herein is subject to the existing license term for operation under S2862, which ends December 16, 2028.


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).

<b>Action Date:</b>	June 28, 2017
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**ATTACHMENT TO GRANT**  
Terra Bella Technologies Inc.  
IBFS File No. SAT-MOD-20170317-00053

<b>Term Dates</b>	<b>From:</b> June 28, 2017	<b>To:</b> see conditions
<b>Approved:</b>  Stephen J. Duall Chief, Satellite Policy Branch		

9-16. Name of Contact Representative

<b>Name:</b>	Stephanie Selmer	<b>Phone Number:</b>	202-346-1404
<b>Company:</b>	Google Inc.	<b>Fax Number:</b>	202-346-1101
<b>Street:</b>	25 Massachusetts Avenue NW Ninth Floor	<b>E-Mail:</b>	selmer@google.com
<b>City:</b>	Washington	<b>State:</b>	DC
<b>Country:</b>	USA	<b>Zipcode:</b>	20001-
<b>Attention:</b>		<b>Relationship:</b>	Legal Counsel

CLASSIFICATION OF FILING

17. Choose the button next to the classification that applies to this filing for both questions a. and b. Choose only one for 17a and only one for 17b.

- a1. Earth Station
- a2. Space Station

- (N/A) b1. Application for License of New Station
- (N/A) b2. Application for Registration of New Domestic Receive-Only Station
- b3. Amendment to a Pending Application
- b4. Modification of License or Registration
- b5. Assignment of License or Registration
- b6. Transfer of Control of License or Registration
- b7. Notification of Minor Modification
- (N/A) b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite
- (N/A) b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States
- (N/A) b10. Other (Please specify)
- (N/A) b11. Application for Earth Station to Access a Non-U.S. satellite Not Currently Authorized to Provide the Proposed Service in the Proposed Frequencies in the United States
- (N/A) b12. Application for Database Entry
- b13. Amendment to a Pending Database Entry Application
- b14. Modification of Database Entry

17c. 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):

17d.

Fee Classification CGW – Space Station Modification (Non-Geostationary)

18. If this filing is in reference to an existing station, enter:

(a) Call sign of station:  
S2862

19. If this filing is an amendment to a pending application enter both fields, if this filing is a modification please enter only the file number:

(a) Date pending application was filed:

(b) File number:

SATMOD2015040800019

TYPE OF SERVICE

<p>20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Select all that apply:</p> <p><input type="checkbox"/> a. Fixed Satellite</p> <p><input type="checkbox"/> b. Mobile Satellite</p> <p><input type="checkbox"/> c. Radiodetermination Satellite</p> <p><input checked="" type="checkbox"/> d. Earth Exploration Satellite</p> <p><input type="checkbox"/> e. Direct to Home Fixed Satellite</p> <p><input type="checkbox"/> f. Digital Audio Radio Service</p> <p><input type="checkbox"/> g. Other (please specify)</p>	
<p>21. STATUS: Choose the button next to the applicable status. Choose only one.</p> <p><input checked="" type="radio"/> Common Carrier    <input checked="" type="radio"/> Non-Common Carrier</p>	<p>22. If earth station applicant, check all that apply.</p> <p><input type="checkbox"/> Using U.S. licensed satellites</p> <p><input type="checkbox"/> Using Non-U.S. licensed satellites</p>
<p>23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:</p> <p><input checked="" type="radio"/> Connected to a Public Switched Network    <input checked="" type="radio"/> Not connected to a Public Switched Network    <input checked="" type="radio"/> N/A</p>	
<p>24. FREQUENCY BAND(S): Place an 'X' in the box(es) next to all applicable frequency band(s).</p> <p><input type="checkbox"/> a. C-Band (4/6 GHz)    <input type="checkbox"/> b. Ku-Band (12/14 GHz)</p> <p><input checked="" type="checkbox"/> c. Other (Please specify upper and lower frequencies in MHz.)</p> <p>Frequency Lower: 2025                      Frequency Upper: 8400                      (Please specify additional frequencies in an attachment)</p>	

TYPE OF STATION

25. CLASS OF STATION: Choose the button next to the class of station that applies. Choose only one.

- a. Fixed Earth Station
- b. Temporary-Fixed Earth Station
- c. 12/14 GHz VSAT Network
- d. Mobile Earth Station
- e. Geostationary Space Station
- f. Non-Geostationary Space Station
- g. Other (please specify)

26. TYPE OF EARTH STATION FACILITY:

- Transmit/Receive     Transmit-Only     Receive-Only     N/A

"For Space Station applications, select N/A."



PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.)

- a — authorization to add new emission designator and related service
- b — authorization to change emission designator and related service
- c — authorization to increase EIRP and EIRP density
- d — authorization to replace antenna
- e — authorization to add antenna
- f — authorization to relocate fixed station
- g — authorization to change frequency(ies)
- h — authorization to add frequency
- i — authorization to add Points of Communication (satellites & countries)
- j — authorization to change Points of Communication (satellites & countries)
- k — authorization for facilities for which environmental assessment and radiation hazard reporting is required
- l — authorization to change orbit location
- m — authorization to perform fleet management
- n — authorization to extend milestones
- o — Other (Please specify)

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. 1.1308 and 1.1311, as an exhibit to this application. A Radiation Hazard Study must accompany all applications for new transmitting facilities, major modifications, or major amendments.  Yes  No

ALIEN OWNERSHIP Earth station applicants not proposing to provide broadcast, common carrier, aeronautical en route or aeronautical fixed radio station services are not required to respond to Items 30-34.

29. Is the applicant a foreign government or the representative of any foreign government?	<input type="radio"/> Yes <input checked="" type="radio"/> No
30. Is the applicant an alien or the representative of an alien?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
32. Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A

33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?

Yes  No  N/A

34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit an identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote.

#### BASIC QUALIFICATIONS

35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules?  
If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.

Yes  No

36. Has the applicant or any party to this application or amendment had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explanation of circumstances.

Yes  No

37. Has the applicant, or any party to this application or amendment, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explanation of circumstances.

Yes  No

38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition? If Yes, attach as an exhibit, an explanation of circumstances

Yes  No

39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If yes, attach as an exhibit, an explanation of the circumstances.

Yes  No

40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, address, and citizenship of those stockholders owning a record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.

Exhibit 40

41. 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

42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If Yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. 25.137, as appropriate. If No, proceed to question 43.

Yes  No

42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station?

43. Description. (Summarize the nature of the application and the services to be provided). (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

Terra Bell requests modification of its authorization to operate a non-geostationary orbit Earth Exploration Satellite Service system, Call Sign S2862. See Exhibit 43 for additional information.

Exhibit 43

43a. Geographic Service Rule Certification

By selecting A, the undersigned certifies that the applicant is not subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25.

A

By selecting B, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will comply with such requirements.

B

By selecting C, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will not comply with such requirements because it is not feasible as a technical matter to do so, or that, while technically feasible, such services would require so many compromises in satellite design and operation as to make it economically unreasonable. A narrative description and technical analysis demonstrating this claim are attached.

C

CERTIFICATION

The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Choose the button next to applicable response.)

- Individual
- Unincorporated Association
- Partnership
- Corporation
- Governmental Entity
- Other (please specify)

45. Name of Person Signing  
Camie Hackson

-->

46. Title of Person Signing  
Engineering Director

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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