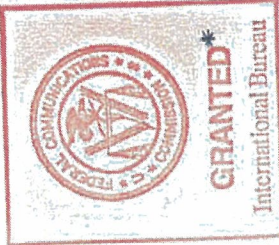


RE-ISSUED / CORRECTED ON 02/11/15
see also SAT-AMD-20150115-00004



File # SAT-LOI-20141029-00118
Call Sign S2935 Grant Date 01/22/15
(or other identifier) Term Dates
From 01/22/15 To:
Approved: Stephen J. Duall
Chief, Satellite Policy Branch

Approved by OMB
3060-0678

Date & Time Filed: Oct 29 2014 4:03:04:330PM
File Number: SAT-LOI-20141029-00118
Callsign/Satellite ID: S2935

APPLICATION FOR SATELLITE SPACE STATION AUTHORIZATIONS	
FCC 312 MAIN FORM	FCC Use Only
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APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:
PDR to access O3b satellite network (Oct 2014) - FINAL

1-8. Legal Name of Applicant	
Name: O3b Limited	Phone Number: 202-813-4026
DBA Name:	Fax Number:
Street: 900 17th Street, NW, #300	E-Mail: suzanne.malloy@o3bnetworks.com
City: Washington	State:
Country: USA	Zipcode:
Attention: Ms Suzanne Malloy	

O3b Limited
IBFS File Nos. SAT-LOI-20141029-00118 and
SAT-AMD-20150115-00004
Call Sign: S2935

The request of O3b Limited, IBFS File No. SAT-LOI-20141029-00118 (Call Sign S2935), as amended, to modify prior grants of access to the U.S. market by adding four new medium earth orbit non-geostationary orbit (NGSO) satellites, for a total of 12 satellites in an equatorial orbit, is GRANTED.¹ O3b Limited's satellites operate under the authority of the United Kingdom in the 18.8-19.3 GHz (space-to-Earth) and 28.6-29.1 GHz (Earth-to-space) frequency bands on a primary basis, the 27.6-28.35 GHz (Earth-to-space) and 28.35-28.4 GHz (Earth-to-space) frequency bands on a secondary basis, and the 17.8-18.6 GHz (space-to-Earth) frequency bands on non-conforming basis.² Communications between U.S.-licensed earth stations and O3b Limited's NGSO system must be in accordance with the terms, conditions, and technical specifications set forth in O3b Limited's application, the Federal Communication Commission's rules not waived herein, and are subject to the following conditions:

1. This grant does not include provision of any Direct-to-Home (DTH) service, Direct Broadcast Satellite Service (DBS) or Digital Audio Radio Service (DARS) to, from, or within the United States.
2. O3b Limited's operations must comply with all coordination agreements reached between the United Kingdom and other Administrations, including all coordination agreements reached between the United Kingdom and the United States (*see e.g.*, UK telefax SSU 2000 dated 29 May 2009).
3. O3b Limited must maintain an electronic web site bulletin board listing the ephemeris data for each satellite in the O3b Limited constellation, using the North American Aerospace Defense Command (NORAD) two-line orbital element format. O3b Limited must update the orbital elements at least once every three days.
4. O3b Limited's request for a waiver of the Ka-band Plan³ and the United States Table of Frequency Allocations, 47 C.F.R. § 2.106, is GRANTED. Transmissions from the O3b Limited NGSO

¹ O3b Limited's system is comprised of 12 satellites: four launched on June 25, 2013, four launched on July 10, 2014, and four launched on December 18, 2014. O3b Limited states that three of the 12 space stations will be operated as spares, with the remaining space stations evenly distributed in O3b's authorized orbital plane, a "9+3" configuration. O3b Limited, IBFS File No. SAT-LOI-20141029-00118, Attachment at 3. (*O3b Application*). On February 5, 2015, the Satellite Division determined that O3b Limited commenced operations of its four new space stations and therefore O3b Limited was not required to file a bond as set forth in Section 25.165 of the Commission's rules. *See Public Notice, Policy Branch Information, Actions Taken, Report No. SAT-01065* (Feb. 6, 2015).

² O3b Limited was previously granted authority to operate two fixed gateway earth stations and one blanket license for maritime operations with the O3b Limited's satellite system as a point of communication. *See* IBFS File Nos. SES-LIC-20100723-00952 (fixed gateway earth station in Haleiwa, Hawaii, granted Sept. 25, 2012); SES-LIC-20130124-00089 (fixed gateway earth station in Vernon, Texas, granted June 20, 2013), and IBFS File No. SES-LIC-20130528-00455 (a blanket license for maritime operations in limited frequencies, granted May 13, 2014). O3b Limited's application was placed on Public Notice. *Public Notice, Policy Branch Information Satellite Space Applications Accepted for Filing, Report No. SAT-01053* (Nov. 14, 2014). No comments were filed in response to the Notice.

³ The Commission issued a series of related Orders in CC Docket No. 92-297. *The First Report and Order* in the proceeding established an allocation plan for use of the Ka-band by non-Federal users. Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the

space stations to earth stations in the 17.8-18.6 GHz (space-to-Earth) frequency bands must be on a non-conforming basis. O3b must immediately terminate non-conforming operations upon notification of harmful interference. In addition, O3b Limited must meet the following requirements:

- (a) The power flux density (pfd) at the Earth's surface produced by emissions from O3b Limited's system for all atmospheric conditions, and for all methods of modulation in the 17.8-18.6 GHz (space-to-Earth) frequency bands must not exceed a level of -118 dBW/m²/MHz at any angle of arrival.⁴
- (b) O3b Limited's operations in the 17.8-18.6 GHz (space-to-Earth) frequency band must comply with the applicable equivalent power flux density requirements in Articles 22.5C and 22.5F of the International Telecommunication Union (ITU) Radio Regulations.

5. The pfd at the Earth's surface produced by emissions from O3b Limited's system for all atmospheric conditions, and for all methods of modulation in the 18.8-19.3 GHz (space-to-Earth) frequency bands, must not exceed a level of -118 dBW/m²/MHz at any angle of arrival.⁵

6. O3b Limited's system operations in the 27.6-28.6 GHz (Earth-to-space) frequency band must comply with the applicable equivalent power flux density requirements in Article 22.5D of the ITU Radio Regulations.

7. O3b Limited must coordinate its operations in the 17.8-19.3 GHz (space-to-Earth) frequency band with the U.S. Federal Systems, including Federal operations to earth stations in foreign countries. In addition to meeting the terms of the coordination agreement, the non-conforming O3b Limited operations in the 17.8-19.3 GHz frequency band must not cause harmful interference to, nor claim protection from, present and future Federal, non-Federal, international geostationary orbit (GSO) and NGSO systems, or any non-conforming services previously authorized on a non-harmful interference basis, and must immediately cease operations upon notification of such harmful interference resulting from its operations.

8. O3b Limited's use of the 27.6-28.35 GHz (Earth-to-space) frequency band is on a secondary basis for service and gateway links. This band is designated on a primary basis to the Local Multipoint Distribution Service (LMDS). *See Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and For Fixed Satellite Services*, Third Report and Order, FCC 97-378, 12 FCC Rcd 22310 (1997). Accordingly, O3b Limited's operations must be on an unprotected, non-harmful interference basis relative to LMDS in accordance with 47 C.F.R. § 2.105(c)(2). O3b Limited must not cause harmful interference to, nor claim protection from, authorized LMDS stations in the 28.10-28.35 GHz frequency band that are presently assigned or that may be assigned these bands in the future. Further, O3b Limited must terminate operations immediately upon notification of such interference.

29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, *First Report and Order and Fourth Notice of Proposed Rulemaking*, 11 FCC Rcd 19005 (1996) (Ka-band Report and Order), modified by *Third Report and Order*, 12 FCC Rcd 22310 (1997).

⁴ O3b Application, Attachment A at 14.

⁵ *Id.*

9. O3b Limited's operations in the 28.35-28.4 GHz (Earth-to-space) frequency band are on a secondary basis and as such must not cause harmful interference to primary users. Further, O3b Limited cannot claim protection from harmful interference caused by primary users.

10. O3b Limited's operations in the 18.8-19.3 GHz (space-to-Earth) and 28.6-29.1 GHz (Earth-to-space) frequency bands are subject to the sharing method specified in *Establishment of Policies and Service Rules for the Non-Geostationary Satellite Orbit, Fixed Satellite Service in the Ka-band*, Report and Order, IB Docket 02-19, 18 FCC Rcd 14708 (2003) and 47 C.F.R. § 25.261.

11. If O3b Limited makes changes to the orbital positions of its non-active NGSO space stations on which it is only performing TT&C, it may do so without prior Commission approval, provided:

- (a) The O3B system will continue to meet the conditions specified in this grant after the repositioning.
- (b) The repositioning will not increase risk of harmful interference to other systems not permitted by coordination agreements.
- (c) O3b will not request increased interference protection because of the repositioning.
- (d) O3b will monitor collision risk during the maneuver and take any necessary evasive measures.
- (e) Any change of orbital altitude entailed by the repositioning will not exceed 10 kilometers in extent or 30 days in duration and O3b has notified, or will notify, the operator(s) of any satellite within 20 kilometers of the interim orbit at least 10 days before commencing the repositioning maneuver.

If O3b seeks to make any changes to its constellation as specified in this grant, such as changes to the active satellites or activating a spare satellite at a location offset from the 9 equally-spaced locations, it must receive a modification of its market access grant before commencing communications with U.S.-licensed earth stations pursuant to the changes or new activation.

12. O3b Limited's request for a waiver of Sections 25.137(c) and 25.157 of the Commission's rules, 47 C.F.R. §§ 25.137(c) and 25.157, regarding modified processing round and band segmentation procedures, is GRANTED. O3b Limited will employ satellite diversity at low to medium latitudes, which will enable it to share spectrum with other NGSO FSS systems. At higher latitudes, O3b Limited will employ a band segmentation approach to accommodate other systems if interference occurs. We grant these waivers given the opportunities for additional entrants to operate in O3b Limited's requested frequency bands.

13. O3b Limited's request for a waiver of Section 25.210(i)(1) of the Commission's rules, 47 C.F.R. 25.210(i)(1), is GRANTED. Section 25.210(i)(1) requires space station antennas in the Fixed-Satellite Service to be designed to meet a cross-polarization isolation of 30 dB within the primary coverage area of the antenna. We grant this waiver with the condition that O3b Limited must accept interference to its non-compliant operations caused by space stations that comply with Section 25.210(i)(1).

14. O3b Limited's request for a waiver of Section 25.145(c) of the Commission's rules, 47 C.F.R. 25.145(c), is GRANTED. Section 25.145(c) requires Ka-band NGSO systems to provide service coverage to (i) all locations as far north at 70 degrees latitude and as far south as 55 degrees latitude for at

least 75% of every 24 hour period and (ii) on a continuous basis throughout the fifty states, Puerto Rico and the U.S. Virgin Islands. We grant this waiver because O3b Limited states that its system operates in an equatorial orbit as opposed to inclined orbit and as a result, due to look angle constraints, there is a limitation on the northernmost and southernmost latitudes that can be served by its system, providing less extensive coverage than the geographic coverage areas required in Section 25.145(c).⁶

15. This grant is based upon the finding that O3b Limited is and will be subject to direct and effective regulation by the United Kingdom concerning orbital debris mitigation. This grant will remain effective only to the extent that launch and space operations continue to be authorized by the United Kingdom Space Agency under the United Kingdom Outer Space Act.

16. We grant O3b Limited's amendment, IBFS File No. SAT-AMD-20150115-00004, to allow temporary U.S. market access using eight active satellites and four spare satellites (a "8+4" configuration). O3b Limited states that this configuration is necessary to permit two of the spare satellites to be drifted to their eventual orbital positions required for the "9+3" configuration.⁷ Accordingly, O3b Limited may access the U.S. market while operating its satellites in this temporary "8+4" configuration, subject to the conditions in this grant.

17. O3b Limited has 30 days from the date of this action to decline this grant as conditioned. Failure to respond within this period will constitute formal acceptance of this grant as conditioned.

18. This action is taken pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective immediately. Petitions for reconsideration under Section 1.106 or applications for review under Section 1.115 of the Commission's rules, 47 C.F.R. §§ 1.106, 1.115, may be filed within 30 days of the public notice indicating that this action was taken.

++ RE-ISSUED / CORRECTED ON 02/11/15 ++



+with conditions

SAT- LOT - 20141029 - 00118
File # SAT-AMD-20150115-00004

Call Sign S2935 Grant Date 01/22/15
(or other identifier)

Term Dates

From 01/22/15 To: _____

Approved: Stephen J. Duall

Stephen J. Duall
Chief, Satellite Policy Branch

⁶ O3b Application, Narrative at 15.

⁷ See O3b Limited, IBFS File No. SAT-AMD-20150115-00004, Attachment at 2, and footnote 1 *supra*.

9-16. Name of Contact Representative			
Name:	Joseph A. Godles	Phone Number:	202-429-4900
Company:	Goldberg Godles Wiener & Wright LLP	Fax Number:	202-429-4912
Street:	1229 19th Street, NW	E-Mail:	jgodles@g2w2.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20036 -2413
Attention:		Relationship:	Legal Counsel

CLASSIFICATION OF FILING

17. Choose the buttonnext to the classification that applies to thisfiling for both questions a. and b. Choose only one for 17a and only one for 17b. a. (N/A) a1. Earth Station ☒ a2. Space Station	b. ☒ b1. Application for License of New Station (N/A) b2. Application for Registration of New Domestic Receive-Only Station (N/A) b3. Amendment to a Pending Application (N/A) b4. Modification of License or Registration (N/A) b5. Assignment of License or Registration (N/A) b6. Transfer of Control of License or Registration (N/A) b7. Notification of Minor Modification (N/A) b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite ☒ b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States ☒ b10. Replacement Satellite Application - no new frequency bands ☒ b11. Replacement Satellite Application - new frequency bands (Not eligible for streamlined processing) ☒ b12. Petition for Declaratory Ruling to be Added to the Permitted List (N/A) b13. Other (Please specify)
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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): Petition for Declaratory Ruling — no fee required
17c. Fee Classification CLW – Space Station (Non-Geostationary)
18. If this filing is in reference to an existing station, enter: (a) Call sign of station: Not Applicable
19. If this filing is an amendment to a pending application enter: (a) Date pending application was filed: Not Applicable (b) File number of pending application: Not Applicable

TYPE OF SERVICE

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: ☒ a. Fixed Satellite ☐ b. Mobile Satellite ☐ c. Radiodetermination Satellite ☐ d. Earth Exploration Satellite ☐ e. Direct to Home Fixed Satellite ☐ f. Digital Audio Radio Service ☐ g. Other (please specify)	
21. STATUS: Choose the button next to the applicable status. Choose only one. ☒ Common Carrier ☐ Non-Common Carrier	22. If earth station applicant, check all that apply. Not Applicable
23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities: ☐ Connected to a Public Switched Network ☐ Not connected to a Public Switched Network ☒ N/A	
24. FREQUENCY BAND(S): Place an "X" in the box(es) next to all applicable frequency band(s). ☐ a. C-Band (4/6 GHz) ☐ b. Ku-Band (12/14 GHz) ☒ c. Other (Please specify upper and lower frequencies in MHz.) Frequency Lower: 18800 Frequency Upper: 29100 (Please specify additional frequencies in an attachment)	

TYPE OF STATION

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

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

26. TYPE OF EARTH STATION FACILITY: Not Applicable

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an "X" in the box(es) next to all that apply.) Not Applicable

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?	☐ Yes ☒ No
30. Is the applicant an alien or the representative of an alien?	☐ Yes ☐ No ☒ N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	☐ Yes ☐ No ☒ 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?	☐ Yes ☐ No ☒ 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.	Response to Q40
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? United Kingdom	

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.)

See attached narrative.

Narrative

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 Suzanne Malloy	46. Title of Person Signing Vice President, Regulatory Affairs
47. Please supply any need attachments.	
1:	2:
	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).	

Completed Schedule S

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