Approved by OMB
3060-0678

Date & Time Filed: Dec 20 2024 1:54:55:033PM
File Number: SES-LIC-INTR2024-08312
Callsign/Satellite ID:

APPLICATION FOR EARTH STATION AUTHORIZATIONS FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	FCC Use Only

APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:
Blanket Fixed Earth Stations with OneWeb System December 2024

1-8. Legal Name of Applicant

Name:	Viasat, Inc.	Phone Number:	760-476-2583
DBA Name:		Fax Number:	760-929-3941
Street:	6155 El Camino Real	E-Mail:	daryl.hunter@viasat.com
City:	Carlsbad	State:	CA
Country:	USA	Zipcode:	92009 -
Attention:	Mr Daryl T Hunter P.E.		

9-16. Name of Contact Representative

Name:	Steven C. Hemple	Phone Number:	760-476-4821
Company:	Viasat, Inc.	Fax Number:	760-929-3941
Street:	6155 El Camino Real	E-Mail:	steven.hemple@viasat.com
City:	Carlsbad	State:	CA
Country:	USA	Zipcode:	92009-
Attention:	Mr. Steven C. Hemple	Relationship:	Engineer

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.

a.
- (●) a1. Earth Station
- (N/A) a2. Space Station

b.
- (●) b1. Application for License of New Station
- ( ) 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
- (N/A) b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States
- ( ) b10. Other (Please specify)
- ( ) 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.

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

18. If this filing is in reference to an existing station, enter: (a) Call sign of station:	19. If this filing is an amendment to a pending application enter: (a) Date pending application was filed:	(b) File number of pending application:
Not Applicable	Not Applicable	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.	22. If earth station applicant, check all that apply.
○ Common Carrier ◉ Non-Common Carrier	☐ Using U.S. licensed satellites ☑ Using Non-U.S. licensed satellites

23. If applicant is providng 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: Frequency Upper:

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

(N/A) e. Geostationary Space Station
(N/A) f. Non-Geostationary Space Station

- ◉ g. Other (please specify)Blanket Licensed Earth Station

26. TYPE OF EARTH STATION FACILITY: Choose only one.
◉ Transmit/Receive ○ Transmit-Only ○ Receive-Only ○ 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.)
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 explination 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 explination 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 attemptiing 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 exhinit, 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.	
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 **Exhibit A**
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). See 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. By selecting B, the undersigned certifies that the applicant is subject to the geographic service or geographic	◉ A ○ B

coverage requirements specified in 47 C.F.R. Part 25 and will comply with such requirements.

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	46. Title of Person Signing
Steven C. Hemple	Engineer, Regulatory Affairs

47. Please supply any need attachments.

Attachment 1:	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).

SATELLITE EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B:(Technical and Operational Description)

FOR OFFICIAL USE ONLY

Location of Earth Station Site

E1: Site Identifier:	Blanket UT	E5. Call Sign:	
E2: Contact Name	Daryl T.Hunter	E6. Phone Number:	760-476-2583
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, Alaska, Hawaii, and U.S. Territories and Possessions	
E11. Latitude:	0 ° 0 ' 0.0 " N		
E12. Longitude:	0 ° 0 ' 0.0 " W		
E13. Lat/Lon Coordinates are:	○ NAD-27	◉ NAD-83	○ N/A
E14. Site Elevation (AMSL):	0.0 meters		

E15. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as	○ Yes ○ No ◉ N/A

demonstrated by the manufacturer's qualification measurement? If NO, provide asa technical analysis showing compliance with two-degree spacing policy.	
E16. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurements?	○ Yes ○ No ◉ N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	◉ Yes ○ No
E18. Is frequency coordination required? If YES, attach a frequency coordination report as	○ Yes ◉ No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	○ Yes ◉ No
E20. FAA Notification - (See 47 CFR Part 17 and 47 CFR part 25.113(c)) Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and or the FAA's study regarding the potential hazard of the structure to aviation? FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.	○ Yes ◉ No

POINTS OF COMMUNICATION

Satellite Name:ONEWEB (S2963) | ONEWEB | NGSO If you selected OTHER, please enter the following:	
E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size	E41/42. Antenna GainTransmint and/or Recieve(____dBi at _____GHz)
Blanket UT	OW10HL	999999	Intellian	OW10HL	0.45	34.2 dBi at 11.7
						35.1 dBi at 14.25
	OW11FL			OW11FL	0.386	35.4 dBi at 11.7
						34.6 dBi at 14.25
	FoldSat		Inster	FoldSat LEO	0.39	31.7 dBi at 11.7
						32.0 dBi at 14.25
	HL1100W		Hughes	HL1100W	0.43	34.19 dBi at 11.7
						35.91 dBi at 14.25
	HL1120W			HL1120W		34.19 dBi at 11.7
						35.91 dBi at 14.25

E28. Antenna Id	E33/34. Diameter Minor/Major(meters)	E35. Above Ground Level (meters)	E36. Above Sea Level (meters)	E37. Building Height Above Ground Level (meters)	E38. Total Input Power at antenna flange (Watts)	E39. Maximum Antenna Height Above Rooftop (meters)	E40. Total EIRP for al carriers (dBW)
OW10HL	0.45/0.45	0.0	0.0	0.0	1.5	0.0	36.9
OW11FL	0.386/0.386	0.0	0.0	0.0	1.5	0.0	36.4

FoldSat	0.39/0.39	0.0	0.0	0.0	2.9	0.0	36.6
HL1100W	0.325/0.429	0.0	0.0	0.0	1.23	0.0	36.8
HL1120W	0.325/0.429	0.0	0.0	0.0	1.23	0.0	36.8

FREQUENCY

E28. Antenna Id	E43/44. Frequency Bands(MHz)	E45. T/R Mode	E46. Antenna Polarization(H,V,L,R)	E47. Emission Designator	E48. Maximum EIRP per Carrier(dBW)	E49. Maximum ERIP Density per Carrier(dBW/4kHz)
OW10HL	10700 12700	R	Left and Right Circular	250MD7W	0.0	0.0
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
OW10HL	14000 14500	T	Left and Right Circular	18M0D7W	33.9	-2.7
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
OW10HL	14000 14500	T	Left and Right Circular	2M16D7W	33.9	6.6
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
OW11FL	10700 12700	R	Left and Right Circular	250MD7W	0.0	0.0
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
OW11FL	14000 14500	T	Left and Right Circular	18M0D7W	33.4	-3.1
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
OW11FL	14000 14500	T	Left and Right Circular	2M16D7W	33.4	6.1
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
FoldSat	10700 12700	R	Left and Right Circular	250MD7W	0.0	0.0
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
FoldSat	14000 14500	T	Left and Right Circular	18M0D7W	33.6	-2.9
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
FoldSat	14000 14500	T	Left and Right Circular	2M16D7W	33.6	6.3
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
HL1100W	10700 12700	R	Left and Right Circular	250MD7W	0.0	0.0
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
HL1100W	14000 14500	T	Left and Right Circular	18M0D7W	33.8	-2.7
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
HL1100W	14000 14500	T	Left and Right Circular	2M16D7W	33.8	6.5
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
HL1120W	10700 12700	R	Left and Right Circular	250MD7W	0.0	0.0
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
HL1120W	14000 14500	T	Left and Right Circular	18M0D7W	33.8	-2.7
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						
HL1120W	14000 14500	T	Left and Right Circular	2M16D7W	33.8	6.5
E50. Modulation and Services Modulation and Services QPSK, 8PSK, 16QAM						

FREQUENCY COORDINATION

E28. Antenna Id	E51. Satellite Orbit Type	E52/53. Frequency Limits(MHz)	E54/55. Range of Satellite Arc E/W Limit	E56. Earth Station Azimuth Angle Eastern Limit	E57. Antenna Elevation Angle Eastern Limit	E58. Earth Station Azimuth Angle Western Limit	E59. Antenna Elevation Angle Western Limit	E60. Maximum EIRP Density toward the Horizon(dBW/4kHz)

OW10HL	Non-Geostationary	10700 12700	0.0/ 360.0	360.0	37.0	360.0	37.0	0.0
	Non-Geostationary	14000 14500	0.0/ 360.0	360.0	37.0	360.0	37.0	-23.7
OW11FL	Non-Geostationary	10700 12700	0.0/ 360.0	360.0	37.0	360.0	37.0	0.0
	Non-Geostationary	14000 14500	0.0/ 360.0	360.0	37.0	360.0	37.0	-23.7
FoldSat	Non-Geostationary	10700 12700	0.0/ 360.0	90.0	37.0	90.0	37.0	0.0
	Non-Geostationary	14000 14500	0.0/ 360.0	90.0	37.0	90.0	37.0	-28.0
HL1100W	Non-Geostationary	10700 12700	0.0/ 360.0	90.0	37.0	90.0	37.0	0.0
	Non-Geostationary	14000 14500	0.0/ 360.0	90.0	37.0	90.0	37.0	-15.0
HL1120W	Non-Geostationary	10700 12700	0.0/ 360.0	90.0	37.0	90.0	37.0	0.0
	Non-Geostationary	14000 14500	0.0/ 360.0	90.0	37.0	90.0	37.0	-15.0

REMOTE CONTROL POINT LOCATION
REMOTE CONTROL POINT LOCATION

E61. Call Sign NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.			E65. Phone Number 720-493-7300
E62. Street Address 349 Inverness Drive South			
E63. City Englewood	E67. County Arapahoe	E64/68. State/Country CO/ USA	E66. Zip Code 80112

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 0.25 - 24 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. 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.

Attachment 1
NARRATIVE EXHIBIT
(Response to Question 43)
Ku Band NGSO Terminal

By this application, Viasat, Inc. ("Viasat") requests blanket authority to operate (i) Intellian OW10HL and OW11FL terminals, (ii) Hughes HL1120W and HL1100W terminals, and (iii) Inster FoldSat LEO terminals (collectively, the "Terminals") in accordance with technical parameters specified in the accompanying application form.[1] The Terminals are transmit/receive earth stations that would operate as fixed earth stations. The Terminals would be used to provide service in CONUS, Alaska, Hawaii, and U.S. Territories and Possessions and would communicate with the NGSO system operated by WorldVu Satellites Limited d/b/a OneWeb ("OneWeb") in portions of the Ku band—specifically the 10.7-12.7 GHz (space-to-Earth) and the 14.0-14.5 GHz (Earth-to-space) band segments.[2] Grant of the instant application would serve the public interest by enabling Viasat to augment its existing services and offer new services to customers throughout United States territory.

Compliance with Technical Rules

The 10.7-12.7 GHz and 14.0-14.5 GHz band segments are allocated to the FSS on a primary or co-primary basis, and the Commission's rules permit blanket licensing of NGSO FSS earth stations in these band segments.[3] The OneWeb NGSO system is already authorized to serve the U.S. market in these band segments subject to certain conditions,[4] and the Commission has already licensed other operators to communicate with the OneWeb NGSO system using each of the terminal models covered by this application in the Ku band under technical parameters substantially identical to those under which Viasat seeks authority to operate.[5]

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1 The information contained in this narrative and the associated Form 312 and Schedule B is based on information provided by OneWeb and the antenna manufacturer.

2 Under the Commission's rules applicants for blanket-licensed Ku band earth stations are not required to specify the number of terminals to be deployed. *See Comprehensive Review of Licensing and Operating Rules for Satellite Services*, 30 FCC Rcd 14713, ¶ 291 (2015). Viasat has entered "999,999" in response to question E29 on Form 312 Schedule B for form validation purposes only.

3 *See* 47 C.F.R. § 2.106; see also 47 C.F.R. § 25.115(f)(2).

4 *See WorldVu Satellites Limited, Petition for a Declaratory Ruling Granting Access to the U.S. Market for the OneWeb NGSO FSS System*, Order and Declaratory Ruling, 32 FCC Rcd 5366, ¶¶ 23-24 (2017) ("*OneWeb Market Access Grant*").

5 *See*, *e.g.*, WorldVu Satellites Limited, Call Sign E220121, ICFS File Nos. SES-MOD-20240410-00855 (granted Aug. 13, 2024) (Intellian terminals) and SES-MOD-20240315-00709 (granted May 23, 2024) (Hughes and Inster Terminals).

Viasat's operations with the OneWeb NGSO system using the Terminals would be consistent with the conditions of the OneWeb NGSO authorization. OneWeb has previously certified to the Commission that:

- To protect geostationary satellite operations in these bands, OneWeb satisfies all applicable Equivalent Power Flux-Density Requirements ("EPFD") obligations under Article 22 and Resolution 76 of the International Telecommunication Union's ("ITU") Radio Regulations, currently codified by reference in the Commission's rules.[6]

- OneWeb satisfies all applicable Power-Flux Density ("PFD") requirements under Article 21 of the ITU Radio Regulations and the corresponding PFD limits set forth in Section 25.208 of the Commission's rules in these band segments.[7]

- OneWeb will coordinate operation of its NGSO system with radio astronomy observatories.[8]

Viasat will work with OneWeb to ensure all operations of the Terminals would be consistent with OneWeb's certifications and the terms and conditions of the authorization for the OneWeb NGSO system.

Additionally, Viasat certifies that operations with the OneWeb NGSO system will use a contention protocol, and that such contention protocol usage will be reasonable.[9]

Point of Contact

Viasat will maintain a 24/7 point of contact in the United States with authority and ability to cease all emissions from the Terminals who can be reached at the following:

349 Inverness Drive South

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6 *See id.* at ¶ 23(b)-(e); *see also* 47 C.F.R. §§ 25.115(f)(1), 25.146(a)(2) (requiring NGSO FSS earth station applications to contain the required certification regarding EPFD compliance). OneWeb also submitted a letter to the Commission on EPFD and PFD certifications. *See* Letter from OneWeb to FCC, ICFS File No. SAT-LOI-20160428-00041 (Mar. 14, 2019) ("OneWeb EPFD/PFD Certification Letter"). Updated information regarding OneWeb NGSO System EPFD compliance can be found in WorldVu Satellites Limited, Call Sign S2963, ICFS File No. SAT-MPL-20230630-00157, Technical Appendix, Exhibit A (Jun. 30, 2023).

7 *See* OneWeb EPFD/PFD Certification Letter.

8 *See* 47 C.F.R. § 2.106, US113, US131, US211, and US342; *see also OneWeb Market Access Grant*, ¶ 24(a)-(b).

9 *See* 47 C.F.R. § 25.115(i).

Englewood, CO 80112
Tel: 720-493-7300

Radiation Hazard Analysis

A radiation hazard analysis for the Terminals is attached hereto as Exhibit A. As demonstrated in Exhibit A, the general population will not be exposed to RF levels in excess of the Commission's standard, and the Terminals do not present a risk to trained personnel in the controlled area in the immediate vicinity of the Terminals.

Exhibit A

Analysis of Non-Ionizing Radiation for Ku-band Fixed Antenna Systems

In accordance with OET Bulletin No. 65, this Radiation Hazard Report analyzes radiation exposure levels for the Intellian OW10HL and OW11FL, Hughes HL1100W and HL1200W, and the Inster FoldSat fixed terminals in seven zones for two cases—general population and occupational—at the closest point to the uncontrolled area of any testing location and measured at the lowest elevation angle of any testing location. The radiation levels calculated for the zones in Section B below are derived from the respective calculations made in Section A. The results in Section C illustrate any radiation hazard that may exist for the general public and/or occupational personnel.

I. OW10HL

A. Defined and calculated variables for OET Bulletin 65

Variables	Value	Unit	OET 65 Calculated Variables	Formula	Value	Unit
D = Aperture Diameter	0.45	Meters	λ = Wavelength	c/F	0.0210	Meters
d = Subreflector Diameter	0.45	Meters	P_I = Total Antenna Input Power	P*p	0.6[(1)]	Watts
η = Aperture Efficiency	72%	Percentage	A = Area of reflector	$\pi(D/2)^2$	0.15904	Meters^2
FCC Designation	Ku	Band	a = area of sub-reflector	$\pi(d/2)^2$	0.15904	Meters^2
F = Frequency	14250	MHz	G = Antenna Gain	$G = 4\pi\eta A/\lambda^2$	3233.1519	Linear
P = Transmitter Power Watts	0.6	Watts	Antenna Gain dB	$10\log_{10}(G)$	35.10	dBi
p = Number of Transmitters	1	#	R_{nf} = Near-Field Region	$R_{nf} = D^2/4\lambda$	2.41	Meters
R_{ua} = Closest Point to Uncontrolled Area	0.38	Meters	Transition Region	$>R_{nf}<R_{ff}$	2.41	>Meters

[1] The 0.6 watt input power reflects a 40% time varying power duty cycle of the total input power at the antenna flange 0f 1.5 watts. *See* C.F.R. § 1.1310(e)(1)(specifying averaging times for general population and occupational exposure).

R_{ua} = *Elevation angle at closest point*	37	Degrees			5.78	<Meters
			R_{ff}= Far-Field Region	$R_{ff} = 0.6D^2/\lambda$	5.78	Meters
					4.35	Meters AGL

B. Radiation Levels in Each Zone

Radiation Analysis Zone		Formula	Level	Value	Exposure Limits Met	
					General Public	Occupational
					<1mW/cm^2	<5mW/cm^2
1	Power Sub-reflector	$4P_I/a$	1.509	mW/cm^2	No	Yes
2	Antenna Surface	$4P_I/A$	1.509	mW/cm^2	No	Yes
3	Main Reflector Ground	P_I/A	0.377	mW/cm^2	Yes	Yes
4	S_{nf} = Near-Field Power Density	$4(P_I/\eta A)$	2.108	mW/cm^2	No	Yes
5	Transition Max Power Density	$S_{nf}*R_{nf}/R_{nf}$	2.108	mW/cm^2	No	Yes
6	Far-Field Max Power Density	$P_I*G/4\pi R^2$	0.463	mW/cm^2	Yes	Yes
7	Off-axis Near Field	Snf-20dB	0.02108	mW/cm^2	Yes	Yes

C. Results

Using the current OET65 methodology the Intellian OW10HL fixed user terminal passes certain occupational exposure limits as noted above. Although Zones 1 – 2 and 4 – 5 exceed the acceptable general public radiation exposure limits for the OW10HL fixed user terminals, there remains no radiation hazard concern because access to such zones are not accessible by the general public, and occupational personnel will be informed through training and instruction manuals that maintenance on the antenna must be completed with the antenna powered off, and only powered back on when the radome is replaced. Likewise, although the antenna fails the general public exposure limits and the occupational limits in Zones 4 and 5 no exposure risk exists as Viasat will limit access to such Zones through various mitigation measures, including by placing appropriate yellow signage with the signal word "CAUTION" and appropriate exposure limit information, as well as implementing positive access controls (*e.g.*, only placing the user terminal behind fencing or in other restricted areas such as rooftops) as needed based on the applicable location[2]. Moreover, the user terminal will only be installed and serviced by trained occupational personnel that are trained to turn off the equipment prior to such servicing.

[2] *See* C.F.R. § 1.1307(b)(4); *see also Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields*, Resolution of Notice of Inquiry,

Additionally, Viasat may submit an updated radiation hazard analysis based on measured data in the near future, as the current OET65 methodology is designed for parabolic antennas and not suitable for phased array antennas such as the OW10HL fixed user terminals and may produce overly conservative results.

II. Intellian OW11FL Antenna

A. Defined and calculated variables for OET Bulletin 65

Variables	Value	Unit	OET 65 Calculated Variables	Formula	Value	Unit
D = Aperture Diameter	0.386	Meters	λ = Wavelength	c/F	0.0210	Meters
d = Subreflector Diameter	0.386	Meters	P_I = Total Antenna Input Power	P*p	1.5	Watts
η = Aperture Efficiency	87%	Percentage	A = Area of reflector	$\pi(D/2)^2$	0.11702	$Meters^2$
FCC Designation	Ku	Band	a = area of sub-reflector	$\pi(d/2)^2$	0.11702	$Meters^2$
F = Frequency	14250	MHz	G = Antenna Gain	$G = 4\pi\eta A/\lambda^2$	2890.559	Linear
P = Transmitter Power Watts	1.5	Watts	Antenna Gain dB	$10\log_{10}(G)$	34.61	dBi
p = Number of Transmitters	1	#	R_{nf} = Near-Field Region	$R_{nf} = D^2/4\lambda$	1.77	Meters
R_{ua} = Closest Point to Uncontrolled Area	0.38	Meters	Transition Region	$>R_{nf}<R_{ff}$	1.77	>Meters
R_{ua} = Elevation angle at closest point	37	Degrees			4.25	<Meters
			R_{ff} = Far-Field Region	$R_{ff} = 0.6D^2/\lambda$	4.25	Meters
					3.2	Meters AGL

Second Report and Order, Notice of Proposed Rulemaking, and Memorandum Opinion Order, FCC 19-126(Dec. 4, 2019).

B. Radiation Levels in Each Zone

Radiation Analysis Zone		Formula	Level	Value	Exposure Limits Met	
					General Public	Occupational
					<1mW/cm^2	<5mW/cm^2
1	Power Sub-reflector	$4P_I/a$	5.127	mW/cm^2	No	No
2	Antenna Surface	$4P_I/A$	5.127	mW/cm^2	No	No
3	Main Reflector Ground	P_I/A	1.282	mW/cm^2	No	Yes
4	S_{nf} = Near-Field Power Density	$4(P_I/\eta A)$	5.893	mW/cm^2	No	No
5	Transition Max Power Density	$S_{nf}*R_{nf}/R_{nf}$	5.893	mW/cm^2	No	No
6	Far-Field Max Power Density	$P_I*G/4\pi R^2$	1.911	mW/cm^2	No	Yes
7	Off-axis Near Field	Snf-20dB	0.05893	mW/cm^2	Yes	Yes

C. Results

Using the current OET65 methodology the Intellian OW11FL fixed user terminal passes certain occupational exposure limits as noted above. Although Zones 1 – 6 exceed the acceptable general public radiation exposure limits and Zones 1 – 2 and 4 – 5 exceed the occupational limits for the OW11FL fixed terminal, there remains no radiation hazard concern because access to such zones are not accessible by the general public, and occupational personnel will be informed through training and instruction manuals that maintenance on the antenna must be completed with the antenna powered off, and only powered back on when the radome is replaced. Likewise, although the antenna fails the general public exposure limits in Zones 1 – 6 and the occupational limits in Zones 4 and 5 no exposure risk exists as Viasat will limit access to such Zones through various mitigation measures, including by placing appropriate yellow signage with the signal word "CAUTION" and appropriate exposure limit information, as well as implementing positive access controls (*e.g.*, only placing the user terminal behind fencing or in other restricted areas such as rooftops) as needed based on the applicable location[3]. Moreover, the user terminal will only be installed and serviced by trained occupational personnel that are trained to turn off the equipment prior to such servicing.

Additionally, Viasat may submit an updated radiation hazard analysis based on measured data in the near future, as the current OET65 methodology is designed for parabolic antennas and not suitable for phased array antennas such as the OW11FL fixed user terminal and may produce overly conservative results.

[3] *See id*.

III. Inster FoldSat Antenna

A. Defined and calculated variables for OET Bulletin 65

Variables	Value	Unit	OET 65 Calculated Variables	Formula	Value	Unit
D = Aperture Diameter	0.35	Meters	λ = Wavelength	c/F	0.0210	Meters
d = Subreflector Diameter	0.35	Meters	P_I = Total Antenna Input Power	P*p	2.9	Watts
η = Aperture Efficiency	58%	Percentage	A = Area of reflector	$\pi(D/2)^2$	0.09621	$Meters^2$
FCC Designation	Ku	Band	a = area of sub-reflector	$\pi(d/2)^2$	0.09621	$Meters^2$
F = Frequency	14250	MHz	G = Antenna Gain	$G = 4\pi\eta A/\lambda^2$	1584.354	Linear
P = Transmitter Power Watts	2.9	Watts	Antenna Gain dB	$10\log_{10}(G)$	32.00	dBi
p = Number of Transmitters	1	#	R_{nf} = Near-Field Region	$R_{nf} = D^2/4\lambda$	1.46	Meters
R_{ua} = Closest Point to Uncontrolled Area	0.38	Meters	Transition Region	$>R_{nf}<R_{ff}$	1.46	>Meters
R_{ua} = Elevation angle at closest point	37	Degrees			3.49	<Meters
			R_{ff}= Far-Field Region	$R_{ff} = 0.6D^2/\lambda$	3.49	Meters
					2.63	Meters AGL

B. Radiation Levels in Each Zone

Radiation Analysis Zone		Formula	Level	Value	Exposure Limits Met	
					General Public	Occupational
					<1mW/cm²	<5mW/cm²
1	Power Sub-reflector	$4P_I/a$	12.057	mW/cm^2	No	No
2	Antenna Surface	$4P_I/A$	12.057	mW/cm^2	No	No
3	Main Reflector Ground	P_I/A	3.014	mW/cm^2	No	Yes

4	S_{nf} = Near-Field Power Density	$4(P_I/\eta A)$	20.788	mW/cm^2	No	No
5	Transition Max Power Density	$S_{nf}*R_{nf}/R_{nf}$	20.788	mW/cm^2	No	No
6	Far-Field Max Power Density	$P_I*G/4\pi R^2$	2.996	mW/cm^2	No	Yes
7	Off-axis Near Field	Snf-20dB	0.20788	mW/cm^2	Yes	Yes

C. Results

Using the current OET65 methodology the Inster FoldSat fixed user terminal passes certain occupational exposure limits as noted above. Although Zones 1 – 6 exceed the acceptable general public radiation exposure limits and Zones 1 – 2 and 4 – 5 exceed the occupational limits for the Inster FoldSat fixed user terminal, there remains no radiation hazard concern because access to such zones are not accessible by the general public, and occupational personnel will be informed through training and instruction manuals that maintenance on the antenna must be completed with the antenna powered off, and only powered back on when the radome is replaced. Likewise, although the antenna fails the general public exposure limits in Zones 1 – 6 and the occupational limits in Zones 4 and 5 no exposure risk exists as Viasat will limit access to such Zones through various mitigation measures, including by placing appropriate yellow signage with the signal word "CAUTION" and appropriate exposure limit information, as well as implementing positive access controls (*e.g.*, only placing the user terminal behind fencing or in other restricted areas such as rooftops) as needed based on the applicable location[4]. Moreover, the user terminal will only be installed and serviced by trained occupational personnel that are trained to turn off the equipment prior to such servicing.

Additionally, Viasat may submit an updated radiation hazard analysis based on measured data in the near future, as the current OET65 methodology is designed for parabolic antennas and not suitable for phased array antennas such as the Inster FoldSat fixed user terminal and may produce overly conservative results.

IV. Hughes HL1100W Antenna

A. Defined and calculated variables for OET Bulletin 65

Variables	Value	Unit	OET 65 Calculated Variables	Formula	Value	Unit
D = Aperture Diameter	0.43	Meters	λ = Wavelength	c/F	0.0210	Meters
d = Subreflector Diameter	0.43	Meters	P_I = Total Antenna Input Power	P*p	0.49	Watts

[4] *See id.*

η = *Aperture Efficiency*	95%	Percentage	A = Area of reflector	$\pi(D/2)^2$	0.14522	Meters^2
FCC Designation	Ku	Band	a = area of sub-reflector	$\pi(d/2)^2$	0. 14522	Meters^2
F = Frequency	14250	MHz	G = Antenna Gain	$G = 4\pi\eta A/\lambda^2$	3896.339	Linear
P = Transmitter Power Watts	0.49	Watts	Antenna Gain dB	$10\log_{10}(G)$	35.91	dBi
p = Number of Transmitters	1	#	R_{nf} = Near-Field Region	$R_{nf} = D^2/4\lambda$	2.20	Meters
R_{ua} = *Closest Point to Uncontrolled Area*	0.38	Meters	Transition Region	$>R_{nf}<R_{ff}$	2.20	>Meters
R_{ua} = *Elevation angle at closest point*	37	Degrees			5.27	<Meters
			R_{ff}= Far-Field Region	$R_{ff} = 0.6D^2/\lambda$	5.27	Meters
					3.97	Meters AGL

B. Radiation Levels in Each Zone

Radiation Analysis Zone		Formula	Level	Value	Exposure Limits Met	
					General Public	Occupational
					<1mW/cm^2	<5mW/cm^2
1	Power Sub-reflector	$4P_I/a$	1.3552	mW/cm^2	No	Yes
2	Antenna Surface	$4P_I/A$	1.3552	mW/cm^2	No	Yes
3	Main Reflector Ground	P_I/A	0.3388	mW/cm^2	Yes	Yes
4	S_{nf} = Near-Field Power Density	$4(P_I/\eta A)$	1.4341	mW/cm^2	No	Yes
5	Transition Max Power Density	$S_{nf}*R_{nf}/R_{nf}$	1.4341	mW/cm^2	No	Yes
6	Far-Field Max Power Density	$P_I*G/4\pi R^2$	0.5486	mW/cm^2	Yes	Yes
7	Off-axis Near Field	Snf-20dB	0.01434	mW/cm^2	Yes	Yes

C. Results

Using the current OET65 methodology the Hughes HL1100W fixed user terminal passes certain occupational exposure limits as noted above. Although Zones 1 – 2 and 4 – 5 exceed the acceptable general public radiation exposure limits for the Hughes HL1100W fixed user terminal, there remains no radiation hazard concern because access to such zones are not accessible by the general public, and occupational personnel will be informed through training and instruction manuals that maintenance on the antenna must be completed with the antenna powered off, and only powered back on when the radome is replaced. Likewise, although the antenna fails the general public exposure limits in Zones 1 – 2 and 4 – 5 no exposure risk exists as Viasat will limit access to such Zones through various mitigation measures, including by placing appropriate yellow signage with the signal word "CAUTION" and appropriate exposure limit information, as well as implementing positive access controls (*e.g.*, only placing the user terminal behind fencing or in other restricted areas such as rooftops) as needed based on the applicable location[5]. Moreover, the user terminal will only be installed and serviced by trained occupational personnel that are trained to turn off the equipment prior to such servicing.

Additionally, Viasat may submit an updated radiation hazard analysis based on measured data in the near future, as the current OET65 methodology is designed for parabolic antennas and not suitable for phased array antennas such as the Hughes HL1100W fixed user terminal and may produce overly conservative results.

V. Hughes HL1200W Antenna

A. Defined and calculated variables for OET Bulletin 65

Variables	Value	Unit	OET 65 Calculated Variables	Formula	Value	Unit
D = Aperture Diameter	0.43	Meters	λ = Wavelength	c/F	0.0210	Meters
d = Subreflector Diameter	0.43	Meters	P_I = Total Antenna Input Power	P*p	1.23	Watts
η = *Aperture Efficiency*	95%	Percentage	A = Area of reflector	$\pi(D/2)^2$	0.14522	$Meters^2$
FCC Designation	Ku	Band	a = area of sub-reflector	$\pi(d/2)^2$	0. 14522	$Meters^2$
F = Frequency	14250	MHz	G = Antenna Gain	$G = 4\pi\eta A/\lambda^2$	3896.339	Linear
P = Transmitter Power Watts	1.23	Watts	Antenna Gain dB	$10\log_{10}(G)$	35.91	dBi

[5] *See id.*

p = Number of Transmitters	1	#	R_{nf} = Near-Field Region	$R_{nf} = D^2/4\lambda$	2.20	Meters
R_{ua} = *Closest Point to Uncontrolled Area*	0.38	Meters	Transition Region	$>R_{nf}<R_{ff}$	2.20	>Meters
R_{ua} = *Elevation angle at closest point*	37	Degrees			5.27	<Meters
			R_{ff}= Far-Field Region	$R_{ff} = 0.6D^2/\lambda$	5.27	Meters
					3.97	Meters AGL

B. Radiation Levels in Each Zone

Radiation Analysis Zone		Formula	Level	Value	Exposure Limits Met	
					General Public	Occupational
					<1mW/cm²	<5mW/cm²
1	Power Sub-reflector	$4P_I/a$	3.388	mW/cm²	No	Yes
2	Antenna Surface	$4P_I/A$	3.388	mW/cm²	No	Yes
3	Main Reflector Ground	P_I/A	0.847	mW/cm²	Yes	Yes
4	S_{nf} = Near-Field Power Density	$4(P_I/\eta A)$	3.585	mW/cm²	No	Yes
5	Transition Max Power Density	$S_{nf}*R_{nf}/R_{nf}$	3.585	mW/cm²	No	Yes
6	Far-Field Max Power Density	$P_I*G/4\pi R^2$	1.371	mW/cm²	No	Yes
7	Off-axis Near Field	Snf-20dB	0.03585	mW/cm²	Yes	Yes

C. Results

Using the current OET65 methodology the Hughes HL1200W fixed user terminal passes certain occupational exposure limits as noted above. Although Zones 1 – 2 and 4 – 6 exceed the acceptable general public radiation exposure limits for the Hughes HL1200W fixed user terminal, there remains no radiation hazard concern because access to such zones are not accessible by the general public, and occupational personnel will be informed through training and instruction manuals that maintenance on the antenna must be completed with the antenna powered off, and only powered back on when the radome is replaced. Likewise, although the antenna fails the general public exposure limits in Zones 1 – 2 and 4 – 6 no exposure risk exists as Viasat will limit access to such Zones through various mitigation measures, including by placing appropriate yellow signage with the signal word "CAUTION" and appropriate exposure

limit information, as well as implementing positive access controls (*e.g.*, only placing the user terminal behind fencing or in other restricted areas such as rooftops) as needed based on the applicable location[6]. Moreover, the user terminal will only be installed and serviced by trained occupational personnel that are trained to turn off the equipment prior to such servicing.

Additionally, Viasat may submit an updated radiation hazard analysis based on measured data in the near future, as the current OET65 methodology is designed for parabolic antennas and not suitable for phased array antennas such as the Hughes HL1200W fixed user terminal and may produce overly conservative results.

[6] *See id*.