



UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION

RADIO STATION AUTHORIZATION

Name: ViaSat, Inc.
Authorization Type: License
 Non Common Carrier

Call Sign: E120075
File Number: SES-LIC-20120427-00404

Grant date: 07/17/2013 **Expiration Date:** 07/17/2028

Nature of Service: Other
Class of Station: Other

A) Site Location(s)

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	Special Provisions NAD (Refer to Section H)
1)	1	4000 terminals (Network Ops Cen. Tel. (720) 554-7575) Greenwood Village, USA, CO Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.			0	NA

Subject to the provisions of the Communications Act of 1934, The Communications Satellite Act of 1962, subsequent acts and treaties, and all present and future regulations made by this Commission, and further subject to the conditions and requirements set forth in this license, the grantee is authorized to construct, use and operate the radio facilities described below for radio communications for the term beginning July 17, 2013 (3 AM Eastern Standard Time) and ending July 17, 2028 (3 AM Eastern Standard Time). The required date of completion of construction and commencement of operation is July 17, 2014 (3 AM Eastern Standard Time). Grantee must file with the Commission a certification upon completion of construction and commencement of operation.

B) Particulars of Operations

The General Provision 1010 applies to all receiving frequency bands.
 The General Provision 1900 applies to all transmitting frequency bands.
 For the text of these provisions, refer to Section H.

#	Frequency (MHz)	Polarization Code	Emission	Tx/Rx Mode	Max EIRP /Carrier (dBW)	Max EIRP Density /Carrier (dBW/4kHz)	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
1)	29500.0000-30000.0000	L,R	10M0G7D	Tx	43.50	9.50	1	10 MBd	PSK, Digital Carrier
2)	29500.0000-30000.0000	L,R	20M0G7D	Tx	43.50	6.50	1	20 MBd	PSK, Digital Carrier
3)	29500.0000-30000.0000	L,R	2M50G7D	Tx	43.50	15.50	1	2.5 MBd	PSK, Digital Carrier
4)	29500.0000-30000.0000	L,R	5M00G7D	Tx	43.50	12.50	1	5.0 MBd	PSK, Digital Carrier
5)	29500.0000-30000.0000	L,R	625KG7D	Tx	42.40	20.50	1	625 kBd	PSK, Digital Carrier
6)	29500.0000-30000.0000	L,R	1M25G7D	Tx	43.50	18.60	1	1250 kBd	PSK, Digital Carrier
7)	28350.0000-29100.0000	L,R	20M0G7D	Tx	43.50	6.50	1	20 MBd	PSK, Digital Carrier



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8)	28350.0000-29100.0000	L,R	10M0G7D	Tx	43.50	9.50	1		10.0 MBd PSK, Digital Carrier
9)	28350.0000-29100.0000	L,R	2M50G7D	Tx	43.50	15.50	1		2.5 MBd PSK, Digital Carrier
10)	28350.0000-29100.0000	L,R	5M00G7D	Tx	43.50	12.50	1		5.0 MBd PSK, Digital Carrier
11)	28350.0000-29100.0000	L,R	1M25G7D	Tx	43.50	18.60	1		1250 kBd PSK, Digital Carrier
12)	28350.0000-29100.0000	L,R	625KG7D	Tx	42.40	20.50	1		625 kBd PSK, Digital Carrier (Used under faded conditions only)
13)	19700.0000-20200.0000	L,R	52M1G7D	Rx			1		52 MBd PSK, Digital Carrier
14)	19700.0000-20200.0000	L,R	416MG7D	Rx			1		416 MBd PSK, Digital Carrier
15)	18300.0000-19300.0000	L,R	52M1G7D	Rx			1		52 MBd PSK, Digital Carrier
16)	18300.0000-19300.0000	L,R	416MG7D	Rx			1		416 MBd PSK, Digital Carrier

C) Frequency Coordination Limits

#	Frequency Limits (MHz)	Satellite Arc (Deg. Long.)		Elevation (Degrees)		Azimuth (Degrees)		Max EIRP Density toward Horizon (dBW/4kHz)	Associated Antenna(s)
		East Limit	West Limit	East Limit	West Limit	East Limit	West Limit		
1)	28350.0000-29100.0000	111.1W	-115.1W	19.5	-30.5	235.5	-108.0	-4.5	1
2)	29500.0000-30000.0000	111.1W	-115.1W	30.5	-19.5	108.0	-235.5	-4.5	1

D) Points of Communications

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

- 1) 1 to VIASAT-1 (S2747) @ 115.1° W.L. (U.S.-licensed)
- 2) 1 to WildBlue-1 (S2355) @ 111.1° W.L. (Canada-licensed)
- 3) 1 to ANIK-F2 (S2742) @ 111.1° W.L. (Canada-licensed)



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E) Antenna Facilities

Site ID	Antenna ID	Units	Diameter (meters)	Manufacturer	Model number	Site Elevation (Meters)	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
1	1	4000	0.1217	ViaSat, Inc.	RA40750	0	0 AGL/ 0 AMSL	
Max Gains(s):		37.5 dBi @	30.0000 GHz	37.0 dBi @	28.3500 GHz	34.0 dBi @		
		20.2000 GHz	33.3 dBi @	18.3000 GHz				
Maximum total input power at antenna flange (Watts) =					4.00			
Maximum aggregate output EIRP for all carriers (dBW) =					43.50			

F) Remote Control Point:

1	5970 South Greenwood Plaza Blv, Suite 300 Greenwood Village, Arapahoe, CO 80111 720-554-7575	Call Sign:
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G) Antenna Structure marking and lighting requirements:

None unless otherwise specified under Special and General Provisions

H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 1010 --- Applicable to all receiving frequency bands. Emission designator indicates the maximum bandwidth of received signal at associated station(s). Maximum EIRP and maximum EIRP density are not applicable to receive operations.
- 1900 --- Applicable to all transmitting frequency bands. Authority is granted to transmit any number of RF carriers with the specified parameters on any discrete frequencies within associated band in accordance with the other terms and conditions of this authorization, subject to any additional limitations that may be required to avoid unacceptable levels of inter-satellite interference.
- 2010 --- This authorization is issued pursuant to the Commission's Second Report and Order adopted June 16, 1972 (35 FCC 2d 844) and Memorandum, Opinion and Order adopted December 21, 1972 (38 FCC 2d 665) in Docket No. 16495 and is subject to the policies adopted in that proceeding.
- 2916 --- Transmitter(s) must be turned off during antenna maintenance to ensure compliance with the FCC-specified safety guidelines for human exposure to radiofrequency radiation in the region between the antenna feed and the reflector. Appropriate measures must also be taken to restrict access to other regions in which the earth station's power flux density levels exceed the specified guidelines.
- 3219 --- All existing transmitting facilities, operations and devices regulated by the Commission must be in compliance with the Commission's radiofrequency (RF) exposure guidelines, pursuant to Section 1.1307(b)(1) through (b)(3) of the Commission's rules, or if not in compliance, file an Environmental Assessment (EA) as specified in Section 1.1311. See 47 CFR § 1.1307 (b) (5).



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H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 90052 --- When the aircraft earth station network is put into operation, the licensee must file with the Commission a certification including the following information: name of the licensee, file number of the application, call sign of the antenna, date of the license and certification that the network was put into operation and will remain operational during the license period unless the license is submitted for cancellation.
- 90053 --- The licensee shall take all necessary measures to ensure that the antenna 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 wherever such exposures might occur. 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. 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. The licensee shall ensure installation of terminals on aircraft by qualified installers who have an understanding of the antenna's radiation environment and the measures best suited to maximize protection of the general public and persons operating the aircraft and equipment. A terminal exhibiting radiation exposure levels exceeding 1.0 mW/cm² in accessible areas, such as at the exterior surface of the radome, shall have a label attached to the surface of the terminal warning about the radiation hazard and shall include thereon a diagram showing the regions around the terminal where the radiation levels could exceed 1.0 mW/cm².
- 90054 --- Operations authorized pursuant to this license are operations by U.S.-registered aircraft anywhere within the coverage area/frequency bands identified in the application for the satellites listed as points of communication. Operations authorized pursuant to this license also include operations by non-U.S.-registered aircraft within U.S. territory, including territorial waters.
- 90064 --- Aircraft earth stations authorized herein must employ a tracking algorithm that is resistant to capturing and tracking adjacent satellite signals, and each station must be capable of inhibiting its own transmission in the event it detects unintended satellite tracking.
- 90065 --- Aircraft earth stations authorized herein must be monitored and controlled by a ground-based network control and monitoring center. Such stations must be able to receive "enable transmission" and "disable transmission" commands from the network control center and must cease transmission immediately after receiving a "parameter change" command until receiving an "enable transmission" command from the network control center. The network control center must monitor operation of each aircraft earth station to determine if it is malfunctioning, and each aircraft earth station must self-monitor and automatically cease transmission on detecting an operational fault that could cause harmful interference to a fixed-satellite service network.
- 90066 --- Stations authorized herein must not be used to provide air traffic control communications.
- 90067 --- Operation in the territory or airspace of any country other than the United States must be in compliance with the applicable laws, regulations, and licensing procedures of that country, as well as with the conditions of this authorization.
- 90075 --- Licensee is afforded 30 days from the date of release of this grant and authorization to decline this authorization as conditioned. Failure to respond within this period will constitute formal acceptance of the authorization as conditioned.



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A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 90079 --- Antenna elevation for all operations must be at least 5 degrees above the geographic horizon while the aircraft is on the ground.
- 90081 --- All operations shall be on a non-common carrier basis.
- 90090 --- The aircraft earth stations are authorized, on a non-protected and non-harmful interference basis, to transmit to the following geostationary-orbit space stations: VIASAT-1 (Call Sign: S2747) at 115.1° W.L. using the 28.35-29.1 GHz and 29.5-30.0 GHz frequency bands; WildBlue-1 (Call Sign S2355) at 111.1° W.L. using the 29.5-30.0 GHz frequency band; and ANIK-F2 (Call Sign: S2472) at 111.1° W.L. using the 29.5-30.0 GHz frequency band. The aircraft earth stations authorized herein must immediately terminate operations upon notification that such operation is causing harmful interference to any other radio system lawfully operating in the 28.35-29.1 GHz and 29.5-30.0 GHz frequency bands. The aircraft earth stations authorized herein cannot claim protection from harmful interference from any radio system lawfully operating in the 28.35-29.1 GHz and 29.5-30.0 GHz frequency bands.
- 90091 --- The aircraft earth stations are authorized, on a non-protected and non-harmful interference basis, to receive downlink transmissions from the following geostationary-orbit space stations: VIASAT-1 (Call Sign S2747) at 115.1° W.L. in the 18.3-19.3 GHz and 19.7-20.2 GHz frequency bands; WildBlue-1 (Call Sign S2355) at 111.1° W.L. in the 19.7-20.2 GHz frequency band; and ANIK-F2 (Call Sign S2742) at 111.1° W.L. in the 19.7-20.2 GHz frequency band. The aircraft earth station operations authorized herein must accept interference from any radio system lawfully operating in the 18.3-19.3 GHz and 19.7-20.2 GHz frequency bands.
- 90092 --- Operations pursuant to this authorization must be in compliance with the terms of the coordination agreements with operators of Ka-band geostationary space stations within thirty angular degrees of the target satellites (VIASAT-1, WildBlue-1, and ANIK-F2). In the event another GSO space station commences operation in the 28.35-29.1 GHz and 29.5-30.0 GHz frequency bands at a location within thirty degrees of any of the target satellites, aircraft earth stations operating pursuant to this authorization must cease transmitting to the target satellite(s) unless and until such operation has been coordinated with the new space station's operator or ViaSat Inc. demonstrates that such operation will not cause harmful interference to the new co-frequency space station.
- 90093 --- Communications between ViaSat Inc.'s aircraft earth stations and WildBlue-1 and ANIK-F2 must be in compliance with all existing and future space station coordination agreements reached between Canada and other Administrations.
- 90094 --- The licensee must maintain a U.S. point of contact available 24 hours per day, seven days per week, with the authority and ability to terminate operations authorized herein.
- 90095 --- The licensee shall comply with any pertinent limits established by the International Telecommunication Union to protect other services allocated internationally.



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A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

90096 --- When operating in airspace within line-of-sight of the territory of a foreign administration where Fixed Service networks have an allocation in the 28.35- 29.1 GHz or 29.5-30.0 GHz frequency bands, the aircraft earth stations must not exceed the following EIRP limits:

+64 dBW in any 1 MHz band for Theta is less than or equal to 0°

+64 + 3*Theta dBW in any 1 MHz band for Theta is greater than 0° but less than or equal to 5°

where Theta is the angle of elevation of the horizon viewed from the center of radiation of the antenna of the earth station and measured in degrees as positive above the horizontal plane and negative below it.

90097 --- Aircraft earth stations authorized herein must cease transmissions when the antenna-to-GSO skew angle exceeds 60° and the off-axis EIRP spectral density emissions risk harmful interference to a GSO space station. The aircraft earth stations may resume transmissions once the risk of harmful interference has passed.

90098 --- ViaSat Inc. is granted a waiver of the Table of Frequency Allocations, Section 2.106 of the Commission's rules, and a waiver of the Ka-band Band Plan, 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 Services and for Fixed Satellite Services, First Report and Order and Fourth Notice of Proposed Rulemaking, 11 FCC Rcd 19005 (1996). ViaSat Inc. is authorized to operate in the 18.3-19.3 GHz, 19.7-20.2 GHz, 28.35-29.1 GHz, and 29.5-30.0 GHz frequency bands on a non-harmful interference basis. ViaSat Inc. must not cause harmful interference to any authorized radio station operating in conformance with the U.S. Table of Frequency Allocations.

90099 --- Operation of aircraft earth stations authorized herein are subject to any requirements the Commission may adopt in any future proceeding concerning operations in the 18.3-19.3 GHz, 19.7-20.2 GHz, 28.35-29.1 GHz, and 29.5-30.0 GHz band frequencies including, but not limited to, aircraft earth stations communicating with geostationary orbit space stations.

90100 --- Aircraft earth stations authorized herein must be in compliance with the terms of coordination agreements with operators of non-geostationary orbit Fixed Satellite Service space stations operating in the 18.8-19.3 and 28.6-29.1 GHz frequency band. In the event another NGSO FSS system commences operation in the 18.8-19.3 and 28.6-29.1 GHz frequency bands, aircraft earth stations operating pursuant to this authorization must cease operation unless and until such operation has been coordinated with the new NGSO system operator or ViaSat Inc. demonstrates that such operation will not cause harmful interference to the new NGSO system

90101 --- In the 17.8-20.2 GHz frequency range, in order to protect Federal satellite services, the licensee shall communicate only with satellites whose operator has completed an agreement with Federal operators pursuant to footnote US334 of the U.S. Table of Frequency Allocations, 47 C.F.R. § 2.106, and that agreement has been approved by both the Federal Communications Commission and the National Telecommunications and Information Administration. The licensee's operations pursuant to this authorization shall be consistent with such US334 agreements.

90102 --- The licensee must maintain records of the following data for each operating aircraft earth station: location (latitude, longitude, altitude); aircraft attitude (pitch, yaw, roll); transmit frequency and occupied bandwidth; data rate; EIRP; and target satellite. This data must be recorded at intervals of no more than one minute while an aircraft earth station is transmitting and every 30 seconds when aircraft roll angle is greater than 10 degrees. The licensee must also record instances when aircraft earth station pointing error exceeds 0.2 degrees. The licensee must make this data available upon request to a fixed-satellite service system operator or the Commission within 24 hours after receiving the request.



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B) This RADIO STATION AUTHORIZATION is granted subject to the additional conditions specified below:

This authorization is issued on the grantee's representation that the statements contained in the application are true and that the undertakings described will be carried out in good faith.

This authorization shall not be construed in any manner as a finding by the Commission on the question of marking or lighting of the antenna system should future conditions require. The grantee expressly agrees to install such marking or lighting as the Commission may require under the provisions of Section 303(q) of the Communications Act. 47 U.S.C. § 303(q).

Neither this authorization nor the right granted by this authorization shall be assigned or otherwise transferred to any person, firm, company or corporation without the written consent of the Commission. This authorization is subject to the right of use or control by the government of the United States conferred by Section 706 of the Communications Act. 47 U.S.C. § 706. Operation of this station is governed by Part 25 of the Commission's Rules. 47 C.F.R. Part 25.

This authorization shall not vest in the licensee any right to operate this station nor any right in the use of the designated frequencies beyond the term of this license, nor in any other manner than authorized herein.

This authorization is issued on the grantee's representation that the station is in compliance with environmental requirements set forth in Section 1.1307 of the Commission's Rules. 47 C.F.R. § 1.1307.

This authorization is issued on the grantee's representation that the station is in compliance with the Federal Aviation Administration (FAA) requirements as set forth in Section 17.4 of the Commission's Rules. 47 C.F.R. § 17.4.

The following condition applies when this authorization permits construction of or modifies the construction permit of a radio station.

This authorization shall be automatically forfeited if the station is not ready for operation by the required date of completion of construction unless an application for modification of authorization to request additional time to complete construction is filed by that date, together with a showing that failure to complete construction by the required date was due to factors not under control of the grantee.

Licensees are required to pay annual regulatory fees related to this authorization. The requirement to collect annual regulatory fees from regulatees is contained in Public Law 103-66, "The Omnibus Budget Reconciliation Act of 1993." These regulatory fees, which are likely to change each fiscal year, are used to offset costs associated with the Commission's enforcement, public service, international and policy and rulemaking activities. The Commission issues a Report and Order each year, setting the new regulatory fee rates. Receive only earth stations are exempt from payment of regulatory fees.