



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION  
RADIO STATION AUTHORIZATION**

Name: Intelsat License LLC

Call Sign: E030071

Authorization Type: Modification of License

File Number: SES-MOD-20160219-00161

Non Common Carrier

Grant date: 05/03/2016

Expiration Date: 08/22/2018



Nature of Service: Fixed Satellite Service

Class of Station: Fixed Earth Stations

**A) Site Location(s)**

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	Special Provisions NAD (Refer to Section H)
1)	1	17633 TECHNOLOGY BLVD. HAGERSTOWN, WASHINGTON, MD 21740	39°35'57.9"N	77°45'17.3"W	163.06	83

Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209

*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 August 22, 2003 (3 AM Eastern Standard Time) and ending August 22, 2018 (3 AM Eastern Standard Time). The required date of completion of construction and commencement of operation is May 3, 2017 (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)	6681.0000-6725.0000	H, V, L, R	1M00G7W	Tx	54.50	30.50	1		DIGITAL, DATA
2)	6681.0000-6725.0000	H, V, L, R	36M0G7W	Tx	70.00	30.50	1		DIGITAL, DATA
3)	6681.0000-6725.0000	H, V, L, R	44M0G7W	Tx	70.90	30.50	1		DIGITAL, DATA
4)	6669.0000-6681.0000	H, V, L, R	12M0G7W	Tx	62.30	27.50	1		DIGITAL, DATA
5)	6669.0000-6681.0000	H, V, L, R	1M00G7W	Tx	51.50	27.50	1		DIGITAL, DATA
6)	6425.0000-6669.0000	H, V, L, R	1M00G7W	Tx	54.50	30.50	1		DIGITAL, DATA
7)	6425.0000-6669.0000	H, V, L, R	36M0G7W	Tx	70.00	30.50	1		DIGITAL, DATA
8)	6425.0000-6669.0000	H, V, L, R	62M5G7W	Tx	72.40	30.50	1		DIGITAL, DATA
9)	6421.0000-6426.0000	H, V, L, R	1M20FXD	Tx	81.10	56.30	1		COMMAND AND RANGING



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#	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
10)	5925.0000-6425.0000	H, V, L, R	100KG7D	Tx	70.30	56.30	1		DIGITAL, DATA
11)	5925.0000-6425.0000	H, V, L, R	72M0G7W	Tx	83.00	40.40	1		DIGITAL DATA CARRIER
12)	5925.0000-6425.0000	H, V, L, R	36M0F8W	Tx	83.00	56.00	1		ANALOG VIDEO WITH ASSOCIATED AUDIO CARRIERS
13)	5925.0000-6425.0000	H, V, L, R	800KFXW	Tx	79.30	56.30	1	6565	COMMAND AND RANGE CARRIER FOR SATELLITE CONTROL
14)	5850.0000-5925.0000	H, V, L, R	100KG7D	Tx	70.30	56.30	1		DIGITAL, DATA
15)	5850.0000-5925.0000	H, V, L, R	1M00G7W	Tx	80.30	56.30	1		DIGITAL, DATA
16)	5850.0000-5925.0000	H, V, L, R	36M0G7W	Tx	82.00	42.50	1		DIGITAL, DATA
17)	5850.0000-5925.0000	H, V, L, R	62M5G7W	Tx	82.00	40.10	1		DIGITAL, DATA
18)	5850.0000-5925.0000	H, V, L, R	72M0G7W	Tx	83.00	40.40	1		DIGITAL DATA CARRIER
19)	5850.0000-5925.0000	H, V, L, R	36M0F8W	Tx	83.00	56.00	1		ANALOG VIDEO WITH ASSOCIATED AUDIO CARRIERS
20)	5850.0000-5925.0000	H, V, L, R	800KFXW	Tx	79.30	56.30	1	6565	COMMAND AND RANGE CARRIER FOR SATELLITE CONTROL
21)	5850.0000-5854.0000	H, V, L, R	850KG7D	Tx	79.60	56.30	1	90235	COMMAND AND RANGING
22)	5850.0000-5853.5000	H, V, L, R	1M20FXD	Tx	81.10	56.30	1		COMMAND AND RANGING
23)	5850.0000-5853.5000	H, V, L, R	850KFXD	Tx	79.60	56.30	1		COMMAND AND RANGING
24)	3700.0000-4200.0000	H, V, L, R	100KG7D	Rx			1		DIGITAL, DATA
25)	3700.0000-4200.0000	H, V, L, R	72M0G7W	Rx			1		DIGITAL, DATA
26)	3700.0000-4200.0000	H, V, L, R	36M0F8W	Rx			1		ANALOG VIDEO WITH ASSOCIATED AUDIO CARRIERS
27)	3700.0000-4200.0000	H, V, L, R	800KFXW	Rx			1		COMMAND AND RANGE CARRIER FOR SATELLITE CONTROL
28)	3625.0000-3700.0000	H, V, L, R	100KG7D	Rx			1		DIGITAL, DATA
29)	3625.0000-3700.0000	H, V, L, R	36M0F8W	Rx			1		ANALOG VIDEO WITH ASSOCIATED AUDIO CARRIERS
30)	3625.0000-3700.0000	H, V, L, R	72M0G7W	Rx			1		DIGITAL VIDEO WITH ASSOCIATED AUDIO CARRIERS



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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
31)	3625.0000-3700.0000	H, V, L, R	800KFXW	Rx			1		COMMAND AND RANGE CARRIER FOR SATELLITE CONTROL

**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)	5925.0000-6425.0000	6.0W	143.0W	05.3	10.3	101.9	253.6	10.56	1
2)	3700.0000-4200.0000	6.0W	143.0W	05.3	10.3	101.9	253.6		1
3)	3625.0000-3700.0000		304.5E		38.8		147.3		1
4)	3625.0000-3700.0000		307.0E		37.6		144.1		1
5)	3625.0000-3700.0000		310.0E		36.0		140.5		1
6)	3625.0000-3700.0000		325.5E		26.4		124.1		1
7)	3625.0000-3700.0000		328.5E		24.3		121.4		1
8)	3625.0000-3700.0000		330.5E		22.9		119.6		1
9)	3625.0000-3700.0000		332.5E		21.5		117.9		1
10)	3625.0000-3700.0000		335.5E		19.3		115.4		1
11)	3625.0000-3700.0000		340.0E		15.9		111.9		1
12)	3625.0000-3700.0000		342.0E		14.4		110.4		1
13)	5850.0000-5925.0000		304.5E		38.8		147.3		1
14)	5850.0000-5925.0000		307.0E		37.6		144.1		1
15)	5850.0000-5925.0000		310.0E		36.0		140.5		1
16)	5850.0000-5925.0000		325.5E		26.4		124.1		1
17)	5850.0000-5925.0000		328.5E		24.3		121.4		1
18)	5850.0000-5925.0000		330.5E		22.9		119.6		1
19)	5850.0000-5925.0000		332.5E		21.5		117.9		1
20)	5850.0000-5925.0000		335.5E		19.3		115.4		1
21)	5850.0000-5925.0000		340.0E		15.9		111.9		1
22)	5850.0000-5925.0000		342.0E		14.4		110.4		1
23)	5850.0000-6725.0000	49.9W	50.1W	35.9	36.0	140.3	140.6	-9.46	1
24)	6421.0000-6426.0000	49.0W	51.0W	35.5	36.6	139.2	141.7	-9.41	1



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**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		
25)	5850.0000-5853.5000	49.0W	51.0W	35.5	36.6	139.2	141.7	-9.41	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 Permitted Space Station List
- 2) 1 to INTELSAT 805 in AOR @ 304.5 E.L. satellite of the INTELSAT system (U.S.-licensed)
- 3) 1 to INTELSAT AOR @ 307.0 E.L. satellite of the INTELSAT system (U.S.-licensed)
- 4) 1 to INTELSAT AOR @ 310.0 E.L. satellite of the INTELSAT system (U.S.-licensed)
- 5) 1 to INTELSAT AOR @ 325.5 E.L. satellite of the INTELSAT system (U.S.-licensed)
- 6) 1 to INTELSAT AOR @ 328.5 E.L. satellite of the INTELSAT system (U.S.-licensed)
- 7) 1 to INTELSAT AOR @ 330.5 E.L. satellite of the INTELSAT system (U.S.-licensed)
- 8) 1 to INTELSAT AOR @ 332.5 E.L. satellite of the INTELSAT system (U.S.-licensed)
- 9) 1 to INTELSAT AOR @ 335.5 E.L. satellite of the INTELSAT system (U.S.-licensed)
- 10) 1 to INTELSAT AOR @ 340.0 E.L. satellite of the INTELSAT system (U.S.-licensed)
- 11) 1 to INTELSAT AOR @ 342.0 E.L. satellite of the INTELSAT system (U.S.-licensed)
- 12) 1 to INTELSAT 29e (S2913) @ 50.0 degrees W.L. (U.S.-licensed)

**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	1	16.4	VERTEX	16.4 THC	163.06	16.4 AGL/ 179.46 AMSL	
Max Gains(s):		59.0 dBi @	6.0000 GHz	54.8 dBi @	4.0000 GHz	54.8 dBi @		
		4.0000 GHz						
Maximum total input power at antenna flange (Watts) =					251.20			
Maximum aggregate output EIRP for all carriers (dBW) =					83.00			

**G) Antenna Structure marking and lighting requirements:**

None unless otherwise specified under Special and General Provisions



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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:

- 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.
- 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).
- 5015 --- Upon completion of construction, each 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 facility as authorized has been completed, that each antenna facility has been tested and is within 2 dB of the pattern specified in Section 25.209 and that the station is operational including the date of commencement of service and will remain operational during the license period unless the license is submitted for cancellation.
- 5208 --- 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. Compliance can be accomplished in most cases by appropriate restrictions, such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling, or by field measurements. The FCC's OET Bulletin 65 (available on-line at [www.fcc.gov/oet/rfsafety](http://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.
- 5216 --- All operations shall be on a non-common carrier basis.



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

- 5822 --- The 3600-3650 MHz band is shared on a co-primary basis in the U.S. and Possessions with Federal Government radiolocation systems. Unacceptable interference may be caused to this earth station from radiolocation systems, including high-powered, highly mobile, shipborne and airborne radar transmitters, operating in the frequency band. Consistent with the applicant's EMC analysis (as required by US245 and based on the NTIA TR-99-361 Report, Technical Characteristics of Radiolocation Systems operating in the 3.1-3.7 GHz Band and Procedures for assessing EMC with Fixed Earth Station Receivers (available at <http://www.ntia.doc.gov/osmhome/reports.html>), the licensee accepts this potential for unacceptable interference. In the case that out-of-band interference does occur, the licensee is further aware that use of a RF filter ahead of the low noise amplifier (LNA) will limit potential out-of-band interference to its receiving earth station. Additionally, per US 245, in the band 3600-3650 MHz, these fixed-satellite service operations are limited to international inter-continental satellite systems.
- 5823 --- The 5850-5925 MHz band is shared in the U.S. and Possessions on a co-primary basis with Federal Government radiolocation systems. Unacceptable interference may be caused to this earth station's communication links from radiolocation systems, including high-powered land-based transportable and shipborne radar transmitters, operating in the frequency band in accordance with footnote G2. (See, e.g., NTIA Report Federal Radar Spectrum Requirements, (<http://www.ntia.doc.gov/osmhome/reports/ntia00-40/ntia00-40.pdf>), NTIA Report 83-115, Spectrum Resource Assessment in the 5650-5925 MHz Band ([http://www.fcc.gov/ib/srd/fedreg\\_ntiareport.html](http://www.fcc.gov/ib/srd/fedreg_ntiareport.html)), and FCC Fifth Notice of Inquiry in Preparation for a General World Administrative Conference in 1979 (Docket No. 20271; FCC 77-349)). As required by US245, the earth station licensee is aware of the EMC environment and this sharing situation with the radiolocation service and accepts the potential for unacceptable interference. Additionally, this fixed-satellite service earth station is limited to operations over international inter-continental satellite systems.
- 5859 --- The 3650-3700 MHz band is shared on a co-primary basis in three Federal Government radiolocation systems identified in US348. Unacceptable interference may be caused to this earth station from these three radiolocation systems operating in the frequency band. Consistent with the applicant's EMC analysis (as required by US348 and based on the NTIA TR-99-361 Report, Technical Characteristics of Radiolocation Systems operating in the 3.1-3.7 GHz Band and Procedures for assessing EMC with Fixed Earth Station Receivers (available at <http://www.ntia.doc.gov/osmhome/reports.html>), the licensee accepts this potential for unacceptable interference from the three stations identified in US348. In the case that out-of-band interference does occur, the licensee is further aware that use of a RF filter ahead of the low noise amplifier (LNA) will limit potential out-of-band interference to its receiving earth station. Additionally, per US 245, in the band 3650-3700 MHz, these fixed-satellite service operations are limited to international inter-continental satellite systems.
- 5865 --- This authorization is issued pursuant to and subject to the terms and policy adopted in the Commission's Order, released March 7, 2011 (DA 11-437)
- 5880 --- Use of this facility to provide international service on a common carrier basis requires a separate authorization under Section 214 of the Communication Act of 1934, as amended.
- 6565 --- Telemetry, tracking and telecommand (TT&C) operations identified in part B, Particulars of Operation in this authorization shall be conducted at either or both edges, in accordance with 47 C.F.R. 25.202 (g). Frequencies, polarization and coding shall be selected to minimize interference into other satellite networks. Transmission and reception of TT&C signals not at a band edge is granted only if a waiver of 47 C.F.R. § 25.202(g) has been granted for the specific satellite and the satellite operator agrees.



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

90235 --- For operations with Intelsat 29e (S2913) only.

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.