

Prepared By

COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Prepared For

**Intelsat License LLC
Paumalu, Hawaii**

Temporary Transmit-Only Earth Station
Operation Dates: 10/15/2018 - 12/30/2018

Pursuant to Part 25.203(c) of the FCC Rules and Regulations, the satellite earth station proposed in this application was coordinated by Comsearch using computer techniques and in accordance with Part 25 of the FCC Rules and Regulations. Verbal and written coordination was conducted with the below listed carriers on August 27, 2018.

Company

3G Wireless, LLC
AERIAL VIDEO SYSTEMS
Alascom Inc
Borgeson, Tom R.
Broadcast Sports Inc.
Casper, John
Chicago Comnet Corp
Citywide News Network, Inc.
Cowboys Stadium LP
CP Communications
DCI II, INC.
Direct Broadcast Services, Inc.
Federal Communication Commission
Frontier California Inc.
HF Enterprises, Inc
Hallco Unlimited, Inc.
Hawaii Public Television Foundation
Hawaiian Telcom, Inc.
Heiden, William
im360 Entertainment
Information & Display Systems, Inc.
Information Super Station, LLC
Interlink Network Corp
International Communications Group, Inc
International Electronic Information Services, Inc
KHNL/KGMB License Subsidiary, LLC
KITV, Inc
Loop inc
MERCURY COMMUNICATIONS
Microwave Video Systems, LLC
Moreen, Steven K
NEW ENGLAND DIGITAL DISTRIBUTION, INC.
NEXSTAR BROADCASTING, INC.

NSM Surveillance
Navajo Communications Company
Onboard Images
Pacific Bell Tel Com dba AT&T California
Pacific Television Cneter
Penn Service Microwave Co., Inc.
Plateau Telecommunications, Inc.
Plum TV, LLC
Production & Satellite Services, Inc.
REMOTE FACILITIES CONSULTING SERVICES
RF Central, LLC
RF Film, Inc
Radiofone, Inc.
Randy Hermes Production
Remote Broadcasts, Inc.
Speedshotz, Inc
TTWN Networks, LLC
Unisat, Inc.
United Telephone - Southeast
Vitec Broadcast Services, Inc
Vyvx, LLC
Westar Satellite Services LP
Winged Vision Inc
Wolfe Air Aviation

There are no unresolved interference objections with the station contained in these applications.

The following section presents the data pertinent to frequency coordination of the earth station that was circulated to all carriers within its coordination contours.

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Date: 08/27/2018
Job Number: 180827COMSGE03

Administrative Information

Status: TEMPORARY (Operation from 10/15/2018 to 12/30/2018)
Call Sign: TEMP12
Licensee Code: INTELS
Licensee Name: Intelsat License LLC

Site Information

PAUMALU, HI

Venue Name
Latitude (NAD 83): 21° 40' 14.2" N
Longitude (NAD 83): 158° 2' 7.8" W
Climate Zone: C
Rain Zone: 4
Ground Elevation (AMSL): 131.98 m / 433.0 ft

Link Information

Satellite Type: Low Earth Orbit
Mode: TO - Transmit-Only
Modulation: Digital
Minimum Elevation Angle: 5.0°
Azimuth Range: 0.0° to 360°
Antenna Centerline (AGL): 3.66 m / 12.0 ft

Antenna Information

Transmit - FCC32

Manufacturer: Viasat
Model: 7.3 meter
Gain / Diameter: 40.9 dBi / 7.3 m
3-dB / 15-dB Beamwidth: 1.00° / 2.00°

Max Available RF Power (dBW/4 kHz): 15.4
(dBW/MHz): 39.4

Maximum EIRP (dBW/4 kHz): 56.3
(dBW/MHz): 80.3

Interference Objectives: Long Term: -154.0 dBW/4 kHz 20%
Short Term: -131.0 dBW/4 kHz 0.0025%

Frequency Information

Transmit 2.0 GHz

Emission / Frequency Range (MHz):
19K2FXD - 307KFXD / 2059.0 - 2059.0
19K2FXD - 307KFXD / 2061.0 - 2061.0
19K2FXD - 307KFXD / 2062.0 - 2062.0
19K2FXD - 307KFXD / 2063.0 - 2063.0

Max Great Circle Coordination Distance: 293.2 km / 182.2 mi
Precipitation Scatter Contour Radius: 364.4 km / 226.4 mi

Coordination Values	PAUMALU, HI	
Licensee Name	Intelsat License LLC	
Latitude (NAD 83)	21° 40' 14.2" N	
Longitude (NAD 83)	158° 2' 7.8" W	
Ground Elevation (AMSL)	131.98 m / 433.0 ft	
Antenna Centerline (AGL)	3.66 m / 12.0 ft	
Antenna Model	Viasat 7,3 meter	
Antenna Mode	Transmit 2.0 GHz	
Interference Objectives: Long Term	-154.0 dBW/4 kHz	20%
Short Term	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power	15.4 (dBW/4 kHz)	

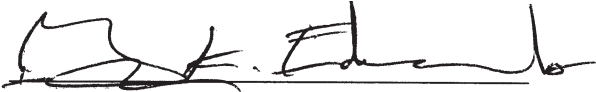
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	72.41	4.50	293.25
5	0.00	70.74	4.50	293.25
10	0.00	69.21	4.50	293.25
15	0.00	67.83	4.50	293.25
20	0.00	66.61	4.50	293.25
25	0.00	65.58	4.50	293.25
30	0.00	64.73	4.50	293.25
35	0.00	64.09	4.50	293.25
40	0.00	63.66	4.50	293.25
45	0.00	63.44	4.50	293.25
50	0.00	63.44	4.50	293.25
55	0.00	63.65	4.50	293.25
60	0.00	64.08	4.50	293.25
65	0.00	64.73	4.50	293.25
70	0.00	65.57	4.50	293.25
75	0.00	66.60	4.50	293.25
80	0.00	67.81	4.50	293.25
85	0.00	69.19	4.50	293.25
90	0.00	70.72	4.50	293.25
95	0.00	72.39	4.50	293.25
100	0.00	74.18	4.50	293.25
105	0.00	76.07	4.50	293.25
110	0.00	78.06	4.50	293.25
115	0.00	80.13	4.50	293.25
120	0.00	82.25	4.50	293.25
125	0.00	84.43	4.50	293.25
130	0.00	86.64	4.50	293.25
135	0.00	88.87	4.50	293.25
140	0.00	91.11	4.50	293.25
145	0.00	93.34	4.50	293.25
150	0.00	95.55	4.50	293.25
155	0.00	97.72	4.50	293.25
160	0.00	99.85	4.50	293.25
165	0.00	101.92	4.50	293.25
170	0.00	103.91	4.50	293.25
175	0.00	105.80	4.50	293.25
180	0.00	107.59	4.50	293.25
185	0.00	109.26	4.50	293.25

Coordination Values		PAUMALU, HI	
Licensee Name		Intelsat License LLC	
Latitude (NAD 83)		21° 40' 14.2" N	
Longitude (NAD 83)		158° 2' 7.8" W	
Ground Elevation (AMSL)		131.98 m / 433.0 ft	
Antenna Centerline (AGL)		3.66 m / 12.0 ft	
Antenna Model		Viasat 7,3 meter	
Antenna Mode		Transmit 2.0 GHz	
Interference Objectives:	Long Term	-154.0 dBW/4 kHz	20%
	Short Term	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power	15.4 (dBW/4 kHz)		

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	110.79	4.50	293.25
195	0.00	112.17	4.50	293.25
200	0.00	113.39	4.50	293.25
205	0.00	114.42	4.50	293.25
210	0.00	115.27	4.50	293.25
215	0.00	115.91	4.50	293.25
220	0.00	116.34	4.50	293.25
225	0.00	116.56	4.50	293.25
230	0.00	116.56	4.50	293.25
235	0.00	116.35	4.50	293.25
240	0.00	115.92	4.50	293.25
245	0.00	115.27	4.50	293.25
250	0.00	114.43	4.50	293.25
255	0.00	113.40	4.50	293.25
260	0.00	112.19	4.50	293.25
265	0.00	110.81	4.50	293.25
270	0.00	109.28	4.50	293.25
275	0.00	107.61	4.50	293.25
280	0.00	105.82	4.50	293.25
285	0.00	103.93	4.50	293.25
290	0.00	101.94	4.50	293.25
295	0.00	99.87	4.50	293.25
300	0.00	97.75	4.50	293.25
305	0.00	95.57	4.50	293.25
310	0.00	93.36	4.50	293.25
315	0.00	91.13	4.50	293.25
320	0.00	88.89	4.50	293.25
325	0.00	86.66	4.50	293.25
330	0.00	84.45	4.50	293.25
335	0.00	82.28	4.50	293.25
340	0.00	80.15	4.50	293.25
345	0.00	78.08	4.50	293.25
350	0.00	76.09	4.50	293.25
355	0.00	74.20	4.50	293.25

Certification

I hereby certify that I am the technically qualified person responsible for the preparation of the frequency coordination data contained in this report. I am familiar with Parts 101 and 25 of the FCC Rules and Regulations and I have either prepared or reviewed the frequency coordination data submitted with this report, and that it is complete and correct to the best of my knowledge and belief.

BY: 

Gary K. Edwards
Senior Manager
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: September 25, 2018

Exhibit B

WAIVER REQUEST OF TABLE OF ALLOCATION FOR CARBONITE-1 SATELLITE

The U.S. Table of Frequency Allocations¹ allocates the 2025-2100 MHz band for Fixed, Mobile, and Federal use (including Earth Exploration-Satellite). The 2200-2290 MHz is allocated to Federal services (Space Operations, Earth Exploration-Satellite, Fixed, Mobile, and Space Research). To the extent necessary, and in order to ensure Intelsat can verify its equipment in these bands, Intelsat requests waiver of the U.S. Table of Frequency Allocations to permit its 7.3m S-band antenna in Paumalu, Hawaii to communicate with the Earth Exploration-Satellite Carbonite-1 (“CBNT-1”) for the limited purpose of verification of ground station equipment.

The Commission may grant a waiver for good cause shown.² The Commission typically grants a waiver where the particular facts make strict compliance inconsistent with the public interest.³ In granting a waiver, the Commission may take into account considerations of hardship, equity, or more effective implementation of overall policy on an individual basis.⁴ Waiver is therefore appropriate if special circumstances warrant a deviation from the general rule, and such a deviation will serve the public interest. As shown below, good cause exists here to grant a waiver allowing Intelsat’s 7.3m S-band antenna to operate in order to verify its ground station equipment.

Good cause exists to waive the Table of Allocations for 2025-2100 MHz and 2200-2290 MHz frequency bands. In November 2018, pending FCC’s approval, Intelsat will use its 7.3m S-band antenna to support the launch of the General Atomics Orbital Test Bed (“OTB”) satellite. The OTB satellite will carry at least two federal payloads in the 2025-2100 MHz and 2200-2290 MHz bands.⁵ The CBNT-1 test satellite shares many common design features with the OTB satellite such that advance testing of Intelsat’s 7.3m S-band antenna with the CBNT-1 satellite will help assure success of the General Atomics OTB satellite’s launch. Additionally, both the 2025-2100 MHz and 2200-2290 MHz bands that the Earth Exploration-Satellite CBNT-1 operates in are allocated to Federal Earth Exploration-Satellite in the United States and to Earth Exploration-Satellite in all three ITU regions.

Moreover, grant of this waiver is consistent with the Commission’s precedent. A waiver of the Table of Allocations is generally granted “when there is little potential interference into any service authorized under the Table of Frequency allocations and when the nonconforming

¹ See 47 C.F.R. § 2.106.

² 47 C.F.R. §1.3.

³ *N.E. Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990) (“*Northeast Cellular*”).

⁴ *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969); *Northeast Cellular*, 897 F.2d at 1166.

⁵ Federal payloads include the Deep Space Atomic Clock (National Aeronautics and Space Administration) and Modular Solar Array (United States Air Force). See

http://www.ga.com/websites/ga/images/products/defense/space-systems/OTB_Satellite_DS_0818E.pdf for more information.

operator accepts any interference from authorized services.”⁶ In the 2025-2100 MHz band, the 7.3m S-band antenna in Paumalu, Hawaii will only transmit intermittently over a 30-day period. Additionally, the antenna will not transmit in 2200-2290 MHz band and Intelsat agrees to accept any level of interference into this earth stations from Federal users in the band. Finally, grant of the requested waiver would be consistent with prior Commission precedent allowing for use of the 2200-2290 MHz band on a temporary basis.⁷

⁶ See *The Boeing Company*, Order and Authorization, 16 FCC Rcd 22645, 22651 (Int’l Bur. & OET 2001); *Application of Fugro-Chance, Inc. for Blanket Authority to Construct and Operate a Private Network of Receive-Only Mobile Earth Stations*, Order and Authorization, 10 FCC Rcd 2860 (Int’l Bur. 1995) (authorizing MSS in the C-band); see also *Application of Motorola Satellite Communications, Inc. for Modification of License*, Order and Authorization, 11 FCC Rcd 13952-13956 (Int’l Bur. 1996) (authorizing service to fixed terminals in bands allocated the mobile satellite service).

⁷ See *Policy Branch Information; Actions Taken*, Report No. SES-02071, File No. SES-STA-20180530-01000 (June 20, 2018) (Public Notice); *Satellite Communications Services Information; Actions Taken*, Report No. SES-02090, File No. SES-STA-20180711-01659 (Aug. 22, 2018) (Public Notice).

Exhibit C

PETITION FOR WAIVER OF SECTIONS 25.137 AND 25.114

Pursuant to Section 25.137 of the Federal Communications Commission's ("Commission" or "FCC") rules, earth station applicants "requesting authority to communicate with a non-U.S. licensed space station" to serve the United States must demonstrate that U.S.-licensed satellite systems have effective competitive opportunities to provide analogue services in certain countries and must provide the same legal and technical information for the non-U.S.-licensed space station as required by Section 25.114 for U.S.-licensed space stations.¹ Intelsat License LLC ("Intelsat") herein seeks authority to provide testing—not commercial services—to the United States, and thus believes that Section 25.137 does not apply.²

To the extent the Commission determines, however, that Intelsat's request for authority to provide LEOP services on a special temporary basis is a request to serve the United States with a non-U.S.-licensed satellite, Intelsat respectfully requests a waiver of Sections 25.137 and 25.114 of the Commission's rules.³ The Commission may grant a waiver for good cause shown.⁴ The Commission typically grants a waiver where the particular facts make strict compliance inconsistent with the public interest.⁵ In granting a waiver, the Commission may take into account considerations of hardship, equity, or more effective implementation of overall policy on an individual basis.⁶ Waiver is therefore appropriate if special circumstances warrant a deviation from the general rule, and such a deviation will serve the public interest.

In this case, good cause exists for a waiver of both Section 25.137 and Section 25.114 of the FCC's rules. With respect to Section 25.114, Intelsat seeks authority only to communicate with the Carbonite-1 ("CBNT-1") satellite to verify ground equipment prior to an upcoming LEOP mission. The information sought by Section 25.114 is not relevant to verification of ground station equipment. Moreover, Intelsat does not have—and would not easily be able to obtain—such information because Intelsat is not the operator

¹ 47 C.F.R. § 25.137.

² See *EchoStar Satellite Operating Company Application for Special Temporary Authority Related to Moving the EchoStar 6 Satellite from the 77° W.L. Orbital Location to the 96.2° W.L. Orbital Location, and to Operate at the 96.2° W.L. Orbital Location*, Order and Authorization, 28 FCC Rcd. 4229 (2013) (noting that operating TT&C earth stations in the United States with a foreign-licensed satellite does not constitute "DBS service").

³ 47 C.F.R. §§ 25.137 and 25.114.

⁴ 47 C.F.R. § 1.3.

⁵ *N.E. Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990) ("*Northeast Cellular*").

⁶ *WAIT Radio v. FCC*, 419 F.2d 1153, 1159 (D.C. Cir. 1969); *Northeast Cellular*, 897 F.2d at 1166.

of the CBNT-1 satellite. Intelsat has a contract with ViaSat to conduct verification testing.

The information required under Section 25.114 of the FCC's rules is not necessary to determine potential harmful interference. Intelsat will perform the all verification tests on a non-interference basis.

Because it is not relevant to the service for which Intelsat seeks authorization, and because obtaining the information would be a hardship, Intelsat seeks a waiver of all the information required by Section 25.114 of the Commission's rules. Intelsat has provided in this STA request the required technical information that is relevant to the verification services for which Intelsat seeks authorization.

Good cause also exists to waive Section 25.137 of the agency's rules. Section 25.137 is designed to ensure that "U.S.-licensed satellite systems have effective competitive opportunities to provide analogous services" in other countries.⁷ Here, there is no service being provided by the satellite; it is simply being placed in its orbital location after separating from the launch vehicle. Thus, the purpose of Section 25.137 would not be served by applying these rules to LEOP services. For example, Section 25.137(d)(4) requires earth station applicants requesting authority to operate with a non-U.S.-licensed space station that is not in orbit and operating to post a bond.⁸ The underlying purpose of Section 25.137(d)(4)—to provide parity between U.S.-licensed and non-U.S.-licensed commercial satellite systems in discouraging orbital location warehousing—would not be served by requiring Intelsat to post a bond to provide approximately 30 days of verification testing to the CBNT-1 satellite.

It is Intelsat's understanding that CBNT-1 is licensed by the United Kingdom, which is a WTO-member country. Thus, the purpose of Section 25.137—to ensure that U.S. satellite operators enjoy "effective competitive opportunities" to serve certain foreign markets—will not be undermined by grant of this waiver request.

Finally, Intelsat notes that it expects to operate with the CBNT-1 satellite using its U.S. earth station intermittently for a period of approximately 30 days. Requiring Intelsat to obtain copious technical and legal information from an unrelated party, where there is no risk of harmful interference and the operations will cease after approximately 30 days, would pose undue hardship without serving underlying policy objectives. Given these particular facts, the waiver sought herein is plainly appropriate.

⁷ 47 C.F.R. § 25.137(a).

⁸ *See* 47 C.F.R. §25.137(d)(4).