

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**Federal Aviation Administration**  
**CAPE LISBURNE, AK**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
December 04, 2018

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## 1. CONCLUSIONS

An interference study considering all existing, proposed and prior coordinated microwave facilities within the coordination contours of the proposed earth station demonstrates that this site will operate satisfactorily with the common carrier microwave environment. Further, there will be no restrictions of its operation due to interference considerations.

## **2. SUMMARY OF RESULTS**

No great circle interference cases were identified during the interference study of the proposed earth station.

### 3. SUPPLEMENTAL SHOWING

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.

Coordination data for this earth station was sent to the below listed carriers with a letter dated 12/04/2018.

Company

Teck Alaska Incorporated

## **4. EARTH STATION COORDINATION DATA**

This section presents the data pertinent to frequency coordination of the proposed 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: 12/04/2018  
Job Number: 181204COMSGE01

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### Administrative Information

Status ENGINEER PROPOSAL  
Call Sign  
Licensee Code FEDFAA  
Licensee Name Federal Aviation Administration

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### Site Information CAPE LISBURNE, AK

Venue Name  
Latitude (NAD 83) 68° 52' 18.1" N  
Longitude (NAD 83) 166° 4' 56.6" W  
Climate Zone B  
Rain Zone 2  
Ground Elevation (AMSL) 16.4 m / 53.8 ft

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### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 118° W to 150° West Longitude  
Azimuth Range 129.9° to 162.8°  
Corresponding Elevation Angles 5.3° / 11.7°  
Antenna Centerline (AGL) 2.74 m / 9.0 ft

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### Antenna Information

		Receive - FCC32		Transmit - FCC32	
Manufacturer		Scientific-Atlanta		Scientific-Atlanta	
Model		8345		8345	
Gain / Diameter		43.3 dBi / 4.5 m		45.0 dBi / 4.5 m	
3-dB / 15-dB Beamwidth		1.20° / 2.50°		0.96° / 1.90°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			-12.0 12.0	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)			33.0 57.0	
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
	Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%

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### Frequency Information

	Receive 4.0 GHz	Transmit 6.1 GHz
Emission / Frequency Range (MHz)	152KG7D - 392KG7D / 3700.0 - 4200.0	152KG7D - 392KG7D / 5925.0 - 6425.0
Max Great Circle Coordination Distance	571.0 km / 354.8 mi	240.8 km / 149.6 mi
Precipitation Scatter Contour Radius	614.0 km / 381.5 mi	100.0 km / 62.1 mi

# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

### CAPE LISBURNE, AK

Licensee Name Federal Aviation Administration  
Latitude (NAD 83) 68° 52' 18.1" N  
Longitude (NAD 83) 166° 4' 56.6" W  
Ground Elevation (AMSL) 16.4 m / 53.8 ft  
Antenna Centerline (AGL) 2.74 m / 9.0 ft  
Antenna Model Scientific-Atlanta 4.5 meter  
Antenna Mode Receive 4.0 GHz Transmit 6.1 GHz  
Interference Objectives: Long Term -156.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%  
Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power -12.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	129.74	-10.00	412.20	-10.00	154.09
5	0.00	124.78	-10.00	412.20	-10.00	154.09
10	0.00	119.81	-10.00	412.20	-10.00	154.09
15	0.00	114.83	-10.00	412.20	-10.00	154.09
20	0.00	109.86	-10.00	412.20	-10.00	154.09
25	0.00	104.88	-10.00	412.20	-10.00	154.09
30	0.00	99.90	-10.00	412.20	-10.00	154.09
35	0.00	94.93	-10.00	412.20	-10.00	154.09
40	0.00	89.95	-10.00	412.20	-10.00	154.09
45	0.00	84.97	-10.00	412.20	-10.00	154.09
50	0.00	79.99	-10.00	412.20	-10.00	154.09
55	0.00	75.01	-10.00	412.20	-10.00	154.09
60	0.00	70.04	-10.00	412.20	-10.00	154.09
65	0.00	65.06	-10.00	412.20	-10.00	154.09
70	0.00	60.09	-10.00	412.20	-10.00	154.09
75	0.00	55.12	-10.00	412.20	-10.00	154.09
80	0.00	50.15	-10.00	412.20	-10.00	154.09
85	0.00	45.19	-9.38	420.02	-9.38	156.76
90	0.00	40.24	-8.12	436.28	-8.12	162.36
95	0.00	35.29	-6.69	455.41	-6.69	168.98
100	2.23	30.09	-4.96	222.68	-4.96	100.00
105	3.28	25.02	-2.96	194.97	-2.96	100.00
110	2.51	20.13	-0.60	241.05	-0.60	100.00
115	1.65	15.37	2.33	311.49	2.33	115.47
120	1.30	10.70	6.26	380.17	6.26	135.66
125	1.23	6.39	11.87	460.42	11.87	162.52
130	1.68	3.60	18.10	571.01	18.10	240.82
135	1.87	4.62	15.38	524.57	15.38	208.86
140	2.01	5.71	13.08	470.48	13.08	180.61
145	3.10	5.76	12.99	399.35	12.99	152.57
150	4.45	5.40	13.69	335.12	13.69	127.36
155	5.81	4.89	14.77	291.22	14.77	113.71
160	6.53	4.87	14.81	266.76	14.81	106.68
165	8.26	4.11	16.65	259.18	16.65	102.63
170	10.53	7.27	10.45	196.59	10.45	100.00
175	11.18	12.19	4.85	161.08	4.85	100.00
180	11.00	17.19	1.12	145.86	1.12	100.00
185	7.89	22.49	-1.80	146.69	-1.80	100.00



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### Coordination Values

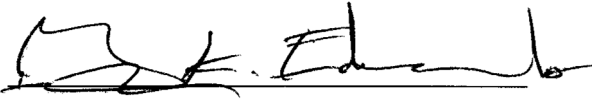
### CAPE LISBURNE, AK

Licensee Name	Federal Aviation Administration		
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Antenna Centerline (AGL)	2.74 m / 9.0 ft		
Antenna Model	Scientific-Atlanta 4.5 meter		
Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz
Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz
Max Available RF Power			-12.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	7.90	27.42	-3.95	137.62	-3.95	100.00
195	7.42	32.43	-5.77	131.94	-5.77	100.00
200	6.98	37.43	-7.33	127.48	-7.33	100.00
205	9.46	42.22	-8.64	118.98	-8.64	100.00
210	11.38	47.17	-9.84	108.08	-9.84	100.00
215	12.95	52.18	-10.00	100.59	-10.00	100.00
220	12.43	57.18	-10.00	102.90	-10.00	100.00
225	11.37	62.17	-10.00	107.62	-10.00	100.00
230	9.98	67.18	-10.00	113.78	-10.00	100.00
235	9.46	72.19	-10.00	114.95	-10.00	100.00
240	8.16	77.20	-10.00	117.84	-10.00	100.00
245	8.60	82.18	-10.00	116.87	-10.00	100.00
250	9.02	87.18	-10.00	115.94	-10.00	100.00
255	9.44	92.17	-10.00	114.99	-10.00	100.00
260	9.54	97.17	-10.00	114.78	-10.00	100.00
265	9.95	102.17	-10.00	113.86	-10.00	100.00
270	7.67	107.13	-10.00	118.95	-10.00	100.00
275	4.87	112.00	-10.00	132.57	-10.00	100.00
280	2.85	116.82	-10.00	169.43	-10.00	100.00
285	0.00	121.42	-10.00	412.20	-10.00	154.09
290	0.00	126.27	-10.00	412.20	-10.00	154.09
295	0.00	131.09	-10.00	412.20	-10.00	154.09
300	0.00	135.89	-10.00	412.20	-10.00	154.09
305	0.00	140.65	-10.00	412.20	-10.00	154.09
310	0.00	145.36	-10.00	412.20	-10.00	154.09
315	0.00	149.98	-10.00	412.20	-10.00	154.09
320	0.00	154.47	-10.00	412.20	-10.00	154.09
325	0.00	158.75	-10.00	412.20	-10.00	154.09
330	0.00	159.29	-10.00	412.20	-10.00	154.09
335	0.00	154.43	-10.00	412.20	-10.00	154.09
340	0.00	149.53	-10.00	412.20	-10.00	154.09
345	0.00	144.60	-10.00	412.20	-10.00	154.09
350	0.00	139.66	-10.00	412.20	-10.00	154.09
355	0.00	134.71	-10.00	412.20	-10.00	154.09

## 5. CERTIFICATION

I HEREBY CERTIFY THAT I AM THE TECHNICALLY QUALIFIED PERSON RESPONSIBLE FOR THE PREPARATION OF THE FREQUENCY COORDINATION DATA CONTAINED IN THIS APPLICATION, THAT I AM FAMILIAR WITH PARTS 101 AND 25 OF THE FCC RULES AND REGULATIONS, THAT I HAVE EITHER PREPARED OR REVIEWED THE FREQUENCY COORDINATION DATA SUBMITTED WITH THIS APPLICATION, 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: December 04, 2018