Exhibit 2

Ka-Band Earth Station – Albuquerque, NM

Frequency Coordination Report

28 GHz

Prepared on Behalf of
Hughes Network
Systems Limited

March 21, 2016

COMSEARCH®
A CommScope Company

Table of Contents

1. Summary of Results

On behalf of Hughes Network Systems, Comsearch performed a coordination notice for all existing and proposed terrestrial licenses within the coordination contours of their proposed Ka-Band earth station in Albuquerque, New Mexico, which will transmit at 28 GHz[1]. Prior-notification letters were sent to the licensees and a copy of the notification data is provided in section four of this report. The earth station coordination was finalized on March 18, 2016.

No objections were received from any of the incumbent 28 GHz licensees. Our notification to the LMDS incumbents was performed under the assumption that the earth station would be operating on a secondary basis to LMDS Block A operations and a contact at Hughes Network Systems has been provided in case any concerns may arise in the future.

2. 28 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in Albuquerque, New Mexico was prior-coordinated by Comsearch. A notification letter and datasheet for this earth station were sent to the following 28 GHz common carrier fixed microwave licensee on March 2, 2016. This licensee is authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
Verizon	Continental US

A notification letter and datasheet for the Ka-Band earth station in Albuquerque, New Mexico were also sent to the following 28 GHz local television transmission licensee on March 2, 2016. This licensee is authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
Information Super Station, LLC	Continental US

No objections were received from the common carrier or local television transmission service incumbents.

[1] The proposed earth station will operate in the 27.85 – 28.35 GHz portion of the Ka-Band.

3. 28 GHz LMDS Coordination

A Notification letter was sent to the following 28 GHz LMDS licensee on March 2, 2016. The proposed earth station will operate on frequencies that overlap Block A of the LMDS service. The total frequency allocation for Block A of the LMDS spectrum appears below.

Block A: 27.500-28.350 GHz
29.100-29.250 GHz
31.075-31.225 GHz

Licensee	Market	Market Name
Nextlink/XO	BTA008[2]	Albuquerque, NM

No objections were received from the LMDS incumbents.

[2] The proposed earth station will be located inside BTA008.

4. Earth Station Coordination Data

This section presents the data pertinent to the proposed Ka-Band earth station in Albuquerque, New Mexico. This data was circulated to all incumbent licensees in the shared 28 GHz frequency ranges.

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Date:	02/25/2016
Job Number:	<PCNJobCode>

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	<PCNCallSign>
Licensee Code	HUNESY
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED

Site Information — ALBUQUERQUE, NM

Venue Name	
Latitude (NAD 83)	35° 5' 33.1" N
Longitude (NAD 83)	106° 39' 11.9" W
Climate Zone	A
Rain Zone	5
Ground Elevation (AMSL)	1511.4 m / 4958.7 ft

Link Information

Satellite Type	Geostationary
Mode	TO - Transmit-Only
Modulation	Digital
Satellite Arc	63° W to 63° West Longitude
Azimuth Range	121.1° to 121.1°
Corresponding Elevation Angles	28.7° / 28.7°
Antenna Centerline (AGL)	5.49 m / 18.0 ft

Antenna Information — Transmit - FCC32

Manufacturer		General Dynamics
Model		8.1 meter
Gain / Diameter		65.3 dBi / 8.1 m
3-dB / 15-dB Beamwidth		0.10° / 0.23°
Max Available RF Power	(dBW/4 kHz)	-32.0
	(dBW/MHz)	-8.0
Maximum EIRP	(dBW/4 kHz)	33.3
	(dBW/MHz)	57.3
Interference Objectives:	Long Term	-151.0 dBW/4 kHz 20%
	Short Term	-128.0 dBW/4 kHz 0.0025%

Frequency Information — Transmit 28.0 GHz

Emission / Frequency Range (MHz)	250MG7D / 27850.0 - 28350.0
Max Great Circle Coordination Distance	100.0 km / 62.1 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Coordination Values	**ALBUQUERQUE, NM**
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED
Latitude (NAD 83)	35° 5' 33.1" N
Longitude (NAD 83)	106° 39' 11.9" W
Ground Elevation (AMSL)	1511.4 m / 4958.7 ft
Antenna Centerline (AGL)	5.49 m / 18.0 ft
Antenna Model	General Dynamics 8.1 meter
Antenna Mode	Transmit 28.0 GHz
Interference Objectives: Long Term	-151.0 dBW/4 kHz 20%
Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-32.0 (dBW/4 kHz)

Transmit 28.0 GHz

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	116.93	-10.00	100.00
5	0.00	112.68	-10.00	100.00
10	0.00	108.39	-10.00	100.00
15	0.00	104.06	-10.00	100.00
20	0.00	99.70	-10.00	100.00
25	0.00	95.33	-10.00	100.00
30	0.00	90.94	-10.00	100.00
35	0.33	86.55	-10.00	100.00
40	0.43	82.14	-10.00	100.00
45	0.48	77.75	-10.00	100.00
50	0.53	73.38	-10.00	100.00
55	0.55	69.04	-10.00	100.00
60	0.64	64.73	-10.00	100.00
65	0.73	60.46	-10.00	100.00
70	0.81	56.26	-10.00	100.00
75	0.98	52.10	-10.00	100.00
80	1.05	48.09	-10.00	100.00
85	1.09	44.24	-9.15	100.00
90	1.03	40.65	-8.23	100.00
95	1.13	37.21	-7.27	100.00
100	1.29	34.05	-6.30	100.00
105	1.36	31.38	-5.42	100.00
110	1.16	29.50	-4.74	100.00
115	1.11	28.18	-4.25	100.00
120	1.11	27.59	-4.02	100.00
125	1.14	27.79	-4.10	100.00
130	1.14	28.84	-4.50	100.00
135	1.08	30.66	-5.16	100.00
140	1.02	33.08	-5.99	100.00
145	0.97	35.97	-6.90	100.00
150	1.00	39.19	-7.83	100.00
155	0.85	42.79	-8.78	100.00
160	0.80	46.55	-9.70	100.00
165	0.70	50.50	-10.00	100.00
170	0.36	54.66	-10.00	100.00
175	0.00	58.89	-10.00	100.00
180	0.00	63.07	-10.00	100.00
185	0.00	67.32	-10.00	100.00

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Coordination Values	**ALBUQUERQUE, NM**
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED
Latitude (NAD 83)	35° 5' 33.1" N
Longitude (NAD 83)	106° 39' 11.9" W
Ground Elevation (AMSL)	1511.4 m / 4958.7 ft
Antenna Centerline (AGL)	5.49 m / 18.0 ft
Antenna Model	General Dynamics 8.1 meter
Antenna Mode	Transmit 28.0 GHz
Interference Objectives: Long Term	-151.0 dBW/4 kHz 20%
Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-32.0 (dBW/4 kHz)

Transmit 28.0 GHz

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	71.61	-10.00	100.00
195	0.00	75.94	-10.00	100.00
200	0.00	80.30	-10.00	100.00
205	0.00	84.67	-10.00	100.00
210	0.00	89.06	-10.00	100.00
215	0.00	93.44	-10.00	100.00
220	0.00	97.82	-10.00	100.00
225	0.00	102.19	-10.00	100.00
230	0.00	106.53	-10.00	100.00
235	0.00	110.84	-10.00	100.00
240	0.24	115.17	-10.00	100.00
245	0.28	119.40	-10.00	100.00
250	0.35	123.58	-10.00	100.00
255	0.39	127.65	-10.00	100.00
260	0.46	131.63	-10.00	100.00
265	0.66	135.52	-10.00	100.00
270	0.59	139.08	-10.00	100.00
275	0.60	142.42	-10.00	100.00
280	0.54	145.37	-10.00	100.00
285	0.58	147.96	-10.00	100.00
290	0.83	150.20	-10.00	100.00
295	0.55	151.27	-10.00	100.00
300	0.52	151.82	-10.00	100.00
305	0.79	151.86	-10.00	100.00
310	0.68	150.72	-10.00	100.00
315	0.59	148.91	-10.00	100.00
320	0.32	146.35	-10.00	100.00
325	0.31	143.55	-10.00	100.00
330	0.30	140.36	-10.00	100.00
335	0.30	136.89	-10.00	100.00
340	0.00	133.04	-10.00	100.00
345	0.00	129.19	-10.00	100.00
350	0.00	125.20	-10.00	100.00
355	0.00	121.11	-10.00	100.00

5. Contact Information

For questions or information regarding the 28 GHz Frequency Coordination Report, please contact:

Contact person:	Joanna Lynch
Title:	Manager, Spectrum & Data Solutions
Company:	Comsearch
Address:	19700 Janelia Farm Blvd., Ashburn, VA 20147
Telephone:	703-726-5711
Fax:	703-726-5599
Email:	jlynch@comsearch.com
Web site:	www.comsearch.com

Ka-Band Earth Station – Monee, IL

Frequency Coordination Report

28 GHz

Prepared on Behalf of
Hughes Network
Systems Limited

March 21, 2016

COMSEARCH®
A CommScope Company

Table of Contents

1. Summary of Results

On behalf of Hughes Network Systems, Comsearch performed a coordination notice for all existing and proposed terrestrial licenses within the coordination contours of their proposed Ka-Band earth station in Monee, Illinois, which will transmit at 28 GHz[1]. Prior-notification letters were sent to the licensees and a copy of the notification data is provided in section four of this report. The earth station coordination was finalized on March 18, 2016.

No objections were received from any of the incumbent 28 GHz licensees. Our notification to the LMDS incumbents was performed under the assumption that the earth station would be operating on a secondary basis to LMDS Block A operations and a contact at Hughes Network Systems has been provided in case any concerns may arise in the future.

2. 28 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in Monee, Illinois was prior-coordinated by Comsearch. A notification letter and datasheet for this earth station were sent to the following 28 GHz common carrier fixed microwave licensees on March 2, 2016. These licensees are authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a statewide or nationwide basis.

Licensee	Authorized Geographic Area
Verizon	Continental US
AT&T	Statewide: Illinois
AT&T	Statewide: Michigan

A notification letter and datasheet for the Ka-Band earth station in Monee, Illinois were also sent to the following 28 GHz local television transmission licensee on March 2, 2016. This licensee is authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
Information Super Station, LLC	Continental US

No objections were received from the common carrier or local television transmission service incumbents.

[1] The proposed earth station will operate in the 27.85 – 28.35 GHz portion of the Ka-Band.

3. 28 GHz LMDS Coordination

A Notification letter was sent to the following 28 GHz LMDS licensees on March 2, 2016. The proposed earth station will operate on frequencies that overlap Block A of the LMDS service. The total frequency allocation for Block A of the LMDS spectrum appears below.

Block A: 27.500-28.350 GHz
29.100-29.250 GHz
31.075-31.225 GHz

Licensee	Market	Market Name
BroadBand One	BTA046	Bloomington, IL
Eastern Illini Electric Cooperative	BTA071	Champaign-Urbana, IL
Nextlink/XO	BTA078[2]	Chicago, IL
Sprint[3]	BTA078	Chicago, IL
Towerstream Corporation[4]	BTA078	Chicago, IL
Eastern Illini Electric Cooperative	BTA225	Kankakee, IL
BroadBand One	BTA243	La Salle-Peru-Ottawa-Streator, IL

No objections were received from the LMDS incumbents.

[2] The proposed earth station will be located inside BTA078.

[3] Sprint is leasing spectrum from XO/Nextlink in the Chicago, IL Basic Trading Area (BTA).

[4] Towerstream is leasing spectrum from XO/Nextlink in the Chicago, IL BTA.

4. Earth Station Coordination Data

This section presents the data pertinent to the proposed Ka-Band earth station in Monee, Illinois. This data was circulated to all incumbent licensees in the shared 28 GHz frequency ranges.

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Date:	02/25/2016
Job Number:	<PCNJobCode>

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	<PCNCallSign>
Licensee Code	HUNESY
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED

Site Information — MONEE, IL

Venue Name	
Latitude (NAD 83)	41° 28' 1.7" N
Longitude (NAD 83)	87° 46' 34.0" W
Climate Zone	A
Rain Zone	2
Ground Elevation (AMSL)	227.73 m / 747.2 ft

Link Information

Satellite Type	Geostationary
Mode	TO - Transmit-Only
Modulation	Digital
Satellite Arc	63° W to 63° West Longitude
Azimuth Range	145.1° to 145.1°
Corresponding Elevation Angles	35.8° / 35.8°
Antenna Centerline (AGL)	5.49 m / 18.0 ft

Antenna Information — Transmit - FCC32

Manufacturer		General Dynamics
Model		8.1 meter
Gain / Diameter		65.3 dBi / 8.1 m
3-dB / 15-dB Beamwidth		0.10° / 0.23°
Max Available RF Power	(dBW/4 kHz)	-32.0
	(dBW/MHz)	-8.0
Maximum EIRP	(dBW/4 kHz)	33.3
	(dBW/MHz)	57.3
Interference Objectives:	Long Term	-151.0 dBW/4 kHz 20%
	Short Term	-128.0 dBW/4 kHz 0.0025%

Frequency Information — Transmit 28.0 GHz

Emission / Frequency Range (MHz)	250MG7D / 27850.0 - 28350.0
Max Great Circle Coordination Distance	100.0 km / 62.1 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Coordination Values	**MONEE, IL**
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED
Latitude (NAD 83)	41° 28' 1.7" N
Longitude (NAD 83)	87° 46' 34.0" W
Ground Elevation (AMSL)	227.73 m / 747.2 ft
Antenna Centerline (AGL)	5.49 m / 18.0 ft
Antenna Model	General Dynamics 8.1 meter
Antenna Mode	Transmit 28.0 GHz
Interference Objectives: Long Term	-151.0 dBW/4 kHz 20%
Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-32.0 (dBW/4 kHz)

Transmit 28.0 GHz

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	131.69	-10.00	100.00
5	0.00	128.48	-10.00	100.00
10	0.00	125.07	-10.00	100.00
15	0.00	121.50	-10.00	100.00
20	0.00	117.81	-10.00	100.00
25	0.00	114.01	-10.00	100.00
30	0.00	110.14	-10.00	100.00
35	0.00	106.20	-10.00	100.00
40	0.00	102.21	-10.00	100.00
45	0.00	98.19	-10.00	100.00
50	0.00	94.15	-10.00	100.00
55	0.00	90.10	-10.00	100.00
60	0.00	86.05	-10.00	100.00
65	0.00	82.01	-10.00	100.00
70	0.31	77.94	-10.00	100.00
75	0.40	73.92	-10.00	100.00
80	0.40	69.96	-10.00	100.00
85	0.21	66.11	-10.00	100.00
90	0.21	62.30	-10.00	100.00
95	0.00	58.68	-10.00	100.00
100	0.00	55.11	-10.00	100.00
105	0.00	51.69	-10.00	100.00
110	0.00	48.46	-10.00	100.00
115	0.00	45.47	-9.44	100.00
120	0.00	42.77	-8.78	100.00
125	0.00	40.42	-8.17	100.00
130	0.00	38.49	-7.63	100.00
135	0.00	37.05	-7.22	100.00
140	0.00	36.15	-6.95	100.00
145	0.00	35.83	-6.86	100.00
150	0.00	36.12	-6.94	100.00
155	0.00	36.99	-7.20	100.00
160	0.00	38.41	-7.61	100.00
165	0.00	40.32	-8.14	100.00
170	0.00	42.65	-8.75	100.00
175	0.00	45.33	-9.41	100.00
180	0.00	48.31	-10.00	100.00
185	0.00	51.52	-10.00	100.00

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Coordination Values	**MONEE, IL**
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED
Latitude (NAD 83)	41° 28' 1.7" N
Longitude (NAD 83)	87° 46' 34.0" W
Ground Elevation (AMSL)	227.73 m / 747.2 ft
Antenna Centerline (AGL)	5.49 m / 18.0 ft
Antenna Model	General Dynamics 8.1 meter
Antenna Mode	Transmit 28.0 GHz
Interference Objectives: Long Term	-151.0 dBW/4 kHz 20%
Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-32.0 (dBW/4 kHz)

Transmit 28.0 GHz

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	54.93	-10.00	100.00
195	0.00	58.50	-10.00	100.00
200	0.00	62.19	-10.00	100.00
205	0.00	65.99	-10.00	100.00
210	0.00	69.86	-10.00	100.00
215	0.00	73.80	-10.00	100.00
220	0.00	77.79	-10.00	100.00
225	0.00	81.81	-10.00	100.00
230	0.00	85.85	-10.00	100.00
235	0.00	89.90	-10.00	100.00
240	0.00	93.95	-10.00	100.00
245	0.00	97.99	-10.00	100.00
250	0.00	102.01	-10.00	100.00
255	0.00	106.00	-10.00	100.00
260	0.00	109.94	-10.00	100.00
265	0.00	113.82	-10.00	100.00
270	0.00	117.62	-10.00	100.00
275	0.00	121.32	-10.00	100.00
280	0.00	124.89	-10.00	100.00
285	0.00	128.31	-10.00	100.00
290	0.00	131.54	-10.00	100.00
295	0.00	134.53	-10.00	100.00
300	0.00	137.23	-10.00	100.00
305	0.00	139.58	-10.00	100.00
310	0.00	141.51	-10.00	100.00
315	0.00	142.95	-10.00	100.00
320	0.00	143.85	-10.00	100.00
325	0.00	144.17	-10.00	100.00
330	0.00	143.88	-10.00	100.00
335	0.00	143.01	-10.00	100.00
340	0.00	141.59	-10.00	100.00
345	0.00	139.68	-10.00	100.00
350	0.00	137.35	-10.00	100.00
355	0.00	134.67	-10.00	100.00

5. Contact Information

For questions or information regarding the 28 GHz Frequency Coordination Report, please contact:

Contact person:	Joanna Lynch
Title:	Manager, Spectrum & Data Solutions
Company:	Comsearch
Address:	19700 Janelia Farm Blvd., Ashburn, VA 20147
Telephone:	703-726-5711
Fax:	703-726-5599
Email:	jlynch@comsearch.com
Web site:	www.comsearch.com

Ka-Band Earth Station – North Platte, NE

Frequency Coordination Report

28 GHz

Prepared on Behalf of
Hughes Network
Systems Limited

March 21, 2016

COMSEARCH®
A CommScope Company

Table of Contents

1. Summary of Results

On behalf of Hughes Network Systems, Comsearch performed a coordination notice for all existing and proposed terrestrial licenses within the coordination contours of their proposed Ka-Band earth station in North Platte, Nebraska, which will transmit at 28 GHz[1]. Prior-notification letters were sent to the licensees and a copy of the notification data is provided in section four of this report. The earth station coordination was finalized on March 18, 2016.

No objections were received from any of the incumbent 28 GHz licensees. Our notification to the LMDS incumbents was performed under the assumption that the earth station would be operating on a secondary basis to LMDS Block A operations and a contact at Hughes Network Systems has been provided in case any concerns may arise in the future.

2. 28 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in North Platte, Nebraska was prior-coordinated by Comsearch. A notification letter and datasheet for this earth station were sent to the following 28 GHz common carrier fixed microwave licensee on March 2, 2016. This licensee is authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
Verizon	Continental US

A notification letter and datasheet for the Ka-Band earth station in North Platte, Nebraska were also sent to the following 28 GHz local television transmission licensee on March 2, 2016. This licensee is authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
Information Super Station, LLC	Continental US

No objections were received from the common carrier or local television transmission service incumbents.

[1] The proposed earth station will operate in the 27.85 – 28.35 GHz portion of the Ka-Band.

3. 28 GHz LMDS Coordination

A Notification letter was sent to the following 28 GHz LMDS licensee on March 2, 2016. The proposed earth station will operate on frequencies that overlap Block A of the LMDS service. The total frequency allocation for Block A of the LMDS spectrum appears below.

Block A: 27.500-28.350 GHz
29.100-29.250 GHz
31.075-31.225 GHz

Since no active LMDS licensees were found within the coordination contour of the earth station, no LMDS coordination was needed.

4. Earth Station Coordination Data

This section presents the data pertinent to the proposed Ka-Band earth station in North Platte, Nebraska. This data was circulated to all incumbent licensees in the shared 28 GHz frequency ranges.

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Date:	02/25/2016
Job Number:	<PCNJobCode>

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	<PCNCallSign>
Licensee Code	HUNESY
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED

Site Information — NORTH PLATTE, NE

Venue Name	
Latitude (NAD 83)	41° 5' 24.2" N
Longitude (NAD 83)	100° 45' 10.6" W
Climate Zone	A
Rain Zone	2
Ground Elevation (AMSL)	858.5 m / 2816.6 ft

Link Information

Satellite Type	Geostationary
Mode	TO - Transmit-Only
Modulation	Digital
Satellite Arc	63° W to 63° West Longitude
Azimuth Range	130.3° to 130.3°
Corresponding Elevation Angles	29.0° / 29.0°
Antenna Centerline (AGL)	5.49 m / 18.0 ft

Antenna Information — Transmit - FCC32

Manufacturer		General Dynamics
Model		8.1 meter
Gain / Diameter		65.3 dBi / 8.1 m
3-dB / 15-dB Beamwidth		0.10° / 0.23°
Max Available RF Power	(dBW/4 kHz)	-32.0
	(dBW/MHz)	-8.0
Maximum EIRP	(dBW/4 kHz)	33.3
	(dBW/MHz)	57.3
Interference Objectives:	Long Term	-151.0 dBW/4 kHz 20%
	Short Term	-128.0 dBW/4 kHz 0.0025%

Frequency Information — Transmit 28.0 GHz

Emission / Frequency Range (MHz)	250MG7D / 27850.0 - 28350.0
Max Great Circle Coordination Distance	100.0 km / 62.1 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Coordination Values	**NORTH PLATTE, NE**
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED
Latitude (NAD 83)	41° 5' 24.2" N
Longitude (NAD 83)	100° 45' 10.6" W
Ground Elevation (AMSL)	858.5 m / 2816.6 ft
Antenna Centerline (AGL)	5.49 m / 18.0 ft
Antenna Model	General Dynamics 8.1 meter
Antenna Mode	Transmit 28.0 GHz
Interference Objectives: Long Term	-151.0 dBW/4 kHz 20%
Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-32.0 (dBW/4 kHz)

Transmit 28.0 GHz

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	124.48	-10.00	100.00
5	0.00	120.39	-10.00	100.00
10	0.00	116.21	-10.00	100.00
15	0.00	111.98	-10.00	100.00
20	0.00	107.69	-10.00	100.00
25	0.00	103.37	-10.00	100.00
30	0.00	99.02	-10.00	100.00
35	0.00	94.66	-10.00	100.00
40	0.00	90.28	-10.00	100.00
45	0.00	85.91	-10.00	100.00
50	0.00	81.55	-10.00	100.00
55	0.00	77.20	-10.00	100.00
60	0.00	72.87	-10.00	100.00
65	0.00	68.58	-10.00	100.00
70	0.00	64.34	-10.00	100.00
75	0.00	60.15	-10.00	100.00
80	0.00	56.05	-10.00	100.00
85	0.00	52.04	-10.00	100.00
90	0.00	48.17	-10.00	100.00
95	0.00	44.46	-9.20	100.00
100	0.00	40.96	-8.31	100.00
105	0.00	37.74	-7.42	100.00
110	0.30	34.64	-6.49	100.00
115	0.40	32.11	-5.67	100.00
120	0.60	30.05	-4.95	100.00
125	0.90	28.54	-4.38	100.00
130	0.89	28.08	-4.21	100.00
135	0.72	28.61	-4.41	100.00
140	0.94	29.53	-4.76	100.00
145	1.38	30.98	-5.28	100.00
150	1.65	33.22	-6.03	100.00
155	1.63	36.18	-6.96	100.00
160	1.45	39.60	-7.94	100.00
165	1.78	42.99	-8.83	100.00
170	2.01	46.68	-9.73	100.00
175	1.53	50.87	-10.00	100.00
180	1.58	54.93	-10.00	100.00
185	1.47	59.14	-10.00	100.00

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Coordination Values	**NORTH PLATTE, NE**
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED
Latitude (NAD 83)	41° 5' 24.2" N
Longitude (NAD 83)	100° 45' 10.6" W
Ground Elevation (AMSL)	858.5 m / 2816.6 ft
Antenna Centerline (AGL)	5.49 m / 18.0 ft
Antenna Model	General Dynamics 8.1 meter
Antenna Mode	Transmit 28.0 GHz
Interference Objectives: Long Term	-151.0 dBW/4 kHz 20%
Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-32.0 (dBW/4 kHz)

Transmit 28.0 GHz

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
190	1.67	63.34	-10.00	100.00
195	1.74	67.65	-10.00	100.00
200	1.88	71.99	-10.00	100.00
205	2.13	76.36	-10.00	100.00
210	2.08	80.80	-10.00	100.00
215	1.66	85.27	-10.00	100.00
220	1.34	89.71	-10.00	100.00
225	1.83	94.16	-10.00	100.00
230	1.54	98.58	-10.00	100.00
235	1.16	102.95	-10.00	100.00
240	0.76	107.26	-10.00	100.00
245	0.56	111.54	-10.00	100.00
250	0.61	115.83	-10.00	100.00
255	0.40	119.98	-10.00	100.00
260	0.32	124.07	-10.00	100.00
265	0.25	128.07	-10.00	100.00
270	0.00	131.83	-10.00	100.00
275	0.00	135.54	-10.00	100.00
280	0.00	139.04	-10.00	100.00
285	0.00	142.26	-10.00	100.00
290	0.00	145.12	-10.00	100.00
295	0.00	147.54	-10.00	100.00
300	0.00	149.39	-10.00	100.00
305	0.00	150.58	-10.00	100.00
310	0.00	151.02	-10.00	100.00
315	0.00	150.68	-10.00	100.00
320	0.00	149.59	-10.00	100.00
325	0.00	147.81	-10.00	100.00
330	0.00	145.46	-10.00	100.00
335	0.00	142.65	-10.00	100.00
340	0.00	139.47	-10.00	100.00
345	0.00	136.01	-10.00	100.00
350	0.00	132.33	-10.00	100.00
355	0.00	128.47	-10.00	100.00

5. Contact Information

For questions or information regarding the 28 GHz Frequency Coordination Report, please contact:

Contact person:	Joanna Lynch
Title:	Manager, Spectrum & Data Solutions
Company:	Comsearch
Address:	19700 Janelia Farm Blvd., Ashburn, VA 20147
Telephone:	703-726-5711
Fax:	703-726-5599
Email:	jlynch@comsearch.com
Web site:	www.comsearch.com

Ka-Band Earth Station – Richardson, CA

Frequency Coordination Report

28 GHz

Prepared on Behalf of
Hughes Network
Systems Limited

March 21, 2016

COMSEARCH®
A CommScope Company

Table of Contents

1. Summary of Results

On behalf of Hughes Network Systems, Comsearch performed a coordination notice for all existing and proposed terrestrial licenses within the coordination contours of their proposed Ka-Band earth station in Riverside, California, which will transmit at 28 GHz[1]. Prior-notification letters were sent to the licensees and a copy of the notification data is provided in section four of this report. The earth station coordination was finalized on March 18, 2016.

No objections were received from any of the incumbent 28 GHz licensees. Our notification to the LMDS incumbents was performed under the assumption that the earth station would be operating on a secondary basis to LMDS Block A operations and a contact at Hughes Network Systems has been provided in case any concerns may arise in the future.

2. 28 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in Riverside, California was prior-coordinated by Comsearch. A notification letter and datasheet for this earth station were sent to the following 28 GHz common carrier fixed microwave licensees on March 2, 2016. These licensees are authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a statewide or nationwide basis.

Licensee	Authorized Geographic Area
Verizon	Continental US
M.U.T. Licensing	Statewide: California

A notification letter and datasheet for the Ka-Band earth station in Riverside, California were also sent to the following 28 GHz local television transmission licensee on March 2, 2016. This licensee is authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
Information Super Station, LLC	Continental US

No objections were received from the common carrier or local television transmission service incumbents.

[1] The proposed earth station will operate in the 27.85 – 28.35 GHz portion of the Ka-Band.

3. 28 GHz LMDS Coordination

A Notification letter was sent to the following 28 GHz LMDS licensees on March 2, 2016. The proposed earth station will operate on frequencies that overlap Block A of the LMDS service. The total frequency allocation for Block A of the LMDS spectrum appears below.

Block A: 27.500-28.350 GHz
29.100-29.250 GHz
31.075-31.225 GHz

Licensee	Market	Market Name
Nextlink/XO	BTA262[2]	Los Angeles, CA
T-Mobile[3]	BTA262	Los Angeles, CA
TelePacific Communications[4]	BTA262	Los Angeles, CA
Towerstream Corporation[5]	BTA262	Los Angeles, CA
EchoStar	BTA402	San Diego, CA
Nextlink/XO[6]	BTA402	San Diego, CA

No objections were received from the LMDS incumbents.

[2] The proposed earth station will be located inside BTA262.

[3] T-Mobile has acquired spectrum from XO/Nextlink in the Los Angeles, CA Basic Trading Area (BTA).

[4] TelePacific Communications is leasing spectrum from XO/Nextlink in the Los Angeles, CA BTA.

[5] Towerstream is leasing spectrum from XO/Nextlink in the Los Angeles, CA BTA.

[6] Nextlink/XO is leasing spectrum from EchoStar in the San Diego, CA BTA.

4. Earth Station Coordination Data

This section presents the data pertinent to the proposed Ka-Band earth station in Riverside, California. This data was circulated to all incumbent licensees in the shared 28 GHz frequency ranges.

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Date:	02/25/2016
Job Number:	<PCNJobCode>

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	<PCNCallSign>
Licensee Code	HUNESY
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED

Site Information — RIVERSIDE, CA

Venue Name	
Latitude (NAD 83)	33° 47' 43.5" N
Longitude (NAD 83)	117° 5' 26.1" W
Climate Zone	A
Rain Zone	4
Ground Elevation (AMSL)	578.32 m / 1897.4 ft

Link Information

Satellite Type	Geostationary
Mode	TO - Transmit-Only
Modulation	Digital
Satellite Arc	63° W to 63° West Longitude
Azimuth Range	111.9° to 111.9°
Corresponding Elevation Angles	21.1° / 21.1°
Antenna Centerline (AGL)	5.49 m / 18.0 ft

Antenna Information — Transmit - FCC32

Manufacturer		General Dynamics
Model		8.1 meter
Gain / Diameter		65.3 dBi / 8.1 m
3-dB / 15-dB Beamwidth		0.10° / 0.23°
Max Available RF Power	(dBW/4 kHz)	-32.0
	(dBW/MHz)	-8.0
Maximum EIRP	(dBW/4 kHz)	33.3
	(dBW/MHz)	57.3
Interference Objectives:	Long Term	-151.0 dBW/4 kHz 20%
	Short Term	-128.0 dBW/4 kHz 0.0025%

Frequency Information — Transmit 28.0 GHz

Emission / Frequency Range (MHz)	250MG7D / 27850.0 - 28350.0
Max Great Circle Coordination Distance	100.0 km / 62.1 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Coordination Values	**RIVERSIDE, CA**
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED
Latitude (NAD 83)	33° 47' 43.5" N
Longitude (NAD 83)	117° 5' 26.1" W
Ground Elevation (AMSL)	578.32 m / 1897.4 ft
Antenna Centerline (AGL)	5.49 m / 18.0 ft
Antenna Model	General Dynamics 8.1 meter
Antenna Mode	Transmit 28.0 GHz
Interference Objectives: Long Term	-151.0 dBW/4 kHz 20%
Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-32.0 (dBW/4 kHz)

Transmit 28.0 GHz

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	110.41	-10.00	100.00
5	0.72	105.86	-10.00	100.00
10	2.17	101.29	-10.00	100.00
15	1.68	96.55	-10.00	100.00
20	2.15	91.84	-10.00	100.00
25	2.65	87.10	-10.00	100.00
30	3.13	82.33	-10.00	100.00
35	2.93	77.60	-10.00	100.00
40	2.99	72.86	-10.00	100.00
45	2.93	68.15	-10.00	100.00
50	2.77	63.47	-10.00	100.00
55	2.34	58.89	-10.00	100.00
60	2.41	54.26	-10.00	100.00
65	3.21	49.47	-10.00	100.00
70	3.08	44.97	-9.32	100.00
75	2.85	40.60	-8.21	100.00
80	3.40	36.04	-6.92	100.00
85	3.02	32.04	-5.64	100.00
90	3.07	28.09	-4.21	100.00
95	2.23	25.12	-3.00	100.00
100	2.62	21.85	-1.49	100.00
105	3.19	19.13	-0.04	100.00
110	3.48	17.68	0.81	100.00
115	3.43	17.88	0.69	100.00
120	3.52	19.25	-0.11	100.00
125	3.54	21.73	-1.42	100.00
130	3.39	25.05	-2.97	100.00
135	3.52	28.68	-4.44	100.00
140	3.82	32.56	-5.82	100.00
145	3.43	36.99	-7.20	100.00
150	3.76	41.26	-8.39	100.00
155	3.71	45.78	-9.52	100.00
160	4.67	50.12	-10.00	100.00
165	5.54	54.61	-10.00	100.00
170	6.34	59.22	-10.00	100.00
175	5.75	64.09	-10.00	100.00
180	5.95	68.85	-10.00	100.00
185	5.32	73.71	-10.00	100.00

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Coordination Values	**RIVERSIDE, CA**
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED
Latitude (NAD 83)	33° 47' 43.5" N
Longitude (NAD 83)	117° 5' 26.1" W
Ground Elevation (AMSL)	578.32 m / 1897.4 ft
Antenna Centerline (AGL)	5.49 m / 18.0 ft
Antenna Model	General Dynamics 8.1 meter
Antenna Mode	Transmit 28.0 GHz
Interference Objectives: Long Term	-151.0 dBW/4 kHz 20%
Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-32.0 (dBW/4 kHz)

Transmit 28.0 GHz

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
190	4.83	78.54	-10.00	100.00
195	6.00	83.30	-10.00	100.00
200	7.48	88.11	-10.00	100.00
205	7.62	92.98	-10.00	100.00
210	6.46	97.80	-10.00	100.00
215	6.25	102.62	-10.00	100.00
220	6.15	107.43	-10.00	100.00
225	5.91	112.21	-10.00	100.00
230	6.33	117.06	-10.00	100.00
235	6.02	121.79	-10.00	100.00
240	5.97	126.53	-10.00	100.00
245	5.69	131.17	-10.00	100.00
250	5.29	135.71	-10.00	100.00
255	4.96	140.17	-10.00	100.00
260	4.52	144.44	-10.00	100.00
265	4.79	148.85	-10.00	100.00
270	4.63	152.83	-10.00	100.00
275	4.64	156.58	-10.00	100.00
280	4.36	159.57	-10.00	100.00
285	3.74	161.38	-10.00	100.00
290	2.71	161.56	-10.00	100.00
295	2.11	160.82	-10.00	100.00
300	0.62	158.10	-10.00	100.00
305	0.00	155.38	-10.00	100.00
310	0.00	152.53	-10.00	100.00
315	0.00	149.17	-10.00	100.00
320	0.00	145.44	-10.00	100.00
325	0.00	141.46	-10.00	100.00
330	0.00	137.29	-10.00	100.00
335	0.00	132.99	-10.00	100.00
340	0.00	128.59	-10.00	100.00
345	0.00	124.12	-10.00	100.00
350	0.00	119.59	-10.00	100.00
355	0.00	115.01	-10.00	100.00

5. Contact Information

For questions or information regarding the 28 GHz Frequency Coordination Report, please contact:

Contact person:	Joanna Lynch
Title:	Manager, Spectrum & Data Solutions
Company:	Comsearch
Address:	19700 Janelia Farm Blvd., Ashburn, VA 20147
Telephone:	703-726-5711
Fax:	703-726-5599
Email:	jlynch@comsearch.com
Web site:	www.comsearch.com

Ka-Band Earth Station – Spokane, WA

Frequency Coordination Report

28 GHz

Prepared on Behalf of
Hughes Network
Systems Limited

March 21, 2016

COMSEARCH®
A CommScope Company

Table of Contents

1. Summary of Results

On behalf of Hughes Network Systems, Comsearch performed a coordination notice for all existing and proposed terrestrial licenses within the coordination contours of their proposed Ka-Band earth station in Spokane, Washington, which will transmit at 28 GHz[1]. Prior-notification letters were sent to the licensees and a copy of the notification data is provided in section four of this report. The earth station coordination was finalized on March 18, 2016.

No objections were received from any of the incumbent 28 GHz licensees. Our notification to the LMDS incumbents was performed under the assumption that the earth station would be operating on a secondary basis to LMDS Block A operations and a contact at Hughes Network Systems has been provided in case any concerns may arise in the future.

2. 28 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in Spokane, Washington was prior-coordinated by Comsearch. A notification letter and datasheet for this earth station were sent to the following 28 GHz common carrier fixed microwave licensee on March 2, 2016. This licensee is authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
Verizon	Continental US

A notification letter and datasheet for the Ka-Band earth station in Spokane, Washington were also sent to the following 28 GHz local television transmission licensee on March 2, 2016. This licensee is authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
Information Super Station, LLC	Continental US

No objections were received from the common carrier or local television transmission service incumbents.

[1] The proposed earth station will operate in the 27.85 – 28.35 GHz portion of the Ka-Band.

3. 28 GHz LMDS Coordination

A Notification letter was sent to the following 28 GHz LMDS licensee on March 2, 2016. The proposed earth station will operate on frequencies that overlap Block A of the LMDS service. The total frequency allocation for Block A of the LMDS spectrum appears below.

Block A: 27.500-28.350 GHz
29.100-29.250 GHz
31.075-31.225 GHz

Since no active LMDS licensees were found within the coordination contour of the earth station, no LMDS coordination was needed.

4. Earth Station Coordination Data

This section presents the data pertinent to the proposed Ka-Band earth station in Spokane, Washington. This data was circulated to all incumbent licensees in the shared 28 GHz frequency ranges.

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Date:	02/25/2016
Job Number:	<PCNJobCode>

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	<PCNCallSign>
Licensee Code	HUNESY
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED

Site Information — SPOKANE, WA

Venue Name	
Latitude (NAD 83)	47° 35' 31.5" N
Longitude (NAD 83)	117° 33' 1.4" W
Climate Zone	A
Rain Zone	5
Ground Elevation (AMSL)	740.83 m / 2430.5 ft

Link Information

Satellite Type	Geostationary
Mode	TO - Transmit-Only
Modulation	Digital
Satellite Arc	63° W to 63° West Longitude
Azimuth Range	117.7° to 117.7°
Corresponding Elevation Angles	14.6° / 14.6°
Antenna Centerline (AGL)	5.49 m / 18.0 ft

Antenna Information — Transmit - FCC32

Manufacturer		General Dynamics
Model		5.6 Meter
Gain / Diameter		62.0 dBi / 5.6 m
3-dB / 15-dB Beamwidth		0.14° / 0.32°
Max Available RF Power	(dBW/4 kHz)	-32.0
	(dBW/MHz)	-8.0
Maximum EIRP	(dBW/4 kHz)	30.0
	(dBW/MHz)	54.0
Interference Objectives:	Long Term	-151.0 dBW/4 kHz 20%
	Short Term	-128.0 dBW/4 kHz 0.0025%

Frequency Information — Transmit 28.0 GHz

Emission / Frequency Range (MHz)	250MG7D / 27850.0 - 28350.0
Max Great Circle Coordination Distance	100.0 km / 62.1 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Coordination Values	**SPOKANE, WA**
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED
Latitude (NAD 83)	47° 35' 31.5" N
Longitude (NAD 83)	117° 33' 1.4" W
Ground Elevation (AMSL)	740.83 m / 2430.5 ft
Antenna Centerline (AGL)	5.49 m / 18.0 ft
Antenna Model	General Dynamics 5.6 meter
Antenna Mode	Transmit 28.0 GHz
Interference Objectives: Long Term	-151.0 dBW/4 kHz 20%
Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-32.0 (dBW/4 kHz)

Transmit 28.0 GHz

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	116.76	-10.00	100.00
5	0.00	111.96	-10.00	100.00
10	0.00	107.14	-10.00	100.00
15	0.00	102.31	-10.00	100.00
20	0.00	97.48	-10.00	100.00
25	0.00	92.64	-10.00	100.00
30	0.00	87.81	-10.00	100.00
35	0.00	82.97	-10.00	100.00
40	0.00	78.14	-10.00	100.00
45	0.00	73.31	-10.00	100.00
50	0.00	68.49	-10.00	100.00
55	0.00	63.68	-10.00	100.00
60	0.00	58.90	-10.00	100.00
65	0.00	54.13	-10.00	100.00
70	0.00	49.40	-10.00	100.00
75	0.00	44.70	-9.26	100.00
80	0.00	40.07	-8.07	100.00
85	0.00	35.51	-6.76	100.00
90	0.00	31.07	-5.31	100.00
95	0.00	26.81	-3.71	100.00
100	0.00	22.83	-1.96	100.00
105	0.00	19.29	-0.13	100.00
110	0.00	16.49	1.57	100.00
115	0.00	14.86	2.70	100.00
120	0.00	14.78	2.76	100.00
125	0.00	16.28	1.71	100.00
130	0.00	18.99	0.04	100.00
135	0.00	22.47	-1.79	100.00
140	0.43	26.20	-3.46	100.00
145	0.91	30.28	-5.03	100.00
150	1.25	34.65	-6.49	100.00
155	1.65	39.15	-7.82	100.00
160	1.39	43.91	-9.06	100.00
165	0.83	48.77	-10.00	100.00
170	0.74	53.55	-10.00	100.00
175	1.02	58.29	-10.00	100.00
180	1.31	63.07	-10.00	100.00
185	1.68	67.87	-10.00	100.00

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

Coordination Values	**SPOKANE, WA**
Licensee Name	HUGHES NETWORK SYSTEMS LIMITED
Latitude (NAD 83)	47° 35' 31.5" N
Longitude (NAD 83)	117° 33' 1.4" W
Ground Elevation (AMSL)	740.83 m / 2430.5 ft
Antenna Centerline (AGL)	5.49 m / 18.0 ft
Antenna Model	General Dynamics 5.6 meter
Antenna Mode	Transmit 28.0 GHz
Interference Objectives: Long Term	-151.0 dBW/4 kHz 20%
Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-32.0 (dBW/4 kHz)

Transmit 28.0 GHz

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
190	1.59	72.74	-10.00	100.00
195	1.53	77.60	-10.00	100.00
200	1.66	82.47	-10.00	100.00
205	1.60	87.34	-10.00	100.00
210	1.50	92.21	-10.00	100.00
215	1.12	97.07	-10.00	100.00
220	0.75	101.90	-10.00	100.00
225	0.76	106.75	-10.00	100.00
230	0.00	111.51	-10.00	100.00
235	0.00	116.32	-10.00	100.00
240	0.67	121.21	-10.00	100.00
245	0.54	125.97	-10.00	100.00
250	0.39	130.69	-10.00	100.00
255	0.00	135.30	-10.00	100.00
260	0.00	139.93	-10.00	100.00
265	0.00	144.49	-10.00	100.00
270	0.00	148.93	-10.00	100.00
275	0.00	153.19	-10.00	100.00
280	0.00	157.17	-10.00	100.00
285	0.00	160.71	-10.00	100.00
290	0.00	163.51	-10.00	100.00
295	0.00	165.14	-10.00	100.00
300	0.00	165.22	-10.00	100.00
305	0.00	163.72	-10.00	100.00
310	0.00	161.01	-10.00	100.00
315	0.00	157.53	-10.00	100.00
320	0.00	153.57	-10.00	100.00
325	0.00	149.33	-10.00	100.00
330	0.00	144.91	-10.00	100.00
335	0.00	140.36	-10.00	100.00
340	0.00	135.73	-10.00	100.00
345	0.00	131.04	-10.00	100.00
350	0.00	126.31	-10.00	100.00
355	0.00	121.55	-10.00	100.00

5. Contact Information

For questions or information regarding the 28 GHz Frequency Coordination Report, please contact:

Contact person:	Joanna Lynch
Title:	Manager, Spectrum & Data Solutions
Company:	Comsearch
Address:	19700 Janelia Farm Blvd., Ashburn, VA 20147
Telephone:	703-726-5711
Fax:	703-726-5599
Email:	jlynch@comsearch.com
Web site:	www.comsearch.com