

Ka-Band Earth Station – Laredo, TX

Frequency Coordination Report

28 GHz



Prepared on Behalf of
SES AMERICOM, INC.

December 9, 2022





Table of Contents

1. Summary of Results	- 1 -
2. 28 GHz Common Carrier, LTTS and LMDS Coordination	- 1 -
3. 28 GHz UMFUS Coordination	- 2 -
4. Earth Station Coordination Data	- 3 -
5. Contact Information	- 7 -



1. Summary of Results

On behalf of SES AMERICOM, INC., Comsearch performed a coordination notice under Section 25.203(c) and Section 25.136(a)(4) of the FCC's rules for all existing and proposed terrestrial licenses within the coordination contours of their proposed temporary Ka-Band earth station in Laredo, TX, which will transmit at 28 GHz¹. 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 December 9, 2022.

No objections were received from any of the incumbent 28 GHz licensees.

2. 28 GHz Common Carrier, LTTS and LMDS Coordination

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

Licensee	Authorized Geographic Area
None Found	

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

Licensee	Authorized Geographic Area
None Found	

A notification letter and datasheets for the temporary Ka-Band earth station in Laredo, TX were also sent to the following 29 GHz LMDS licensee. This licensee is authorized to operate fixed operations from 29.1 – 29.25 GHz on a local basis.

Licensee	Authorized Geographic Area
GeoLinks	Market Based

No objections were received from the common carrier, LTTS or LMDS incumbents.

¹ The proposed earth station will operate in the 27.5 – 28.35, 28.6 – 29.3 GHz portion of the Ka-Band.

3. 28 GHz UMFUS Coordination

There were three 28 GHz UMFUS licensees identified within the coordination distance of the proposed temporary earth station that operate in the 29300 – 30000 MHz range. The proposed earth station will operate on frequencies that overlap Channel L1 & L2 of the UMFUS service. The total frequency allocation for Channels L1 & L2 of the UMFUS spectrum appears below.

Channel: **L1** 27.500 - 27.925 GHz
 L2 27.925 - 28.350 GHz

Licensee	Authorized Geographic Area
McBride Spectrum Partners	Market Based
T-Mobile	Market Based
Verizon	Market Based

No objections were received from the UMFUS incumbents.



4. Earth Station Coordination Data

This section presents the data pertinent to the proposed temporary Ka-Band earth station in Laredo, TX. This data was circulated to all incumbent licensees in the shared 27.5 - 29.3 GHz frequency ranges.

Job Number: 221104COMSGE03

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E170143
Licensee Code P3210
Licensee Name SES Americom, Inc.

Site Information

LAREDO, TX

Venue Name
Latitude (NAD 83) 27° 41' 25.7" N
Longitude (NAD 83) 99° 26' 59.0" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 198.06 m / 649.8 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 31° W to 168° West Longitude
Azimuth Range 100.4° to 259.7°
Corresponding Elevation Angles 10.4° / 10.3°
Antenna Centerline (AGL) 3.66 m / 12.0 ft

Antenna Information

Receive - FCC32

Transmit - FCC32

Manufacturer
Model
Gain / Diameter
3-dB / 15-dB Beamwidth

GD Satcom
6.3 meter Ka
59.1 dBi / 6.3 m
0.16° / 0.32°

GD Satcom
6.3 meter Ka
62.9 dBi / 6.3 m
0.11° / 0.22°

Max Available RF Power (dBW/4 kHz)
(dBW/MHz)

-38.8
-14.8

Maximum EIRP (dBW/4 kHz)
(dBW/MHz)

24.1
48.1

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

-151.0 dBW/4 kHz 20%
-128.0 dBW/4 kHz 0.0025%

Frequency Information

Receive 18.0 GHz

Transmit 28.0 GHz

Emission / Frequency Range (MHz)
NON - 250MG7W / 18800.0 - 19300.0
NON - 250MG7W / 19400.0 - 19600.0

NON - 250MG7W / 27500.0 - 28350.0
NON - 250MG7W / 28600.0 - 29300.0

Max Great Circle Coordination Distance 208.3 km / 129.4 mi
Precipitation Scatter Contour Radius 100.0 km / 62.1 mi

100.0 km / 62.1 mi
100.0 km / 62.1 mi



SES AMERICOM, INC.
Ka-Band Earth Station – Laredo, TX
Frequency Coordination Report
28 GHz

Coordination Values

LAREDO, TX			
Licensee Name	SES Americom, Inc.		
Latitude (NAD 83)	27° 41' 25.7" N		
Longitude (NAD 83)	99° 26' 59.0" W		
Ground Elevation (AMSL)	198.06 m / 649.8 ft		
Antenna Centerline (AGL)	3.66 m / 12.0 ft		
Antenna Model	GD Satcom 6.3 meter		
Antenna Mode	Receive 18.0 GHz		Transmit 28.0 GHz
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz 20%
Short Term	-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power		-38.8 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	1.63	100.23	-10.00	100.00	-10.00	100.00
5	1.63	95.34	-10.00	100.00	-10.00	100.00
10	1.51	90.40	-10.00	100.00	-10.00	100.00
15	1.49	85.46	-10.00	100.00	-10.00	100.00
20	1.00	80.53	-10.00	100.00	-10.00	100.00
25	0.80	75.61	-10.00	101.51	-10.00	100.00
30	0.26	70.72	-10.00	131.19	-10.00	100.00
35	0.22	65.82	-10.00	134.75	-10.00	100.00
40	0.34	60.90	-10.00	126.18	-10.00	100.00
45	0.36	56.01	-10.00	124.48	-10.00	100.00
50	0.25	51.14	-10.00	132.28	-10.00	100.00
55	0.23	46.29	-9.64	134.48	-9.64	100.00
60	0.00	41.50	-8.45	140.52	-8.45	100.00
65	0.00	36.71	-7.12	144.39	-7.12	100.00
70	0.00	31.98	-5.62	148.93	-5.62	100.00
75	0.00	27.33	-3.91	154.31	-3.91	100.00
80	0.00	22.81	-1.95	161.26	-1.95	100.00
85	0.00	18.53	0.30	168.90	0.30	100.00
90	0.00	14.69	2.83	177.68	2.83	100.00
95	0.00	11.73	5.27	186.42	5.27	100.00
100	0.00	10.43	6.54	208.27	6.54	100.00
105	0.00	11.39	5.59	187.59	5.59	100.00
110	0.00	14.14	3.24	179.15	3.24	100.00
115	0.00	17.87	0.69	170.24	0.69	100.00
120	0.00	22.08	-1.60	162.45	-1.60	100.00
125	0.00	26.29	-3.50	155.67	-3.50	100.00
130	0.00	30.43	-5.08	150.60	-5.08	100.00
135	0.00	34.47	-6.44	146.44	-6.44	100.00
140	0.00	38.38	-7.60	142.97	-7.60	100.00
145	0.00	42.12	-8.61	140.05	-8.61	100.00
150	0.00	45.66	-9.49	137.60	-9.49	100.00
155	0.00	48.91	-10.00	136.18	-10.00	100.00
160	0.00	51.80	-10.00	136.18	-10.00	100.00
165	0.00	54.24	-10.00	136.18	-10.00	100.00
170	0.26	55.87	-10.00	131.17	-10.00	100.00
175	0.32	56.96	-10.00	127.21	-10.00	100.00
180	0.34	57.33	-10.00	125.69	-10.00	100.00
185	0.40	56.89	-10.00	121.83	-10.00	100.00

Coordination Values		LAREDO, TX			
Licensee Name		SES Americom, Inc.			
Latitude (NAD 83)		27° 41' 25.7" N			
Longitude (NAD 83)		99° 26' 59.0" W			
Ground Elevation (AMSL)		198.06 m / 649.8 ft			
Antenna Centerline (AGL)		3.66 m / 12.0 ft			
Antenna Model		GD Satcom 6.3 meter			
Antenna Mode		Receive 18.0 GHz		Transmit 28.0 GHz	
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz	20%
	Short Term	-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%
Max Available RF Power		-38.8 (dBW/4 kHz)			

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.46	55.69	-10.00	116.95	-10.00	100.00
195	0.46	53.88	-10.00	117.02	-10.00	100.00
200	0.62	51.37	-10.00	109.12	-10.00	100.00
205	0.86	48.35	-10.00	100.00	-10.00	100.00
210	1.14	44.96	-9.32	100.00	-9.32	100.00
215	1.06	41.52	-8.46	100.00	-8.46	100.00
220	0.76	37.96	-7.48	109.56	-7.48	100.00
225	0.85	34.02	-6.29	108.81	-6.29	100.00
230	0.67	30.08	-4.96	120.14	-4.96	100.00
235	0.65	25.96	-3.36	125.30	-3.36	100.00
240	0.60	21.77	-1.45	131.65	-1.45	100.00
245	0.56	17.55	0.89	140.58	0.89	100.00
250	0.54	13.72	3.57	150.46	3.57	100.00
255	0.51	10.86	6.11	161.72	6.11	100.00
260	0.62	9.72	7.30	186.45	7.30	100.00
265	0.55	11.14	5.83	158.81	5.83	100.00
270	0.55	14.21	3.19	148.89	3.19	100.00
275	0.58	18.12	0.54	138.54	0.54	100.00
280	0.72	22.42	-1.77	126.49	-1.77	100.00
285	0.88	26.94	-3.76	114.26	-3.76	100.00
290	1.33	31.53	-5.47	100.00	-5.47	100.00
295	1.40	36.32	-7.00	100.00	-7.00	100.00
300	1.39	41.16	-8.36	100.00	-8.36	100.00
305	1.36	46.04	-9.58	100.00	-9.58	100.00
310	1.10	50.96	-10.00	100.00	-10.00	100.00
315	0.95	55.88	-10.00	100.00	-10.00	100.00
320	0.92	60.79	-10.00	100.00	-10.00	100.00
325	1.02	65.70	-10.00	100.00	-10.00	100.00
330	0.98	70.62	-10.00	100.00	-10.00	100.00
335	0.87	75.55	-10.00	100.00	-10.00	100.00
340	1.33	80.47	-10.00	100.00	-10.00	100.00
345	1.10	85.41	-10.00	100.00	-10.00	100.00
350	1.01	90.34	-10.00	100.00	-10.00	100.00
355	1.39	95.28	-10.00	100.00	-10.00	100.00



5. Contact Information

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

Contact person:	Gary Edwards
Title:	Senior Manager, Satellite Services
Company:	Comsearch
Address:	21515 Ridgetop Circle, Suite 300, Sterling, VA 20166
Telephone:	703-726-5662
Fax:	703-726-5599
Email:	GEdwards@Comsearch.com
Web site:	www.comsearch.com

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
SES Americom, Inc.
LAREDO, TX
Satellite Earth Station

Prepared By:
COMSEARCH
21515 Ridgetop Circle, Suite 300
Sterling, VA 20166
December 07, 2022

TABLE OF CONTENTS

1. CONCLUSIONS	3
2. SUMMARY OF RESULTS	4
3. SUPPLEMENTAL SHOWING	5
4. EARTH STATION COORDINATION DATA.....	6
5. CERTIFICATION.....	10

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

A number of great circle interference cases were identified during the interference study of the proposed earth station. Each of the cases, which exceeded the interference objective on a line-of-sight basis, was profiled and the propagation losses estimated using NBS TN101 (Revised) techniques. The losses were found to be sufficient to reduce the signal levels to acceptable magnitudes in every case.

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 11/04/2022.

Company

Gtek Computers and Wireless, LLC
Laredo, City of
New Cingular Wireless PCS LLC - S Texas
Olympic Wireless, LLC
Riviera Cellular & Telecommunications
Sprintcom, Inc
T-Mobile License LLC
Union Pacific Railroad Company

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: 12/07/2022
Job Number: 221104COMSGE03

Administrative Information

Status: ENGINEER PROPOSAL
Call Sign: E170143
Licensee Code: P3210
Licensee Name: SES Americom, Inc.

Site Information

LAREDO, TX

Venue Name
Latitude (NAD 83): 27° 41' 25.7" N
Longitude (NAD 83): 99° 26' 59.0" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 198.06 m / 649.8 ft

Link Information

Satellite Type: Geostationary
Mode: TR - Transmit-Receive
Modulation: Digital
Satellite Arc: 31° W to 168° West Longitude
Azimuth Range: 100.4° to 259.7°
Corresponding Elevation Angles: 10.4° / 10.3°
Antenna Centerline (AGL): 3.66 m / 12.0 ft

Antenna Information

Receive - FCC32

Transmit - FCC32

Manufacturer	GD Satcom	GD Satcom
Model	6.3 meter Ka	6.3 meter Ka
Gain / Diameter	59.1 dBi / 6.3 m	62.9 dBi / 6.3 m
3-dB / 15-dB Beamwidth	0.16° / 0.32°	0.11° / 0.22°
Max Available RF Power (dBW/4 kHz)	-38.8	-38.8
(dBW/MHz)	-14.8	-14.8
Maximum EIRP (dBW/4 kHz)	24.1	24.1
(dBW/MHz)	48.1	48.1
Interference Objectives:	Long Term	-156.0 dBW/MHz 20%
	Short Term	-146.0 dBW/MHz 0.01%
		-151.0 dBW/4 kHz 20%
		-128.0 dBW/4 kHz 0.0025%

Frequency Information

Receive 18.0 GHz

Transmit 28.0 GHz

Emission / Frequency Range (MHz)	N0N - 250MG7W / 18800.0 - 19300.0	N0N - 250MG7W / 27500.0 - 28350.0
	N0N - 25M0G7W / 19400.0 - 19600.0	N0N - 25M0G7W / 28600.0 - 29300.0
Max Great Circle Coordination Distance	208.3 km / 129.4 mi	100.0 km / 62.1 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

LAREDO, TX

Licensee Name SES Americom, Inc.
Latitude (NAD 83) 27° 41' 25.7" N
Longitude (NAD 83) 99° 26' 59.0" W
Ground Elevation (AMSL) 198.06 m / 649.8 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
Antenna Model GD Satcom 6.3 meter
Antenna Mode Receive 18.0 GHz Transmit 28.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20% -151.0 dBW/4 kHz 20%
Short Term -146.0 dBW/MHz 0.01% -128.0 dBW/4 kHz 0.0025%
Max Available RF Power -38.8 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	1.63	100.23	-10.00	100.00	-10.00	100.00
5	1.63	95.34	-10.00	100.00	-10.00	100.00
10	1.51	90.40	-10.00	100.00	-10.00	100.00
15	1.49	85.46	-10.00	100.00	-10.00	100.00
20	1.00	80.53	-10.00	100.00	-10.00	100.00
25	0.80	75.61	-10.00	101.51	-10.00	100.00
30	0.26	70.72	-10.00	131.19	-10.00	100.00
35	0.22	65.82	-10.00	134.75	-10.00	100.00
40	0.34	60.90	-10.00	126.18	-10.00	100.00
45	0.36	56.01	-10.00	124.48	-10.00	100.00
50	0.25	51.14	-10.00	132.28	-10.00	100.00
55	0.23	46.29	-9.64	134.48	-9.64	100.00
60	0.00	41.50	-8.45	140.52	-8.45	100.00
65	0.00	36.71	-7.12	144.39	-7.12	100.00
70	0.00	31.98	-5.62	148.93	-5.62	100.00
75	0.00	27.33	-3.91	154.31	-3.91	100.00
80	0.00	22.81	-1.95	161.26	-1.95	100.00
85	0.00	18.53	0.30	168.90	0.30	100.00
90	0.00	14.69	2.83	177.68	2.83	100.00
95	0.00	11.73	5.27	186.42	5.27	100.00
100	0.00	10.43	6.54	208.27	6.54	100.00
105	0.00	11.39	5.59	187.59	5.59	100.00
110	0.00	14.14	3.24	179.15	3.24	100.00
115	0.00	17.87	0.69	170.24	0.69	100.00
120	0.00	22.08	-1.60	162.45	-1.60	100.00
125	0.00	26.29	-3.50	155.67	-3.50	100.00
130	0.00	30.43	-5.08	150.60	-5.08	100.00
135	0.00	34.47	-6.44	146.44	-6.44	100.00
140	0.00	38.38	-7.60	142.97	-7.60	100.00
145	0.00	42.12	-8.61	140.05	-8.61	100.00
150	0.00	45.66	-9.49	137.60	-9.49	100.00
155	0.00	48.91	-10.00	136.18	-10.00	100.00
160	0.00	51.80	-10.00	136.18	-10.00	100.00
165	0.00	54.24	-10.00	136.18	-10.00	100.00
170	0.26	55.87	-10.00	131.17	-10.00	100.00
175	0.32	56.96	-10.00	127.21	-10.00	100.00
180	0.34	57.33	-10.00	125.69	-10.00	100.00
185	0.40	56.89	-10.00	121.83	-10.00	100.00

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

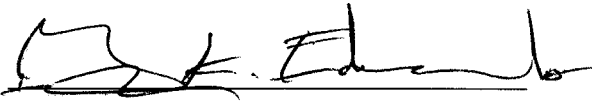
LAREDO, TX

Licensee Name SES Americom, Inc.
Latitude (NAD 83) 27° 41' 25.7" N
Longitude (NAD 83) 99° 26' 59.0" W
Ground Elevation (AMSL) 198.06 m / 649.8 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
Antenna Model GD Satcom 6.3 meter
Antenna Mode Receive 18.0 GHz Transmit 28.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20% -151.0 dBW/4 kHz 20%
Short Term -146.0 dBW/MHz 0.01% -128.0 dBW/4 kHz 0.0025%
Max Available RF Power -38.8 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.46	55.69	-10.00	116.95	-10.00	100.00
195	0.46	53.88	-10.00	117.02	-10.00	100.00
200	0.62	51.37	-10.00	109.12	-10.00	100.00
205	0.86	48.35	-10.00	100.00	-10.00	100.00
210	1.14	44.96	-9.32	100.00	-9.32	100.00
215	1.06	41.52	-8.46	100.00	-8.46	100.00
220	0.76	37.96	-7.48	109.56	-7.48	100.00
225	0.85	34.02	-6.29	108.81	-6.29	100.00
230	0.67	30.08	-4.96	120.14	-4.96	100.00
235	0.65	25.96	-3.36	125.30	-3.36	100.00
240	0.60	21.77	-1.45	131.65	-1.45	100.00
245	0.56	17.55	0.89	140.58	0.89	100.00
250	0.54	13.72	3.57	150.46	3.57	100.00
255	0.51	10.86	6.11	161.72	6.11	100.00
260	0.62	9.72	7.30	186.45	7.30	100.00
265	0.55	11.14	5.83	158.81	5.83	100.00
270	0.55	14.21	3.19	148.89	3.19	100.00
275	0.58	18.12	0.54	138.54	0.54	100.00
280	0.72	22.42	-1.77	126.49	-1.77	100.00
285	0.88	26.94	-3.76	114.26	-3.76	100.00
290	1.33	31.53	-5.47	100.00	-5.47	100.00
295	1.40	36.32	-7.00	100.00	-7.00	100.00
300	1.39	41.16	-8.36	100.00	-8.36	100.00
305	1.36	46.04	-9.58	100.00	-9.58	100.00
310	1.10	50.96	-10.00	100.00	-10.00	100.00
315	0.95	55.88	-10.00	100.00	-10.00	100.00
320	0.92	60.79	-10.00	100.00	-10.00	100.00
325	1.02	65.70	-10.00	100.00	-10.00	100.00
330	0.98	70.62	-10.00	100.00	-10.00	100.00
335	0.87	75.55	-10.00	100.00	-10.00	100.00
340	1.33	80.47	-10.00	100.00	-10.00	100.00
345	1.10	85.41	-10.00	100.00	-10.00	100.00
350	1.01	90.34	-10.00	100.00	-10.00	100.00
355	1.39	95.28	-10.00	100.00	-10.00	100.00

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
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DATED: December 07, 2022