



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION**

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**RADIO STATION AUTHORIZATION**

**Name:** HNS License Sub, LLC

**Call Sign:** E060445

**Authorization Type:** Modification of License

**File Number:** SES-MFS-20210119-00069

**Non Common Carrier**

**Grant date:** 03/08/2021

**Expiration Date:** 02/27/2022

**Nature of Service:** Fixed Satellite Service

**Class of Station:** Other

**A) Site Location(s)**

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	Special Provisions NAD (Refer to Section H)
1)	TFTR1.2M	1000 (1.2M) CONUS, AK, HI, PR, VI				NA
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209				
2)	TFTR74CM	25,000 (74cm) CONUS, AK, HI, PR, VI	0°0'0.0"N	0°0'0.0"W	0	NA
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209				
3)	TFTR98CM	10,000 (98cm) CONUS, AK, HI, PR, VI	0°0'0.0"N	0°0'0.0"W		NA
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209				
4)	TR1.2M	100,000 (1.2m) CONUS, AK, HI, PR, VI	0°0'0.0"N	0°0'0.0"W	0	NA
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209				
5)	TR1.8M	50,000 (1.8m) CONUS, AK, HI, PR, VI	0°0'0.0"N	0°0'0.0"W	0	NA
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209				
6)	TR3.5M	50,000 (3.5m) CONUS, AK, HI, PR, VI	0°0'0.0"N	0°0'0.0"W	0	NA
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209				



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**A) Site Location(s)**

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	NAD	Special Provisions (Refer to Section H)
7)	TR69CM	1,000,000 (69CM)				NA	
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209					
8)	TR74CM	5,000,000 (74cm) CONUS, AK, HI, PR, VI	0°0'0.0"N	0°0'0.0"W	0	83	
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209					
9)	TR90CM	100,000 (90CM) CONUS, AK, HI, PR, VI				NA	
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209					
10)	TR98CM	250,000 (98cm) CONUS, AK, HI, PR, VI	0°0'0.0"N	0°0'0.0"W		NA	
		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 February 27, 2007 (3 AM Eastern Standard Time) and ending February 27, 2022 (3 AM Eastern Standard Time) . The required date of completion of construction and commencement of operation is March 8, 2022 (3 AM Eastern Standard Time) . Grantee must file with the Commission a certification upon completion of construction and commencement of operation.*



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**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)	29250.0000-29500.0000	L, R	100KG7W	Tx	38.50	24.50	69CM		M-ARY PHASE SHIFT KEYING DIGITAL CARRIER
2)	29250.0000-29500.0000	L, R	2M00G7W	Tx	46.80	19.80	69CM		M-ARY PHASE SHIFT KEYING DIGITAL CARRIER
3)	29250.0000-29500.0000	L, R	670KG7W	Tx	46.80	24.50	69CM		M-ARY PHASE SHIFT KEYING DIGITAL CARRIER
4)	19700.0000-20200.0000	L, R	100KG7W	Rx			69CM		M-ARY PHASE SHIFT KEYING DIGITAL CARRIER
5)	19700.0000-20200.0000	L, R	500MG7W	Rx			69CM		M-ARY PHASE SHIFT KEYING DIGITAL CARRIER
6)	18300.0000-19300.0000	L, R	100KG7W	Rx			69CM		M-ARY PHASE SHIFT KEYING DIGITAL CARRIER
7)	18300.0000-19300.0000	L, R	500MG7W	Rx			69CM		M-ARY PHASE SHIFT KEYING DIGITAL CARRIER
8)	28350.0000-28600.0000	L, R	650KG7W	Tx	45.80	23.70	74CM(FA)		512 KBPS, PSK, DIGITAL CARRIER
9)	19700.0000-20200.0000	L, R	500MG7W	Rx			74CM(FA)		500 MHZ, PSK, DIGITAL CARRIER
10)	19700.0000-20200.0000	L, R	100KG7W	Rx		0.00	74CM(FA)		100 KHZ, PSK, DIGITAL CARRIER
11)	18800.0000-19300.0000	L, R	500MG7W	Rx			74CM(FA)		500 MHZ WIDE, PSK, DIGITAL CARRIER
12)	18300.0000-19300.0000	L, R	100KG7W	Rx			74CM(FA)		100 KHZ WIDE, PSK, DIGITAL CARRIER
13)	18300.0000-18800.0000	L, R	500MG7W	Rx			74CM(FA)		500 MHZ WIDE, PSK, DIGITAL CARRIER
14)	29250.0000-30000.0000	L, R	650KG7W	Tx	45.80	23.70	74CM(FB)		512 KBPS, PSK, DIGITAL CARRIER
15)	19700.0000-20200.0000	L, R	100KG7W	Rx			74CM(FB)		100 KHZ, PSK, DIGITAL CARRIER
16)	19700.0000-20200.0000	L, R	500MG7W	Rx			74CM(FB)		500 MHZ, PSK, DIGITAL CARRIER
17)	18300.0000-19300.0000	L, R	100KG7W	Rx			74CM(FB)		100 KHZ, PSK, DIGITAL CARRIER
18)	18300.0000-19300.0000	L, R	500MG7W	Rx			74CM(FB)		500 MHZ, PSK, DIGITAL CARRIER



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The General Provision 1010 applies to all receiving frequency bands.

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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
19)	29250.0000-30000.0000	L, R	650KG7W	Tx	47.00	24.90	74CM(FC)		512 KBPS, PSK, DIGITAL CARRIER
20)	19700.0000-20200.0000	L, R	100KG7W	Rx			74CM(FC)		100 KHZ WIDE, PSK, DIGITAL CARRIER
21)	19700.0000-20200.0000	L, R	500MG7W	Rx			74CM(FC)		500 MHZ WIDE, PSK, DIGITAL CARRIER
22)	18300.0000-19300.0000	L, R	500MG7W	Rx			74CM(FC)		500 MHZ WIDE, PSK, DIGITAL CARRIER
23)	18300.0000-19300.0000	L, R	100KG7W	Rx			74CM(FC)		100 KHZ WIDE, PSK, DIGITAL CARRIER
24)	29250.0000-30000.0000	L, R	650KG7W	Tx	45.80	23.70	74CM(FD)		512 KSPS, PSK, DIGITAL CARRIER
25)	28350.0000-28600.0000	L, R	650KG7W	Tx	45.80	23.70	74CM(FD)		512 KSPS, PSK, DIGITAL CARRIER
26)	19700.0000-20200.0000	L, R	100KG7W	Rx			74CM(FD)		100 KHZ, PSK, DIGITAL CARRIER
27)	19700.0000-20200.0000	L, R	500MG7W	Rx	0.00	0.00	74CM(FD)		500 MHZ, PSK, DIGITAL CARRIER
28)	18300.0000-19300.0000	L, R	100KG7W	Rx			74CM(FD)		100 MHZ, PSK, DIGITAL CARRIER
29)	18300.0000-19300.0000	L, R	500MG7W	Rx			74CM(FD)		500 MHZ, PSK, PSK, DIGITAL CARRIER
30)	29500.0000-30000.0000	L, R	650KG7W	Tx	47.00	24.90	74CM(TA)		512 KBPS, PSK, DIGITAL CARRIER
31)	29250.0000-29500.0000	L, R	650KG7W	Tx	47.00	24.90	74CM(TA)		512 KBPS, PSK, DIGITAL CARRIER
32)	28350.0000-28600.0000	L, R	650KG7W	Tx	47.00	24.90	74CM(TA)		512 KBPS, PSK, DIGITAL CARRIER
33)	28350.0000-28600.0000	L, R	650KG7W	Tx	47.00	24.90	74CM(TA)		512 KBPS, PSK, DIGITAL CARRIER
34)	19700.0000-20200.0000	L, R	100KG7W	Rx			74CM(TA)		100 KHZ WIDE, PSK, DIGITAL CARRIER
35)	19700.0000-20200.0000	L, R	500MG7W	Rx			74CM(TA)		500 MHZ WIDE, PSK, DIGITAL CARRIER
36)	18800.0000-19300.0000	L, R	500MG7W	Rx			74CM(TA)		500 MHZ WIDE, PSK, DIGITAL CARRIER



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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
37)	18300.0000-19300.0000	L, R	100KG7W	Rx			74CM(TA)		100 KHZ WIDE, PSK, DIGITAL CARRIER
38)	18300.0000-18800.0000	L, R	500MG7W	Rx			74CM(TA)		500 MHZ WIDE, PSK, DIGITAL CARRIER
39)	18300.0000-18800.0000	L, R	500MG7W	Rx			74CM(TA)		500 MHZ WIDE, PSK, DIGITAL CARRIER
40)	29500.0000-30000.0000	L, R	650KG7W	Tx	47.00	24.90	74CM(TB)		512 KBPS, PSK, DIGITAL CARRIER
41)	29250.0000-29500.0000	L, R	650KG7W	Tx	45.80	23.70	74CM(TB)		512 KBPS, PSK, DIGITAL CARRIER
42)	29250.0000-29500.0000	L, R	650KG7W	Tx	45.80	23.70	74CM(TB)		512 KSPS, PSK, DIGITAL CARRIER
43)	28350.0000-28600.0000	L, R	650KG7W	Tx	45.80	23.70	74CM(TB)		512 KBPS, PSK, DIGITAL CARRIER
44)	28350.0000-28600.0000	L, R	650KG7W	Tx	45.80	23.70	74CM(TB)		512 KBPS, PSK, DIGITAL CARRIER
45)	19700.0000-20200.0000	L, R	500MG7W	Rx			74CM(TB)		500 MHZ, PSK, DIGITAL CARRIER
46)	19700.0000-20200.0000	L, R	100KG7W	Rx			74CM(TB)		100 KHZ WIDE, PSK, DIGITAL CARRIER
47)	18800.0000-19300.0000	L, R	500MG7W	Rx			74CM(TB)		500 MHZ WIDE, PSK, DIGITAL CARRIER
48)	18300.0000-19300.0000	L, R	100KG7W	Rx			74CM(TB)		100 KHZ WIDE, PSK, DIGITAL CARRIER
49)	18300.0000-18800.0000	L, R	500MG7W	Rx			74CM(TB)		500 MHZ, PSK, DIGITAL CARRIER
50)	18300.0000-18800.0000	L, R	500MG7W	Rx			74CM(TB)		500 MHZ WIDE, PSK, DIGITAL CARRIER
51)	29500.0000-30000.0000	L, R	650KG7W	Tx	47.00	24.90	74CM(TC)		512 KBPS, PSK, DIGITAL CARRIER
52)	29250.0000-29500.0000	L, R	650KG7W	Tx	47.00	24.90	74CM(TC)		512 KBPS, PSK, DIGITAL CARRIER
53)	29250.0000-29500.0000	L, R	650KG7W	Tx	47.00	249.00	74CM(TC)		512 KBPS, PSK, DIGITAL CARRIER
54)	28350.0000-28600.0000	L, R	650KG7W	Tx	47.00	24.90	74CM(TC)		512 KBPS, PSK, DIGITAL CARRIER



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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
55)	28350.0000-28600.0000	L, R	650KG7W	Tx	47.00	249.00	74CM(TC)		512 KBPS, PSK, DIGITAL CARRIER
56)	19700.0000-20200.0000	L, R	500MG7W	Rx			74CM(TC)		500 MHZ, PSK, DIGITAL CARRIER
57)	19700.0000-20200.0000	L, R	100KG7W	Rx			74CM(TC)		100 KHZ WIDE, PSK, DIGITAL CARRIER
58)	18800.0000-19300.0000	L, R	500MG7W	Rx			74CM(TC)		500 MHZ WIDE, PSK, DIGITAL CARRIER
59)	18300.0000-19300.0000	L, R	100KG7W	Rx			74CM(TC)		100 KHZ WIDE, PSK, DIGITAL CARRIER
60)	18300.0000-18800.0000	L, R	500MG7W	Rx			74CM(TC)		500 MHZ WIDE, PSK, DIGITAL CARRIER
61)	18300.0000-18800.0000	L, R	500MG7W	Rx			74CM(TC)		500 MHZ WIDE, PSK, DIGITAL CARRIER
62)	29250.0000-30000.0000	L, R	650KG7W	Tx	51.50	29.40	90CM		512 KSPS, PSK, DIGITAL CARRIER
63)	28350.0000-28600.0000	L, R	650KG7W	Tx	51.50	29.40	90CM		512 KSPS, PSK, DIGITAL CARRIER
64)	19700.0000-20200.0000	L, R	100KG7W	Rx			90CM		100 KHZ, PSK, DIGITAL CARRIER
65)	19700.0000-20200.0000	L, R	500MG7W	Rx			90CM		500 MHZ, PSK, DIGITAL CARRIER
66)	18300.0000-19300.0000	L, R	100KG7W	Rx			90CM		100 KHZ, PSK, DIGITAL CARRIER
67)	18300.0000-19300.0000	L, R	500MG7W	Rx			90CM		500 MHZ, PSK, DIGITAL CARRIER
68)	29500.0000-30000.0000	L, R	100KG7W	Tx	42.70	28.80	TFTR1.2		QPSK, DATA, INROUTE, 64 KSPS
69)	29250.0000-30000.0000	L, R	2M00G7W	Tx	55.90	28.80	TFTR1.2		QPSK, DATA, INROUTE, 1600 KSPS
70)	29250.0000-30000.0000	L, R	2M61G7W	Tx	55.90	27.70	TFTR1.2		QPSK, DATA, INROUTE, 2048 KSPS
71)	29250.0000-29500.0000	L, R	100KG7W	Tx	42.70	28.80	TFTR1.2		QPSK, DATA, INROUTE, 64 KSPS
72)	29250.0000-29500.0000	L, R	2M61G7W	Tx	55.90	27.70	TFTR1.2		QPSK, DATA, INROUTE, 2048 KSPS



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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
73)	19700.0000-20200.0000	L, R	100KG7W	Rx			TFTR1.2		QPSK, DATA, OUTROUTE, 64 KSPS
74)	19700.0000-20200.0000	L, R	500MG7W	Rx			TFTR1.2		QPSK, DATA, OUTROUTE, 30 MSPS
75)	18300.0000-19300.0000	L, R	100KG7W	Rx			TFTR1.2		QPSK, DATA, OUTROUTE, 64 KSPS
76)	18300.0000-19300.0000	L, R	2M61G7W	Rx			TFTR1.2		500 MHZ WIDE, PSK, DIGITAL CARRIER
77)	29500.0000-30000.0000	L, R	650KG7W	Tx	49.40	27.30	TFTR98(2)		512 KBPS, PSK, DIGITAL CARRIER
78)	29500.0000-30000.0000	L, R	2M61G7W	Tx	53.40	25.30	TFTR98(2)		2.048 MBPS, PSK, DIGITAL CARRIER
79)	29250.0000-29500.0000	L, R	650KG7W	Tx	49.40	27.30	TFTR98(2)		512 KBPS, PSK, DIGITAL CARRIER
80)	29250.0000-29500.0000	L, R	2M61G7W	Tx	53.40	25.30	TFTR98(2)		2.048 MBPS, PSK, DIGITAL CARRIER
81)	19700.0000-20200.0000	L, R	100KG7W	Rx			TFTR98(2)		100 KHZ WIDE, PSK, DIGITAL CARRIER
82)	19700.0000-20200.0000	L, R	500MG7W	Rx			TFTR98(2)		500 MHZ WIDE, PSK, DIGITAL CARRIER
83)	18300.0000-19300.0000	L, R	100KG7W	Rx			TFTR98(2)		100 KHZ WIDE, PSK, DIGITAL CARRIER
84)	18300.0000-19300.0000	L, R	500MG7W	Rx			TFTR98(2)		500 MHZ WIDE, PSK, DIGITAL CARRIER
85)	29500.0000-30000.0000	L, R	500MG7W	Tx	41.20	27.20	TFTR98(3)		QPSK, DATA, INROUTE, 64 KSPS
86)	29500.0000-30000.0000	L, R	1M48G7W	Tx	52.90	27.20	TFTR98(3)		QPSK, DATA, INROUTE, 1100 KSPS
87)	29500.0000-30000.0000	L, R	2M61G7W	Tx	52.90	24.80	TFTR98(3)		QPSK, DATA, INROUTE, 2048 KSPS
88)	29250.0000-29500.0000	L, R	500MG7W	Tx	41.20	27.20	TFTR98(3)		QPSK, DATA, INROUTE, 64 KSPS
89)	29250.0000-29500.0000	L, R	2M61G7W	Tx	52.90	24.80	TFTR98(3)		QPSK, DATA, INROUTE, 204K KSPS
90)	19700.0000-20200.0000	L, R	100KG7W	Rx			TFTR98(3)		QPSK, DATA, OUTROUTE, 64 KSPS



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91)	19700.0000-20200.0000	L, R	500MG7W	Rx			TFTR98 (3)		QPSK, DATA, OUTROUTE, 30 MSPS
92)	18300.0000-19300.0000	L, R	100KG7W	Rx			TFTR98 (3)		QPSK, DATA, OUTROUTE, 64 KSPS
93)	18300.0000-19300.0000	L, R	500MG7W	Rx			TFTR98 (3)		QPSK, DATA, OUTROUTE, 30 MSPS
94)	29500.0000-30000.0000	L, R	650KG7W	Tx	49.40	27.30	TFTR98CM		512 KBPS, PSK, DIGITAL CARRIER
95)	29500.0000-30000.0000	L, R	2M61G7W	Tx	53.40	25.30	TFTR98CM		2.048 MBPS, PSK, DIGITAL CARRIER
96)	29250.0000-29500.0000	L, R	650KG7W	Tx	49.40	27.30	TFTR98CM		512 KBPS, PSK, DIGITAL CARRIER
97)	29250.0000-29500.0000	L, R	2M61G7W	Tx	53.40	25.30	TFTR98CM		2.048 MBPS, PSK, DIGITAL CARRIER
98)	19700.0000-20200.0000	L, R	100KG7W	Rx			TFTR98CM		100 MHZ WIDE, PSK, DIGITAL CARRIER
99)	19700.0000-20200.0000	L, R	500MG7W	Rx			TFTR98CM		500 MHZ WIDE, PSK, DIGITAL CARRIER
100)	18300.0000-19300.0000	L, R	100KG7W	Rx			TFTR98CM		100 KHZ WIDE, PSK, DIGITAL CARRIER
101)	18300.0000-19300.0000	L, R	500MG7W	Rx			TFTR98CM		500 MHZ WIDE, PSK, DIGITAL CARRIER
102)	29500.0000-30000.0000	L, R	650KG7W	Tx	51.20	29.10	TR1.2		512 KBPS, PSK, DIGITAL CARRIER
103)	29500.0000-30000.0000	L, R	2M61G7W	Tx	57.20	29.10	TR1.2		2.048 MBPS, PSK, DIGITAL CARRIER
104)	29250.0000-29500.0000	L, R	650KG7W	Tx	51.20	29.10	TR1.2		512 KBPS, PSK, DIGITAL CARRIER
105)	29250.0000-29500.0000	L, R	2M61G7W	Tx	57.20	29.10	TR1.2		2.048 MBPS, PSK, DIGITAL CARRIER
106)	19700.0000-20200.0000	L, R	100KG7W	Rx			TR1.2		100 KHZ WIDE, PSK, DIGITAL CARRIER
107)	19700.0000-20200.0000	L, R	500MG7W	Rx			TR1.2		500 MHZ WIDE, PSK, DIGITAL CARRIER
108)	18300.0000-19300.0000	L, R	100KG7W	Rx			TR1.2		100 KHZ WIDE, PSK, DIGITAL CARRIER





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**FEDERAL COMMUNICATIONS COMMISSION**  


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**RADIO STATION AUTHORIZATION**

**Name:** HNS License Sub, LLC

**Call Sign:** E060445

**Authorization Type:** Modification of License

**File Number:** SES-MFS-20210119-00069

Non Common Carrier

**Grant date:** 03/08/2021

**Expiration Date:** 02/27/2022

**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
109)	18300.0000-19300.0000	L, R	500MG7W	Rx			TR1.2		500 MHZ WIDE, PSK, DIGITAL CARRIER
110)	29500.0000-30000.0000	L, R	650KG7W	Tx	54.70	32.60	TR1.8		512 KBPS, PSK, DIGITAL CARRIER
111)	29500.0000-30000.0000	L, R	2M61G7W	Tx	60.70	32.60	TR1.8		2.048 MBPS, PSK, DIGITAL CARRIER
112)	29500.0000-30000.0000	L, R	20M9G7W	Tx	69.80	32.60	TR1.8		16.348 MBPS, PSK, DIGITAL CARRIER
113)	29250.0000-29500.0000	L, R	650KG7W	Tx	54.70	32.60	TR1.8		512 KBPS, PSK, DIGITAL CARRIER
114)	29250.0000-29500.0000	L, R	20M9G7W	Tx	69.80	32.60	TR1.8		16.348 MBPS, PSK, DIGITAL CARRIER
115)	19700.0000-20200.0000	L, R	100KG7W	Rx			TR1.8		100 KHZ WIDE, PSK, DIGITAL CARRIER
116)	19700.0000-20200.0000	L, R	500MG7W	Rx			TR1.8		500 MHZ WIDE, PSK, DIGITAL CARRIER
117)	18300.0000-19300.0000	L, R	100KG7W	Rx			TR1.8		100 KHZ WIDE, PSK, DIGITAL CARRIER
118)	18300.0000-19300.0000	L, R	500MG7W	Rx			TR1.8		500 MHZ WIDE, PSK, DIGITAL CARRIER
119)	29500.0000-30000.0000	L, R	650KG7W	Tx	60.30	38.20	TR3.5		512 KBPS, PSK, DIGITAL CARRIER
120)	29500.0000-30000.0000	L, R	2M61G7W	Tx	66.30	38.20	TR3.5		2.048 MBPS, PSK, DIGITAL CARRIER
121)	29500.0000-30000.0000	L, R	20M9G7W	Tx	75.40	38.20	TR3.5		16.348 MBPS, PSK, DIGITAL CARRIER
122)	29250.0000-29500.0000	L, R	650KG7W	Tx	60.30	38.20	TR3.5		512 KBPS, PSK, DIGITAL CARRIER
123)	29250.0000-29500.0000	L, R	20M9G7W	Tx	75.40	38.20	TR3.5		2,048 MBPS, PSK, DIGITAL CARRIER
124)	19700.0000-20200.0000	L, R	100KG7W	Rx			TR3.5		100 KHZ WIDE, PSK, DIGITAL CARRIER
125)	19700.0000-20200.0000	L, R	500MG7W	Rx			TR3.5		500 MHZ WIDE, PSK, DIGITAL CARRIER
126)	18300.0000-19300.0000	L, R	100KG7W	Rx			TR3.5		100 KHZ WIDE, PSK, DIGITAL CARRIER



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**RADIO STATION AUTHORIZATION**

**Name:** HNS License Sub, LLC

**Call Sign:** E060445

**Authorization Type:** Modification of License

**File Number:** SES-MFS-20210119-00069

**Non Common Carrier**

**Grant date:** 03/08/2021

**Expiration Date:** 02/27/2022

**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
127)	18300.0000-19300.0000	L, R	500MG7W	Rx			TR3.5		500 MHZ WIDE, PSK, DIGITAL CARRIER
128)	29500.0000-30000.0000	L, R	650KG7W	Tx	49.40	27.30	TR98CM(1)		512 KBPS, PSK, DIGITAL CARRIER
129)	29500.0000-30000.0000	L, R	2M61G7W	Tx	53.40	25.30	TR98CM(1)		2.048 MBPS, PSK, DIGITAL CARRIER
130)	29250.0000-29500.0000	L, R	650KG7W	Tx	49.40	27.30	TR98CM(1)		512 KBPS, PSK, DIGITAL CARRIER
131)	29250.0000-29500.0000	L, R	2M61G7W	Tx	53.40	25.30	TR98CM(1)		2.048 MBPS, PSK, DIGITAL CARRIER
132)	19700.0000-20200.0000	L, R	100KG7W	Rx			TR98CM(1)		100 KHZ WIDE, PSK, DIGITAL CARRIER
133)	19700.0000-20200.0000	L, R	500MG7W	Rx			TR98CM(1)		500 MHZ WIDE, PSK, DIGITAL CARRIER
134)	18300.0000-19300.0000	L, R	100KG7W	Rx			TR98CM(1)		100 KHZ WIDE, PSK, DIGITAL CARRIER
135)	18300.0000-19300.0000	L, R	500MG7W	Rx			TR98CM(1)		500 MHZ WIDE, PSK, DIGITAL CARRIER
136)	29500.0000-30000.0000	L, R	650KG7W	Tx	49.40	27.30	TR98CM(2)		512 KBPS, PSK, DIGITAL CARRIER
137)	29500.0000-30000.0000	L, R	2M61G7W	Tx	53.40	25.30	TR98CM(2)		2.048 MBPS, PSK, DIGITAL CARRIER
138)	29250.0000-29500.0000	L, R	650KG7W	Tx	45.80	23.70	TR98CM(2)		512 KBPS, PSK, DIGITAL CARRIER
139)	29250.0000-29500.0000	L, R	650KG7W	Tx	49.40	27.30	TR98CM(2)		512 KBPS, PSK, DIGITAL CARRIER
140)	29250.0000-29500.0000	L, R	2M61G7W	Tx	53.40	25.30	TR98CM(2)		2.048 MBPS, PSK, DIGITAL CARRIER
141)	19700.0000-20200.0000	L, R	100KG7W	Rx			TR98CM(2)		100 KHZ WIDE, PSK, DIGITAL CARRIER
142)	19700.0000-20200.0000	L, R	500MG7W	Rx			TR98CM(2)		500 MHZ WIDE, PSK, DIGITAL CARRIER
143)	18300.0000-19300.0000	L, R	100KG7W	Rx			TR98CM(2)		100 KHZ WIDE, PSK DIGITAL CARRIER
144)	18300.0000-19300.0000	L, R	500MG7W	Rx			TR98CM(2)		500 MHZ WIDE, PSK, DIGITAL CARRIER



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Call Sign: E060445

Authorization Type: Modification of License

File Number: SES-MFS-20210119-00069

Non Common Carrier

Grant date: 03/08/2021

Expiration Date: 02/27/2022

**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)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	TR3.5
2)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		TR3.5
3)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	TFTR1.2
4)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		TFTR1.2
5)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	74CM(TA)
6)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		74CM(TA)
7)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	74CM(TB)
8)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		74CM(TB)
9)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	74CM(TC)
10)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		74CM(TC)
11)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	TFTR98(2)
12)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		TFTR98(2)
13)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	TFTR98CM
14)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		TFTR98CM
15)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	TFTR98(3)
16)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	0	TFTR98(3)
17)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	TR98CM(1)
18)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	0	TR98CM(1)
19)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	TR98CM(2)
20)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	0	TR98CM(2)
21)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	74CM(FA)
22)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		74CM(FA)
23)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	74CM(FC)
24)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		74CM(FC)
25)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	74CM(FB)
26)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		74CM(FB)
27)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	74CM(FD)
28)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		74CM(FD)
29)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	TR1.8
30)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		TR1.8
31)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	TR1.2
32)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		TR1.2
33)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	69CM
34)	19700.0000-20200.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8		69CM
35)	29250.0000-30000.0000	63.0W	138.9W	05.0	-69.2	107.0	-267.8	-20	90CM



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**RADIO STATION AUTHORIZATION**

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File Number: SES-MFS-20210119-00069

Non Common Carrier

Grant date: 03/08/2021

Expiration Date: 02/27/2022

**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		
36)	19700.0000-20200.0000	63.0W	-138.9W	05.0	-69.2	107.0	-267.8		90CM

**D) Points of Communications**

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

- 1) TR3.5M to SPACEWAY 2 (S2133 )satellite @ 138.9 degrees W.L.
- 2) TR3.5M to SPACEWAY 1 satellite @103 degrees W.L.
- 3) TR3.5M to SPACEWAY 3 (S2663) satellite @ 94.95 degrees W.L. (U.K. licensed)
- 4) TR3.5M to AMC-15 (S2180) @ 105.05 degrees W.L.(U.S.-licensed)
- 5) TR3.5M to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 6) TR3.5M to ECHOSTAR-9 (S2143) @ 121 degrees W.L. (U.S.-licensed) Ku band
- 7) TR3.5M to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 8) TR3.5M to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 9) TR3.5M to TELSTAR 19 V (S2955) @ 63 W.L. (UK-Licenses)
- 10) TFTR1.2M to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 11) TFTR1.2M to AMC-15 (S2180) @ 105.05 degrees W.L.(U.S.-licensed)
- 12) TFTR1.2M to SPACEWAY 3 (S2663) satellite @ 94.95 degrees W.L. (U.K. licensed)
- 13) TFTR1.2M to ECHOSTAR-9 (S2143) @ 121 degrees W.L. (U.S.-licensed) Ku band
- 14) TFTR1.2M to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 15) TFTR1.2M to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 16) TFTR1.2M to TELSTAR 19 V (S2955) @ 63 W.L. (UK-Licenses)
- 17) TFTR74CM to SPACEWAY 2 (S2133 )satellite @ 138.9 degrees W.L.
- 18) TFTR74CM to SPACEWAY 1 satellite @103 degrees W.L.
- 19) TFTR74CM to DIRECTV 11 @ 99.2 W.L. satellite of the Direct Broadcast Satellite system (U.S.-licensed)
- 20) TFTR74CM to DIRECTV 10 @ 102.750 W.L. satellite of the Direct Broadcast Satellite system (U.S.-licensed)
- 21) TFTR74CM to SPACEWAY 3 (S2663) satellite @ 94.95 degrees W.L. (U.K. licensed)
- 22) TFTR74CM to AMC-15 (S2180) @ 105.05 degrees W.L.(U.S.-licensed)
- 23) TFTR74CM to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 24) TFTR74CM to ECHOSTAR-9 (S2143) @ 121 degrees W.L. (U.S.-licensed) Ku band
- 25) TFTR74CM to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 26) TFTR74CM to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 27) TFTR74CM to TELSTAR 19 V (S2955) @ 63 W.L. (UK-Licenses)
- 28) TFTR98CM to SPACEWAY 1 satellite @103 degrees W.L.
- 29) TFTR98CM to SPACEWAY 2 (S2133 )satellite @ 138.9 degrees W.L.



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**RADIO STATION AUTHORIZATION**

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**Call Sign:** E060445

**Authorization Type:** Modification of License

**File Number:** SES-MFS-20210119-00069

Non Common Carrier

**Grant date:** 03/08/2021

**Expiration Date:** 02/27/2022

**D) Points of Communications**

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

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- 30) TFTR98CM to AMC-15 (S2180) @ 105.05 degrees W.L.(U.S.-licensed)
- 31) TFTR98CM to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 32) TFTR98CM to SPACEWAY 3 (S2663) satellite @ 94.95 degrees W.L. (U.K. licensed)
- 33) TFTR98CM to ECHOSTAR-9 (S2143) @ 121 degrees W.L. (U.S.-licensed) Ku band
- 34) TFTR98CM to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 35) TFTR98CM to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 36) TFTR98CM to TELSTAR 19 V (S2955) @ 63 W.L. (UK-Licensed)
- 37) TR98CM to SPACEWAY 1 satellite @103 degrees W.L.
- 38) TR98CM to SPACEWAY 2 (S2133 )satellite @ 138.9 degrees W.L.
- 39) TR98CM to SPACEWAY 3 (S2663) satellite @ 94.95 degrees W.L. (U.K. licensed)
- 40) TR98CM to AMC-15 (S2180) @ 105.05 degrees W.L.(U.S.-licensed)
- 41) TR98CM to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 42) TR98CM to ECHOSTAR-9 (S2143) @ 121 degrees W.L. (U.S.-licensed) Ku band
- 43) TR98CM to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 44) TR98CM to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 45) TR98CM to TELSTAR 19 V (S2955) @ 63 W.L. (UK-Licensed)
- 46) TR74CM to SPACEWAY 2 (S2133 )satellite @ 138.9 degrees W.L.
- 47) TR74CM to SPACEWAY 1 satellite @103 degrees W.L.
- 48) TR74CM to DIRECTV 11 @ 99.2 W.L. satellite of the Direct Broadcast Satellite system (U.S.-licensed)
- 49) TR74CM to DIRECTV 10 @ 102.750 W.L. satellite of the Direct Broadcast Satellite system (U.S.-licensed)
- 50) TR74CM to AMC-15 (S2180) @ 105.05 degrees W.L.(U.S.-licensed)
- 51) TR74CM to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 52) TR74CM to SPACEWAY 3 (S2663) satellite @ 94.95 degrees W.L. (U.K. licensed)
- 53) TR74CM to ECHOSTAR-9 (S2143) @ 121 degrees W.L. (U.S.-licensed) Ku band
- 54) TR74CM to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 55) TR74CM to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 56) TR74CM to TELSTAR 19 V (S2955) @ 63 W.L. (UK-Licensed)
- 57) TR1.8M to SPACEWAY 2 (S2133 )satellite @ 138.9 degrees W.L.
- 58) TR1.8M to SPACEWAY 1 satellite @103 degrees W.L.
- 59) TR1.8M to SPACEWAY 3 (S2663) satellite @ 94.95 degrees W.L. (U.K. licensed)
- 60) TR1.8M to AMC-15 (S2180) @ 105.05 degrees W.L.(U.S.-licensed)
- 61) TR1.8M to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 62) TR1.8M to ECHOSTAR-9 (S2143) @ 121 degrees W.L. (U.S.-licensed) Ku band
- 63) TR1.8M to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 64) TR1.8M to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 65) TR1.8M to TELSTAR 19 V (S2955) @ 63 W.L. (UK-Licensed)



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**RADIO STATION AUTHORIZATION**

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**Call Sign:** E060445

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**File Number:** SES-MFS-20210119-00069

Non Common Carrier

**Grant date:** 03/08/2021

**Expiration Date:** 02/27/2022

**D) Points of Communications**

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

- 66) TR1.2M to SPACEWAY 2 (S2133 )satellite @ 138.9 degrees W.L.
- 67) TR1.2M to SPACEWAY 1 satellite @103 degrees W.L.
- 68) TR1.2M to AMC-15 (S2180) @ 105.05 degrees W.L.(U.S.-licensed)
- 69) TR1.2M to SPACEWAY 3 (S2663) satellite @ 94.95 degrees W.L. (U.K. licensed)
- 70) TR1.2M to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 71) TR1.2M to ECHOSTAR-9 (S2143) @ 121 degrees W.L. (U.S.-licensed) Ku band
- 72) TR1.2M to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 73) TR1.2M to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 74) TR1.2M to TELSTAR 19 V (S2955) @ 63 W.L. (UK-Licensed)
- 75) TR69CM to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 76) TR69CM to SPACEWAY 1 satellite @103 degrees W.L.
- 77) TR69CM to SPACEWAY 3 (S2663) satellite @ 94.95 degrees W.L. (U.K. licensed)
- 78) TR69CM to AMC-15 (S2180) @ 105.05 degrees W.L.(U.S.-licensed)
- 79) TR69CM to ECHOSTAR-9 (S2143) @ 121 degrees W.L. (U.S.-licensed) Ku band
- 80) TR69CM to SPACEWAY 2 (S2133 )satellite @ 138.9 degrees W.L.
- 81) TR69CM to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 82) TR69CM to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 83) TR69CM to TELSTAR 19 V (S2955) @ 63 W.L. (UK-Licensed)
- 84) TR90CM to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 85) TR90CM to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 86) TR90CM to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 87) TR90CM to ECHOSTAR-9 (S2143) @ 121 degrees W.L. (U.S.-licensed) Ku band
- 88) TR90CM to AMC-15 (S2180) @ 105.05 degrees W.L.(U.S.-licensed)
- 89) TR90CM to TELSTAR 19 V (S2955) @ 63 W.L. (UK-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)
TR69CM	69CM	1000000	0.69	SKYWARE GLOBAL	HNS-AN8-069R			
Max Gains(s):		41.5 dBi @	19.9500 GHz	45.0 dBi @	29.7500 GHz			
Maximum total input power at antenna flange (Watts) =					1.50			
Maximum aggregate output EIRP for all carriers (dBW) =					46.80			



**UNITED STATES OF AMERICA**  
**FEDERAL COMMUNICATIONS COMMISSION**  


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**RADIO STATION AUTHORIZATION**

**Name:** HNS License Sub, LLC

**Call Sign:** E060445

**Authorization Type:** Modification of License

**File Number:** SES-MFS-20210119-00069

**Non Common Carrier**

**Grant date:** 03/08/2021

**Expiration Date:** 02/27/2022

**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)
TR74CM	74CM(FA)	5000000	0.74	GD SATCOM	AN8-074P	0	0 AGL	
		Max Gains(s):	45.6 dBi @	29.7500 GHz	42.2 dBi @	19.9500 GHz		
		Maximum total input power at antenna flange (Watts) =			2.00			
		Maximum aggregate output EIRP for all carriers (dBW) =			48.60			
TR74CM	74CM(FB)	5000000	0.74	GD SATCOM	HNS1031929	0		
		Max Gains(s):	45.6 dBi @	29.7500 GHz	42.2 dBi @	19.9500 GHz		
		Maximum total input power at antenna flange (Watts) =			2.00			
		Maximum aggregate output EIRP for all carriers (dBW) =			48.60			
TR74CM	74CM(FC)	5000000	0.74	SKYWARE GLOBAL	AN8-074R	0		
		Max Gains(s):	44.4 dBi @	29.7500 GHz	40.0 dBi @	19.9500 GHz		
		Maximum total input power at antenna flange (Watts) =			2.00			
		Maximum aggregate output EIRP for all carriers (dBW) =			47.40			
TR74CM	74CM(FD)	5000000	0.74	SKYWARE GLOBAL	AN9-074	0	0 AGL	
		Max Gains(s):	42.2 dBi @	19.9500 GHz	45.6 dBi @	29.7500 GHz		
		Maximum total input power at antenna flange (Watts) =			2.00			
		Maximum aggregate output EIRP for all carriers (dBW) =			48.60			
TFTR74CM	74CM(TA)	25000	0.74	GD SATCOM	HNS1031929	0	0 AGL	
		Max Gains(s):	42.2 dBi @	19.9500 GHz	45.6 dBi @	29.7500 GHz		
		Maximum total input power at antenna flange (Watts) =			2.00			
		Maximum aggregate output EIRP for all carriers (dBW) =			48.60			
TFTR74CM	74CM(TB)	25000	0.74	SKYWARE GLOBAL	AN8-074R	0	0 AGL	
		Max Gains(s):	44.4 dBi @	29.7500 GHz	40.0 dBi @	19.9500 GHz		
		Maximum total input power at antenna flange (Watts) =			2.00			
		Maximum aggregate output EIRP for all carriers (dBW) =			47.40			



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Site ID	Antenna ID	Units	Diameter (meters)	Manufacturer	Model number	Site Elevation (Meters)	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
TFTR74CM	74CM(TC)	25000	0.74	GD SATCOM	AN8-074P	0	0 AGL	
		Max Gains(s):		42.2 dBi @ 19.9500 GHz	45.6 dBi @ 29.7500 GHz			
		Maximum total input power at antenna flange (Watts) =		2.00				
		Maximum aggregate output EIRP for all carriers (dBW) =		48.60				
TR90CM	90CM	100000	0.9	GLOBAL SKYWARE	6116047-01			
		Max Gains(s):		43.7 dBi @ 19.9500 GHz	47.2 dBi @ 29.7500 GHz			
		Maximum total input power at antenna flange (Watts) =		3.30				
		Maximum aggregate output EIRP for all carriers (dBW) =		54.50				
TFTR1.2M	TFTR1.2	1000	1.2	AVL TECHNOLOGIES	1210K		0 AGL	
		Max Gains(s):		45.9 dBi @ 19.9500 GHz	49.3 dBi @ 29.7500 GHz			
		Maximum total input power at antenna flange (Watts) =		4.60				
		Maximum aggregate output EIRP for all carriers (dBW) =		55.90				
TFTR98CM	TFTR98(2)	10000	0.98	SKYWARE GLOBAL	AN8-098RAN-098K2			
		Max Gains(s):		44.6 dBi @ 19.9500 GHz	48.0 dBi @ 29.7500 GHz			
		Maximum total input power at antenna flange (Watts) =		3.50				
		Maximum aggregate output EIRP for all carriers (dBW) =		53.40				
TFTR98CM	TFTR98(3)	10000	0.98	AVL TECHNOLOGIES	1010K			
		Max Gains(s):		44.4 dBi @ 19.9500 GHz	48.0 dBi @ 29.7500 GHz			
		Maximum total input power at antenna flange (Watts) =		3.30				
		Maximum aggregate output EIRP for all carriers (dBW) =		52.90				
TFTR98CM	TFTR98CM	10000	0.98	GD SATCOM	AN8-098P			
		Max Gains(s):		44.6 dBi @ 19.9500 GHz	48.0 dBi @ 29.7500 GHz			
		Maximum total input power at antenna flange (Watts) =		3.50				
		Maximum aggregate output EIRP for all carriers (dBW) =		53.40				





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**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)
TR1.2M	TR1.2	100000	1.2	GD SATCOM	3120-131	0	0 AGL	
		Max Gains(s):	46.4 dBi @	19.9500 GHz	49.8 dBi @	29.7500 GHz		
		Maximum total input power at antenna flange (Watts) =			20.00			
		Maximum aggregate output EIRP for all carriers (dBW) =			55.20			
TR1.8M	TR1.8	50000	1.8	GD SATCOM	3180-131	0	0 AGL	
		Max Gains(s):	49.8 dBi @	19.9500 GHz	53.3 dBi @	29.7500 GHz		
		Maximum total input power at antenna flange (Watts) =			46.00			
		Maximum aggregate output EIRP for all carriers (dBW) =			58.70			
TR3.5M	TR3.5	50000	3.5	ASC SIGNAL CORP.	ES35SRT-1	0	0 AGL	
		Max Gains(s):	44.6 dBi @	19.9500 GHz	48.0 dBi @	29.7500 GHz		
		Maximum total input power at antenna flange (Watts) =			185.00			
		Maximum aggregate output EIRP for all carriers (dBW) =			78.30			
TR98CM	TR98CM(1)	250000	0.98	GD SATCOM	AN8-098P			
		Max Gains(s):	44.6 dBi @	19.9500 GHz	48.0 dBi @	29.7500 GHz		
		Maximum total input power at antenna flange (Watts) =			3.50			
		Maximum aggregate output EIRP for all carriers (dBW) =			53.40			
TR98CM	TR98CM(2)	250000	0.98	SKYWARE GLOBAL	AN8-098R			
		Max Gains(s):	44.6 dBi @	19.9500 GHz	48.0 dBi @	29.7500 GHz		
		Maximum total input power at antenna flange (Watts) =			3.50			
		Maximum aggregate output EIRP for all carriers (dBW) =			53.40			

**F) Remote Control Point:**

TFTR1.2M

11717 EXPLORATION LANE

Call Sign:

GERMANTOWN, MONTGOMERY, MD 20876

301-428-7205



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**F) Remote Control Point:**

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TFTR74CM	11717 Exploration Lane Germantown, Montgomery, MD 20876 301-428-7205	Call Sign:
TFTR98CM	11717 EXPLORATION LANE GERMANTOWN, MONTGOMERY, MD 20876 301-428-7205	Call Sign:
TR1.2M	11717 Exploration Lane GERMANTOWN, MONTGOMERY, MD 20876 301-428-7205	Call Sign:
TR1.8M	11717 Exploration Lane Germantown, Montgomery, MD 20876 301-428-7205	Call Sign:
TR3.5M	11717 Exploration Lane Germantown, Montgomery, MD 20876 301-428-7205	Call Sign:
TR69CM	11717 EXPLORATION LANE GERMANTOWN, MONTGOMERY, MD 20876 301-428-7205	Call Sign:
TR74CM	11717 Exploration Lane Germantown, Montgomery, MD 20876 301-428-7205	Call Sign:
TR90CM	11717 EXPLORATION LANE GERMANTOWN, MONTGOMERY, MD 20876 301-428-7205	Call Sign:
TR98CM	11717 EXPLORATION LANE GERMANTOWN, MONTGOMERY, MD 20876 301-428-7205	Call Sign:



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

None unless otherwise specified under Special and General Provisions

**H) Special and General Provisions**

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

4 --- Licensee must ensure that a current listing of the name, title, mailing address, email address, and telephone number of the responsible point of contact are on file at the FCC. Any changes must be filed electronically in the International Bureau Filing System (MyIBFS) using the "Pleadings and Comments" link on the MyIBFS homepage within 10 days of the change.

8 --- Licensee must notify the Commission when all earth stations operating under this authorization are no longer operational or when they have not been used to provide any service during any 6-month operation.

5689 --- Fixed, temporary fixed, and mobile earth terminals authorized under a VSAT or other blanket license shall comply, as appropriate, with the notification and advance consultation provisions of Section 25.203(e), (f), (g), and (i) with the installation of each individual earth terminal falling within the protected radio zones defined in 25.203. This portion of the FCC Rules and Regulations provide protection from harmful interference to certain sensitive radio facilities located within the USA. These protected facilities include the National Radio Astronomy Observatory at Green Bank, West Virginia (25.203(f); Arecibo Observatory, Arecibo, Puerto Rico (25.203(i)); the Department of Commerce's research laboratories located within the Table Mountain Radio Receiving Zone, Boulder County, Colorado (25.203(e)); and the Federal Communications Commission's monitoring stations (25.203(g)).

9662 --- The 17.8 - 20.2 GHz band is shared with U.S. Government space stations and associated earth stations in the fixed-Satellite Services. Services within the United States over the satellite network of which this is a cooperating earth station are subject to coordination under US334 and operation of the earth station(s) authorized herein will be subject to any technical constraints resulting from this coordination. See 47 C.F.R. Section 2.106, Footnote US334.

90398 --- Changes to previously authorized transmitting facilities, operations and devices regulated by the Commission that may have significant environmental impact, and are not excluded by §1.1306, require the preparation of an Environmental Assessment (EA) by the licensee. (See 47 C.F.R. §§1.1307, 1.1308 and 1.1311)

90399 --- The licensee shall, at all times, take all necessary measures to ensure that operation of this (these) authorized earth station(s) 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. Physical 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.

90581 --- NG62 In the bands 28.5-29.1 GHz and 29.25-29.5 GHz, stations in the fixed-satellite service shall not cause harmful interference to, or claim protection from, stations in the fixed service operating under the following call signs: KEB35, KGB72, KGC79, KIL20, KME49, KQG58, KQH74, KSA96, KSE73, KVH83, KYJ33, KZS88, WAX78, WLT380, WMK817, WML443, WMP367, and WSL69.



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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:

90625 --- The 29.25-29.5 GHz band is designated for uplinks for FSS systems using geostationary satellites and for feeder uplinks for Mobile Satellite Systems using non-geostationary orbit satellites on a co-primary basis. Operations in the 29.25-29.5 GHz band must comply with Section 25.258 of the Commission's rules. 47 C.F.R. § 25.258.

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.**