



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION  
RADIO STATION AUTHORIZATION**

**Name:** HNS License Sub, LLC

**Call Sign:** E060445

**Authorization Type:** Modification of License

**File Number:** SES-MOD-20170726-00811

**Non Common Carrier**

**Grant date:** 10/11/2017

**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				83
		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	83
		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		83
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209				
4)	TFTR98CM	10,000 (1.0m) CONUS, AK, HI, PR, VI			0	83
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209				
5)	TR1.2M	100,000 (1.2m) 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				
6)	TR1.8M	50,000 (1.8m) 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				



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**A) Site Location(s)**

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	NAD	Special Provisions (Refer to Section H)
7)	TR3.5M	50,000 (3.5m) 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
8)	TR69CM	1,000,000 (69CM)				83	Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209
9)	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
10)	TR90CM	100,000 (90CM) CONUS, AK, HI, PR, VI				83	Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209
11)	TR98CM	250,000 (98cm) CONUS, AK, HI, PR, VI	0°0'0.0"N	0°0'0.0"W		83	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 October 11, 2018 (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 /4kHz (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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**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
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, PASK, DIGITAL CARRIER	
24)	29250.0000-30000.0000	L,R	650KG7W	Tx	45.80	23.70	74CM (FD)	512 KSPS, PSK, DIGITAL CARRIER	
25)	28350.0000-2860.0000	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 MSFS	
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, MSFS	30
92)	18300.0000-19300.0000	L,R	100KG7W	Rx			TFTR98(3)	QPSK, DATA, OUTROUTE, KSPS	64
93)	18300.0000-19300.0000	L,R	500MG7W	Rx			TFTR98(3)	QPSK, DATA, OUTROUTE, MSFS	30
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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Name: HNS License Sub, LLC

Call Sign: E060445

Authorization Type: Modification of License

File Number: SES-MOD-20170726-00811

Non Common Carrier

Grant date: 10/11/2017

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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File Number: SES-MOD-20170726-00811

Non Common Carrier

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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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**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)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	TR3.5
2)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		TR3.5
3)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	TFTR1.2
4)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		TFTR1.2
5)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	74CM(TA)
6)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		74CM(TA)
7)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	74CM(TB)
8)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		74CM(TB)
9)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	74CM(TC)
10)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		74CM(TC)
11)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	TFTR98(2)
12)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		TFTR98(2)
13)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	TFTR98CM
14)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		TFTR98CM
15)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	TFTR98(3)
16)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	0	TFTR98(3)
17)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	TR98CM(1)
18)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	0	TR98CM(1)
19)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	TR98CM(2)
20)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	0	TR98CM(2)
21)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	74CM(FA)
22)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		74CM(FA)
23)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	74CM(FC)
24)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		74CM(FC)
25)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	74CM(FB)
26)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		74CM(FB)
27)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	TR1.8
28)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		TR1.8
29)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	TR1.2
30)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		TR1.2
31)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	69CM
32)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		69CM
33)	29500.0000-30000.0000	95.0W	103.0W	43.4	43.6	172.2	184.7	-20	90CM
34)	19700.0000-20200.0000	95.0W	103.0W	43.4	43.6	172.2	184.7		90CM



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Non Common Carrier

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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:

- 1) TR3.5M to SPACEWAY 2 satellite @ 99 degrees W.L.
- 2) TR3.5M to SPACEWAY 1 satellite @103 degrees W.L.
- 3) TR3.5M to SPACEWAY 3 satellite @ 94.95 degrees W.L.
- 4) TR3.5M to AMC-15 (S2180) @ 105 degrees W.L.(U.S.-licensed)
- 5) TR3.5M to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 6) TR3.5M to EHOSTAR-9 @ 121 degrees W.L. satellite (U.S.-licensed)
- 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) TFTR1.2M to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 10) TFTR1.2M to AMC-15 (S2180) @ 105 degrees W.L.(U.S.-licensed)
- 11) TFTR1.2M to SPACEWAY 3 satellite @ 94.95 degrees W.L.
- 12) TFTR1.2M to EHOSTAR-9 @ 121 degrees W.L. satellite (U.S.-licensed)
- 13) TFTR1.2M to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 14) TFTR1.2M to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 15) TFTR74CM to SPACEWAY 2 satellite @ 99 degrees W.L.
- 16) TFTR74CM to SPACEWAY 1 satellite @103 degrees W.L.
- 17) TFTR74CM to DIRECTV 11 @ 99.2 W.L. satellite of the Direct Broadcast Satellite system (U.S.-licensed)
- 18) TFTR74CM to DIRECTV 10 @ 102.8 W.L. satellite of the Direct Broadcast Satellite system (U.S.-licensed)
- 19) TFTR74CM to SPACEWAY 3 satellite @ 94.95 degrees W.L.
- 20) TFTR74CM to AMC-15 (S2180) @ 105 degrees W.L.(U.S.-licensed)
- 21) TFTR74CM to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 22) TFTR74CM to EHOSTAR-9 @ 121 degrees W.L. satellite (U.S.-licensed)
- 23) TFTR74CM to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 24) TFTR74CM to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 25) TFTR98CM to SPACEWAY 1 satellite @103 degrees W.L.
- 26) TFTR98CM to SPACEWAY 2 satellite @ 99 degrees W.L.
- 27) TFTR98CM to AMC-15 (S2180) @ 105 degrees W.L.(U.S.-licensed)
- 28) TFTR98CM to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 29) TFTR98CM to SPACEWAY 3 satellite @ 94.95 degrees W.L.
- 30) TFTR98CM to EHOSTAR-9 @ 121 degrees W.L. satellite (U.S.-licensed)
- 31) TFTR98CM to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 32) TFTR98CM to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 33) TR98CM to SPACEWAY 1 satellite @103 degrees W.L.
- 34) TR98CM to SPACEWAY 2 satellite @ 99 degrees W.L.
- 35) TR98CM to SPACEWAY 3 satellite @ 94.95 degrees W.L.



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**D) Points of Communications**

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

- 36) TR98CM to AMC-15 (S2180) @ 105 degrees W.L.(U.S.-licensed)
- 37) TR98CM to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 38) TR98CM to EHOSTAR-9 @ 121 degrees W.L. satellite (U.S.-licensed)
- 39) TR98CM to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 40) TR98CM to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 41) TR74CM to SPACEWAY 2 satellite @ 99 degrees W.L.
- 42) TR74CM to SPACEWAY 1 satellite @103 degrees W.L.
- 43) TR74CM to DIRECTV 11 @ 99.2 W.L. satellite of the Direct Broadcast Satellite system (U.S.-licensed)
- 44) TR74CM to DIRECTV 10 @ 102.8 W.L. satellite of the Direct Broadcast Satellite system (U.S.-licensed)
- 45) TR74CM to AMC-15 (S2180) @ 105 degrees W.L.(U.S.-licensed)
- 46) TR74CM to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 47) TR74CM to SPACEWAY 3 satellite @ 94.95 degrees W.L.
- 48) TR74CM to EHOSTAR-9 @ 121 degrees W.L. satellite (U.S.-licensed)
- 49) TR74CM to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 50) TR74CM to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 51) TR1.8M to SPACEWAY 2 satellite @ 99 degrees W.L.
- 52) TR1.8M to SPACEWAY 1 satellite @103 degrees W.L.
- 53) TR1.8M to SPACEWAY 3 satellite @ 94.95 degrees W.L.
- 54) TR1.8M to AMC-15 (S2180) @ 105 degrees W.L.(U.S.-licensed)
- 55) TR1.8M to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 56) TR1.8M to EHOSTAR-9 @ 121 degrees W.L. satellite (U.S.-licensed)
- 57) TR1.8M to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 58) TR1.8M to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 59) TR1.2M to SPACEWAY 2 satellite @ 99 degrees W.L.
- 60) TR1.2M to SPACEWAY 1 satellite @103 degrees W.L.
- 61) TR1.2M to AMC-15 (S2180) @ 105 degrees W.L.(U.S.-licensed)
- 62) TR1.2M to SPACEWAY 3 satellite @ 94.95 degrees W.L.
- 63) TR1.2M to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 64) TR1.2M to EHOSTAR-9 @ 121 degrees W.L. satellite (U.S.-licensed)
- 65) TR1.2M to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 66) TR1.2M to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 67) TR69CM to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 68) TR69CM to SPACEWAY 1 satellite @103 degrees W.L.
- 69) TR69CM to SPACEWAY 3 satellite @ 94.95 degrees W.L.
- 70) TR69CM to AMC-15 (S2180) @ 105 degrees W.L.(U.S.-licensed)



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**D) Points of Communications**

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

- 71) TR69CM to ECHOSTAR-9 @ 121 degrees W.L. satellite (U.S.-licensed)
- 72) TR69CM to SPACEWAY 2 satellite @ 99 degrees W.L.
- 73) TR69CM to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 74) TR69CM to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 75) TR90CM to AMC 16 (S2181) @ 85 degrees W.L. (U.S.-licensed)
- 76) TR90CM to JUPITER 97 (S2834) @ 97 degrees W.L. (P.N.G. authorized)
- 77) TR90CM to Echostar XVII (S2753) @ 107.1 degrees W.L. (U.S.-licensed)
- 78) TR90CM to ECHOSTAR-9 @ 121 degrees W.L. satellite (U.S.-licensed)
- 79) TR90CM to AMC-15 (S2180) @ 105 degrees W.L.(U.S.-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						
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						



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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)
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				
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				



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**RADIO STATION AUTHORIZATION**

Name: HNS License Sub, LLC

Call Sign: E060445

Authorization Type: Modification of License

File Number: SES-MOD-20170726-00811

Non Common Carrier

Grant date: 10/11/2017

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)
TFTR98CM	TFTR98(2)	10000	0.98	SKYWARE GLOBAL	AN8-098RAN-098KF			
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			
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			





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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)
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 GERMANTOWN, MONTGOMERY, MD 20876 301-428-7205	Call Sign:
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:



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**F) Remote Control Point:**

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:

**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 (IBFS) in the "Other Filings" tab within 10 days of the change.
- 5 --- Licensee must notify the Commission when an earth station is no longer operational or when it has not been used to provide any service during any 6-month operation.

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.



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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:

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.



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**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 does not meet each required construction deadline by the required date of completion unless, before such date(s), a specific application is timely filed to request an extension of the construction deadline(s), supported with good cause why that failure to construct 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.**