



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION**

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**RADIO STATION AUTHORIZATION**

**Name:** Comsat, Inc.

**Call Sign:** E930320

**Authorization Type:** Modification of License

**File Number:** SES-MFS-20191010-01282

Common Carrier

**Grant date:** 10/21/2020

**Expiration Date:** 08/06/2033

**Nature of Service:** Earth Stations on-board Vessels

**Nature of Service:** Fixed Satellite Service

**Class of Station:** Fixed Earth Stations

**A) Site Location(s)**

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	Special Provisions NAD (Refer to Section H)
1)	REMOTE-1 ESV	250 (1.0 m antennas) CONUS,				NA
		Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.				
2)	REMOTE-2 ESV	250 (1.0 m antennas) CONUS,				NA
		Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.				
3)	REMOTE-3 ESV	50 (1.2 m antennas) CONUS,				NA
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209				
4)	REMOTE-4 ESV	350 (1.5 m antennas) CONUS,				NA
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209				
5)	REMOTE-5 ESV	500 (1.05M. antennas) CONUS,				NA
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209				
6)	SAPA08Ku	7676 PINE GROVE RD. (4.8 M. HUB2) SANTA PAULA, VENTURA, CA 93061	34°24'8.1"N	119°4'22.0"W	203.31	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)	SAPA10Ku	7676 PINE GROVE RD. (4.6 M. HUB1) SANTA PAULA, VENTURA, CA 93061	34°24'8.0"N	119°4'21.8"W	203.32	83	Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209
8)	SAPA19Ku	7676 PINE GROVE RD. (7.3 M. HUB3) SANTA PAULA, VENTURA, CA 93061	34°24'9.6"N	119°4'23.3"W	203.48	83	Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209
9)	SAPA40Ku	7676 PINE GROVE RD. (7.3 M. HUB4) SANTA PAULA, VENTURA, CA 93061	34°24'9.8"N	119°4'22.6"W	206.5	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 August 6, 2018 (3 AM Eastern Standard Time) and ending August 6, 2033 (3 AM Eastern Standard Time) . The required date of completion of construction and commencement of operation is October 21, 2021 (3 AM Eastern Standard Time) . Grantee must file with the Commission a certification upon completion of construction and commencement of operation.*

**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)	14000.0000-14500.0000	H,V	44K8G1W	Tx	34.40	23.90	ESV-4003A		SCPC USING QPSK AND BPSK MODULATION
2)	14000.0000-14500.0000	H,V	538KG1W	Tx	45.20	23.90	ESV-4003A		SCPC USING QPSK AND BPSK MODULATION
3)	14000.0000-14500.0000	H,V	89K6G1W	Tx	37.40	23.90	ESV-4003A		SCPC USING QPSK AND BPSK MODULATION



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4)	14000.0000-14500.0000	H, V	227KG7W	Tx	41.50	23.90	ESV-4003A		TDM/TDMA USING QPSK AND BPSK MODULATION
5)	14000.0000-14500.0000	H, V	340KG7W	Tx	43.20	23.90	ESV-4003A		TDM/TDMA USING QPSK AND BPSK MODULATION
6)	14000.0000-14500.0000	H, V	378KG7W	Tx	43.60	23.90	ESV-4003A		TDM/TDMA USING QPSK AND BPSK MODULATION
7)	14000.0000-14500.0000	H, V	454KG7W	Tx	44.50	23.90	ESV-4003A		TDM/TDMA USING QPSK AND BPSK MODULATION
8)	14000.0000-14500.0000	H, V	908KG7W	Tx	45.80	22.20	ESV-4003A		TDM/TDMA USING QPSK AND BPSK MODULATION
9)	14000.0000-14500.0000	H, V	1M40G7W	Tx	45.80	20.30	ESV-4003A		DVB/MFTDMA USING QPSK AND BPSK MODULATION
10)	14000.0000-14500.0000	H, V	316KG7W	Tx	42.80	23.90	ESV-4003A		DVB/MFTDMA USING QPSK AND BPSK MODULATION
11)	14000.0000-14500.0000	H, V	607KG7W	Tx	45.70	23.90	ESV-4003A		DVB/MFTDMA USING QPSK AND BPSK MODULATION
12)	11450.0000-12200.0000	H, V	44K8G1W	Rx			ESV-4003A		SCPC USING QPSK AND BPSK MODULATION
13)	11450.0000-12200.0000	H, V	717KG1W	Rx			ESV-4003A		SCPC USING QPSK AND BPSK MODULATION
14)	11450.0000-12200.0000	H, V	89K6G1W	Rx			ESV-4003A		SCPC USING QPSK AND BPSK MODULATION
15)	11450.0000-12200.0000	H, V	151KG7W	Rx			ESV-4003A		TDM/TDMA USING QPSK AND BPSK MODULATION
16)	11450.0000-12200.0000	H, V	54M0G7W	Rx			ESV-4003A		TDM/TDMA USING QPSK AND BPSK MODULATION
17)	11450.0000-12200.0000	H, V	2M60G7W	Rx			ESV-4003A		DVB/MFTDMA USING QPSK AND BPSK MODULATION
18)	11450.0000-12200.0000	H, V	54M0G7W	Rx			ESV-4003A		DVB/MFTDMA USING QPSK AND BPSK MODULATION
19)	10950.0000-11200.0000	H, V	44K8G1W	Rx			ESV-4003A		SCPC USING QPSK AND BPSK MODULATION
20)	10950.0000-11200.0000	H, V	717KG1W	Rx			ESV-4003A		SCPC USING QPSK AND BPSK MODULATION
21)	10950.0000-11200.0000	H, V	89K6G1W	Rx			ESV-4003A		SCPC USING QPSK AND BPSK MODULATION



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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
22)	10950.0000-11200.0000	H, V	151KG7W	Rx			ESV-4003A		TDM/TDMA USING QPSK AND BPSK MODULATION
23)	10950.0000-11200.0000	H, V	54M0G7W	Rx			ESV-4003A		TDM/TDMA USING QPSK AND BPSK MODULATION
24)	10950.0000-11200.0000	H, V	2M60G7W	Rx			ESV-4003A		DVB/MFTDMA USING QPSK AND BPSK MODULATION
25)	10950.0000-11200.0000	H, V	54M0G7W	Rx			ESV-4003A		DVB/MFTDMA USING QPSK AND BPSK MODULATION
26)	14000.0000-14500.0000	H, V	44K8G1W	Tx	34.40	23.90	ESV-4006		SCPC USING QPSK AND BPSK MODULATION
27)	14000.0000-14500.0000	H, V	717KG1W	Tx	46.40	23.90	ESV-4006		SCPC USING QPSK AND BPSK MODULATION
28)	14000.0000-14500.0000	H, V	89K6G1W	Tx	37.40	23.90	ESV-4006		SCPC USING QPSK AND BPSK MODULATION
29)	14000.0000-14500.0000	H, V	227KG7W	Tx	41.50	23.90	ESV-4006		TDM/TDMA USING QPSK AND BPSK MODULATION
30)	14000.0000-14500.0000	H, V	340KG7W	Tx	43.20	23.90	ESV-4006		TDM/TDMA USING QPSK AND BPSK MODULATION
31)	14000.0000-14500.0000	H, V	378KG7W	Tx	43.60	23.90	ESV-4006		TDM/TDMA USING QPSK AND BPSK MODULATION
32)	14000.0000-14500.0000	H, V	454KG7W	Tx	44.50	23.90	ESV-4006		TDM/TDMA USING QPSK AND BPSK MODULATION
33)	14000.0000-14500.0000	H, V	908KG7W	Tx	47.40	23.80	ESV-4006		TDM/TDMA USING QPSK AND BPSK MODULATION
34)	14000.0000-14500.0000	H, V	1M40G7W	Tx	47.40	21.90	ESV-4006		DVB/MFTDMA USING QPSK AND BPSK MODULATION
35)	14000.0000-14500.0000	H, V	316KG7W	Tx	43.80	23.90	ESV-4006		DVB/MFTDMA USING QPSK AND BPSK MODULATION
36)	14000.0000-14500.0000	H, V	607KG7W	Tx	45.70	23.90	ESV-4006		DVB/MFTDMA USING QPSK AND BPSK MODULATION
37)	11450.0000-12200.0000	H, V	44K8G1W	Rx			ESV-4006		SCPC USING QPSK AND BPSK MODULATION
38)	11450.0000-12200.0000	H, V	717KG1W	Rx			ESV-4006		SCPC USING QPSK AND BPSK MODULATION
39)	11450.0000-12200.0000	H, V	89K6G1W	Rx			ESV-4006		SCPC USING QPSK AND BPSK MODULATION



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The General Provision 1900 applies to all transmitting 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
40)	11450.0000-12200.0000	H, V	151KG7W	Rx			ESV-4006		TDM/TDMA USING QPSK AND BPSK MODULATION
41)	11450.0000-12200.0000	H, V	54M0G7W	Rx			ESV-4006		TDM/TDMA USING QPSK AND BPSK MODULATION
42)	11450.0000-12200.0000	H, V	2M60G7W	Rx			ESV-4006		DVB/MFTDMA USING QPSK AND BPSK MODULATION
43)	11450.0000-12200.0000	H, V	54M0G7W	Rx			ESV-4006		DVB/MFTDMA USING QPSK AND BPSK MODULATION
44)	10950.0000-11200.0000	H, V	44K8G1W	Rx			ESV-4006		SCPC USING QPSK AND BPSK MODULATION
45)	10950.0000-11200.0000	H, V	717KG1W	Rx			ESV-4006		SCPC USING QPSK AND BPSK MODULATION
46)	10950.0000-11200.0000	H, V	89K6G1W	Rx			ESV-4006		SCPC USING QPSK AND BPSK MODULATION
47)	10950.0000-11200.0000	H, V	151KG7W	Rx			ESV-4006		TDM/TDMA USING QPSK AND BPSK MODULATION
48)	10950.0000-11200.0000	H, V	54M0G7W	Rx			ESV-4006		TDM/TDMA USING QPSK AND BPSK MODULATION
49)	10950.0000-11200.0000	H, V	2M60G7W	Rx			ESV-4006		DVB/MFTDMA USING QPSK AND BPSK MODULATION
50)	10950.0000-11200.0000	H, V	54M0G7W	Rx			ESV-4006		DVB/MFTDMA USING QPSK AND BPSK MODULATION
51)	14000.0000-14500.0000	H, V	1M43G1W	Tx	51.10	26.60	ESV-4996T		SCPC USING QPSK AND BPSK MODULATION
52)	14000.0000-14500.0000	H, V	44K8G1W	Tx	36.10	25.60	ESV-4996T		SCPC USING QPSK AND BPSK MODULATION
53)	14000.0000-14500.0000	H, V	717KG1W	Tx	48.10	25.60	ESV-4996T		SCPC USING QPSK AND BPSK MODULATION
54)	14000.0000-14500.0000	H, V	89K6G1W	Tx	39.10	25.60	ESV-4996T		SCPC USING QPSK AND BPSK MODULATION
55)	11450.0000-12200.0000	H, V	1M43G1W	Rx			ESV-4996T		SCPC USING QPSK AND BPSK MODULATION
56)	11450.0000-12200.0000	H, V	44K8G1W	Rx			ESV-4996T		SCPC USING QPSK AND BPSK MODULATION
57)	11450.0000-12200.0000	H, V	717KG1W	Rx			ESV-4996T		SCPC USING QPSK AND BPSK MODULATION



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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
58)	11450.0000-12200.0000	H, V	89K6G1W	Rx			ESV-4996T		SCPC USING QPSK AND BPSK MODULATION
59)	10950.0000-11200.0000	H, V	1M43G1W	Rx			ESV-4996T		SCPC USING QPSK AND BPSK MODULATION
60)	10950.0000-11200.0000	H, V	44K8G1W	Rx			ESV-4996T		SCPC USING QPSK AND BPSK MODULATION
61)	10950.0000-11200.0000	H, V	717KG1W	Rx			ESV-4996T		SCPC USING QPSK AND BPSK MODULATION
62)	10950.0000-11200.0000	H, V	89K6G1W	Rx			ESV-4996T		SCPC USING QPSK AND BPSK MODULATION
63)	14000.0000-14500.0000	H, V	1M43G1W	Tx	52.00	29.50	ESV-6006		SCPC USING QPSK AND BPSK MODULATION
64)	14000.0000-14500.0000	H, V	2M35G1W	Tx	52.00	29.50	ESV-6006		SCPC USING QPSK AND BPSK MODULATION
65)	14000.0000-14500.0000	H, V	717KG1W	Tx	52.00	29.50	ESV-6006		SCPC USING QPSK AND BPSK MODULATION
66)	14000.0000-14500.0000	H, V	89K6G1W	Tx	43.00	29.50	ESV-6006		SCPC USING QPSK AND BPSK MODULATION
67)	14000.0000-14500.0000	H, V	194KG7W	Tx	46.40	29.50	ESV-6006		SCPC AND TDM/TDMA USING QPSK AND BPSK MODULATION
68)	14000.0000-14500.0000	H, V	291KG7W	Tx	48.10	29.50	ESV-6006		SCPC AND TDM/TDMA USING QPSK AND BPSK MODULATION
69)	14000.0000-14500.0000	H, V	388KG7W	Tx	49.10	29.50	ESV-6006		SCPC AND TDM/TDMA USING QPSK AND BPSK MODULATION
70)	14000.0000-14500.0000	H, V	81K0G7W	Tx	42.50	29.50	ESV-6006		SCPC AND TDM/TDMA USING QPSK AND BPSK MODULATION
71)	14000.0000-14500.0000	H, V	97K0G7W	Tx	43.40	29.50	ESV-6006		SCPC AND TDM/TDMA USING QPSK AND BPSK MODULATION
72)	11450.0000-12200.0000	H, V	44K8G1W	Rx			ESV-6006		SCPC USING QPSK AND BPSK MODULATION
73)	11450.0000-12200.0000	H, V	717KG1W	Rx			ESV-6006		SCPC USING QPSK AND BPSK MODULATION
74)	11450.0000-12200.0000	H, V	89K6G1W	Rx			ESV-6006		SCPC USING QPSK AND BPSK MODULATION
75)	11450.0000-12200.0000	H, V	1M43G1W	Rx			ESV-6006		SCPC USING QPSK ANAD BPSK MODULATION



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76)	11450.0000-12200.0000	H, V	2M35G1W	Rx			ESV-6006		SCPC USING QPSK ANAD BPSK MODULATION
77)	11450.0000-12200.0000	H, V	36M0G7W	Rx			ESV-6006		SCPC AND TDM/TDMA USING QPSK AND BPSK MODULATION
78)	11450.0000-12200.0000	H, V	81K0G7W	Rx			ESV-6006		SCPC AND TDM/TDMA USING QPSK AND BPSK MODULATION
79)	10950.0000-11200.0000	H, V	1M43G1W	Rx			ESV-6006		SCPC USING QPSK AND BPSK MODULATION
80)	10950.0000-11200.0000	H, V	2M35G1W	Rx			ESV-6006		SCPC USING QPSK AND BPSK MODULATION
81)	10950.0000-11200.0000	H, V	44K8G1W	Rx			ESV-6006		SCPC USING QPSK AND BPSK MODULATION
82)	10950.0000-11200.0000	H, V	717KG1W	Rx			ESV-6006		SCPC USING QPSK AND BPSK MODULATION
83)	10950.0000-11200.0000	H, V	89K6G1W	Rx			ESV-6006		SCPC USING QPSK AND BPSK MODULATION
84)	10950.0000-11200.0000	H, V	36M0G7W	Rx			ESV-6006		SCPC AND TDM/TDMA USING QPSK AND BPSK MODULATION
85)	10950.0000-11200.0000	H, V	81K0G7W	Rx			ESV-6006		SCPC AND TDM/TDMA USING QPSK AND BPSK MODULATION
86)	14000.0000-14500.0000	H, V	194KG7W	Tx	42.40	25.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
87)	14000.0000-14500.0000	H, V	1M16G7W	Tx	49.80	25.20	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
88)	14000.0000-14500.0000	H, V	1M36G7W	Tx	49.80	24.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
89)	14000.0000-14500.0000	H, V	1M55G7W	Tx	49.80	23.90	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
90)	14000.0000-14500.0000	H, V	291KG7W	Tx	44.10	25.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
91)	14000.0000-14500.0000	H, V	388KG7W	Tx	45.40	25.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
92)	14000.0000-14500.0000	H, V	44K8G1W	Tx	36.00	25.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
93)	14000.0000-14500.0000	H, V	485KG7W	Tx	46.30	25.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION



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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
94)	14000.0000-14500.0000	H, V	582KG7W	Tx	47.10	25.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
95)	14000.0000-14500.0000	H, V	64K0G7W	Tx	37.50	25.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
96)	14000.0000-14500.0000	H, V	679KG7W	Tx	47.80	25.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
97)	14000.0000-14500.0000	H, V	717KG1W	Tx	48.00	25.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
98)	14000.0000-14500.0000	H, V	776KG7W	Tx	48.40	25.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
99)	14000.0000-14500.0000	H, V	89K6G1W	Tx	39.00	25.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
100)	14000.0000-14500.0000	H, V	970KG7W	Tx	49.30	25.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
101)	14000.0000-14500.0000	H, V	97K0G7W	Tx	39.30	25.50	ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
102)	11450.0000-12200.0000	H, V	151KG7W	Rx			ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
103)	11450.0000-12200.0000	H, V	2M60G7W	Rx			ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
104)	11450.0000-12200.0000	H, V	44K8G1W	Rx			ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
105)	11450.0000-12200.0000	H, V	54M0G7W	Rx			ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
106)	11450.0000-12200.0000	H, V	717KG1W	Rx			ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
107)	11450.0000-12200.0000	H, V	89K6G1W	Rx			ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
108)	10950.0000-11200.0000	H, V	151KG7W	Rx			ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
109)	10950.0000-11200.0000	H, V	2M60G7W	Rx			ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
110)	10950.0000-11200.0000	H, V	44K8G1W	Rx			ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
111)	10950.0000-11200.0000	H, V	54M0G7W	Rx			ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION





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**RADIO STATION AUTHORIZATION**

Name: Comsat, Inc.

Call Sign: E930320

Authorization Type: Modification of License

File Number: SES-MFS-20191010-01282

Common Carrier

Grant date: 10/21/2020

Expiration Date: 08/06/2033

**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
112)	10950.0000-11200.0000	H, V	717KG1W	Rx			ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
113)	10950.0000-11200.0000	H, V	89K6G1W	Rx			ESV-V110		DIGITAL TRAFFIC USING QPSK AND BPSK MODULATION
114)	14000.0000-14500.0000	H, V	54M0D1W	Tx	45.20	3.88	SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
115)	14000.0000-14500.0000	H, V	54M0D7W	Tx	45.20	3.88	SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
116)	14000.0000-14500.0000	H, V	54M0F1W	Tx	45.20	3.88	SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
117)	14000.0000-14500.0000	H, V	54M0F7W	Tx	45.20	3.88	SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
118)	14000.0000-14500.0000	H, V	32K0D1W	Tx	45.20	36.18	SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
119)	14000.0000-14500.0000	H, V	32K0D7W	Tx	45.20	36.18	SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
120)	14000.0000-14500.0000	H, V	32K0F1W	Tx	45.20	36.18	SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
121)	14000.0000-14500.0000	H, V	32K0F7W	Tx	45.20	36.18	SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
122)	11450.0000-12200.0000	H, V	32K0D1W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
123)	11450.0000-12200.0000	H, V	32K0D7W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
124)	11450.0000-12200.0000	H, V	32K0F1W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
125)	11450.0000-12200.0000	H, V	32K0F7W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS



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**RADIO STATION AUTHORIZATION**

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**File Number:** SES-MFS-20191010-01282

Common Carrier

**Grant date:** 10/21/2020

**Expiration Date:** 08/06/2033

**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
126)	11450.0000-12200.0000	H, V	54M0D1W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
127)	11450.0000-12200.0000	H, V	54M0D7W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
128)	11450.0000-12200.0000	H, V	54M0F1W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
129)	11450.0000-12200.0000	H, V	54M0F7W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
130)	10950.0000-11200.0000	H, V	32K0D1W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
131)	10950.0000-11200.0000	H, V	32K0D7W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
132)	10950.0000-11200.0000	H, V	32K0F1W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
133)	10950.0000-11200.0000	H, V	32K0F7W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
134)	10950.0000-11200.0000	H, V	54M0D1W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
135)	10950.0000-11200.0000	H, V	54M0D7W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
136)	10950.0000-11200.0000	H, V	54M0F1W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
137)	10950.0000-11200.0000	H, V	54M0F7W	Rx			SAPA08Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
138)	14000.0000-14500.0000	H, V	54M0D1W	Tx	48.20	6.88	SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS



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Expiration Date: 08/06/2033

**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
139)	14000.0000-14500.0000	H, V	54M0D7W	Tx	48.20	6.88	SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
140)	14000.0000-14500.0000	H, V	54M0F1W	Tx	48.20	6.88	SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
141)	14000.0000-14500.0000	H, V	54M0F7W	Tx	48.20	6.88	SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
142)	14000.0000-14500.0000	H, V	32K0D1W	Tx	48.20	39.15	SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
143)	14000.0000-14500.0000	H, V	32K0D7W	Tx	48.20	39.15	SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
144)	14000.0000-14500.0000	H, V	32K0F1W	Tx	48.20	39.15	SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
145)	14000.0000-14500.0000	H, V	32K0F7W	Tx	48.20	39.15	SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
146)	11450.0000-12200.0000	H, V	32K0D1W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
147)	11450.0000-12200.0000	H, V	32K0D7W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
148)	11450.0000-12200.0000	H, V	32K0F1W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
149)	11450.0000-12200.0000	H, V	32K0F7W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
150)	11450.0000-12200.0000	H, V	54M0D1W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
151)	11450.0000-12200.0000	H, V	54M0D7W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS



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Common Carrier

**Grant date:** 10/21/2020

**Expiration Date:** 08/06/2033

**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
152)	11450.0000-12200.0000	H, V	54M0F1W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
153)	11450.0000-12200.0000	H, V	54M0F7W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
154)	10950.0000-11200.0000	H, V	32K0D1W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
155)	10950.0000-11200.0000	H, V	32K0D7W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
156)	10950.0000-11200.0000	H, V	32K0F1W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
157)	10950.0000-11200.0000	H, V	32K0F7W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
158)	10950.0000-11200.0000	H, V	54M0D1W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
159)	10950.0000-11200.0000	H, V	54M0D7W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
160)	10950.0000-11200.0000	H, V	54M0F1W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
161)	10950.0000-11200.0000	H, V	54M0F7W	Rx			SAPA10Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
162)	14000.0000-14500.0000	H, V	32K0D1W	Tx	45.20	36.18	SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
163)	14000.0000-14500.0000	H, V	32K0D7W	Tx	45.20	36.18	SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
164)	14000.0000-14500.0000	H, V	32K0F1W	Tx	45.20	36.18	SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS



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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
165)	14000.0000-14500.0000	H, V	32K0F7W	Tx	45.20	36.18	SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
166)	14000.0000-14500.0000	H, V	54M0D1W	Tx	54.80	13.48	SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
167)	14000.0000-14500.0000	H, V	54M0D7W	Tx	54.80	13.48	SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
168)	14000.0000-14500.0000	H, V	54M0F1W	Tx	54.80	13.48	SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
169)	14000.0000-14500.0000	H, V	54M0F7W	Tx	54.80	13.48	SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
170)	11450.0000-12200.0000	H, V	32K0D1W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
171)	11450.0000-12200.0000	H, V	32K0D7W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
172)	11450.0000-12200.0000	H, V	32K0F1W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
173)	11450.0000-12200.0000	H, V	32K0F7W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
174)	11450.0000-12200.0000	H, V	54M0D1W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
175)	11450.0000-12200.0000	H, V	54M0D7W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
176)	11450.0000-12200.0000	H, V	54M0F1W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
177)	11450.0000-12200.0000	H, V	54M0F7W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS



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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
178)	10950.0000-11200.0000	H, V	32K0D1W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
179)	10950.0000-11200.0000	H, V	32K0D7W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
180)	10950.0000-11200.0000	H, V	32K0F1W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
181)	10950.0000-11200.0000	H, V	32K0F7W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
182)	10950.0000-11200.0000	H, V	54M0D1W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
183)	10950.0000-11200.0000	H, V	54M0D7W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
184)	10950.0000-11200.0000	H, V	54M0F1W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
185)	10950.0000-11200.0000	H, V	54M0F7W	Rx			SAPA19Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
186)	14000.0000-14500.0000	H, V	32K0D1W	Tx	44.20	36.18	SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
187)	14000.0000-14500.0000	H, V	32K0D7W	Tx	44.20	36.18	SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
188)	14000.0000-14500.0000	H, V	32K0F1W	Tx	44.20	36.18	SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
189)	14000.0000-14500.0000	H, V	32K0F7W	Tx	44.20	36.18	SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
190)	14000.0000-14500.0000	H, V	54M0D1W	Tx	54.80	13.48	SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS



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Common Carrier

**Grant date:** 10/21/2020

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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
191)	14000.0000-14500.0000	H, V	54M0D7W	Tx	54.80	13.48	SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
192)	14000.0000-14500.0000	H, V	54M0F1W	Tx	54.80	13.48	SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
193)	14000.0000-14500.0000	H, V	54M0F7W	Tx	54.80	13.48	SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
194)	11450.0000-12200.0000	H, V	32K0D1W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
195)	11450.0000-12200.0000	H, V	32K0D7W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
196)	11450.0000-12200.0000	H, V	32K0F1W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
197)	11450.0000-12200.0000	H, V	32K0F7W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
198)	11450.0000-12200.0000	H, V	54M0D1W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
199)	11450.0000-12200.0000	H, V	54M0D7W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
200)	11450.0000-12200.0000	H, V	54M0F1W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
201)	11450.0000-12200.0000	H, V	54M0F7W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
202)	10950.0000-11200.0000	H, V	32K0D1W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
203)	10950.0000-11200.0000	H, V	32K0D7W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS



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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
204)	10950.0000-11200.0000	H, V	32K0F1W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
205)	10950.0000-11200.0000	H, V	32K0F7W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
206)	10950.0000-11200.0000	H, V	54M0D1W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
207)	10950.0000-11200.0000	H, V	54M0D7W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
208)	10950.0000-11200.0000	H, V	54M0F1W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS
209)	10950.0000-11200.0000	H, V	54M0F7W	Rx			SAPA40Ku		DIGITAL TRAFFIC USING PHASE AND AMPLITUDE MODULATIONS

**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)	11450.0000-12200.0000	60.0W	143.0W	20.0	42.0	164.0	260.0		ESV-6006
2)	10950.0000-11200.0000	60.0W	143.0W	20.0	42.0	164.0	260.0		ESV-6006
3)	14000.0000-14500.0000	60.0W	143.0W	20.0	42.0	164.0	260.0		ESV-4003A
4)	11450.0000-12200.0000	60.0W	143.0W	20.0	42.0	164.0	260.0		ESV-4003A
5)	10950.0000-11200.0000	60.0W	143.0W	20.0	42.0	164.0	260.0		ESV-4003A
6)	14000.0000-14500.0000	60.0W	143.0W	20.0	42.0	164.0	260.0		ESV-4006
7)	11450.0000-12200.0000	60.0W	143.0W	20.0	42.0	164.0	260.0		ESV-4006
8)	10950.0000-11200.0000	60.0W	143.0W	20.0	42.0	164.0	260.0		ESV-4006
9)	14000.0000-14500.0000	60.0W	143.0W	20.0	42.0	164.0	260.0		ESV-4996T
10)	11450.0000-12200.0000	60.0W	143.0W	20.0	42.0	164.0	260.0		ESV-4996T
11)	10950.0000-11200.0000	60.0W	143.0W	20.0	42.0	164.0	260.0		ESV-4996T
12)	14000.0000-14500.0000	60.0W	143.0W	20.0	42.0	164.0	260.0		ESV-V110





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**RADIO STATION AUTHORIZATION**

Name: Comsat, Inc.

Call Sign: E930320

Authorization Type: Modification of License

File Number: SES-MFS-20191010-01282

Common Carrier

Grant date: 10/21/2020

Expiration Date: 08/06/2033

**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		
13)	11450.0000-12200.0000	60.0W	-143.0W	20.0	-42.0	164.0	-260.0		ESV-V110
14)	10950.0000-11200.0000	60.0W	-143.0W	20.0	-42.0	164.0	-260.0		ESV-V110
15)	14000.0000-14500.0000	57.0W	-190.0W	14.0	-06.0	106.0	-260.0	14	SAPA10Ku
16)	10950.0000-12200.0000	57.0W	-190.0W	14.0	-06.0	106.0	-260.0	0	SAPA10Ku
17)	14000.0000-14500.0000	57.0W	-190.0W	14.0	-06.0	106.0	-260.0	14	SAPA08Ku
18)	10950.0000-12200.0000	57.0W	-190.0W	14.0	-06.0	106.0	-260.0	0	SAPA08Ku
19)	14000.0000-14500.0000	57.0W	-190.0W	14.0	-06.0	106.0	-260.0	14	SAPA19Ku
20)	14000.0000-14500.0000	57.0W	-190.0W	14.0	-06.0	106.0	-260.0	0	SAPA19Ku
21)	14000.0000-14500.0000	57.0W	-190.0W	14.0	-06.0	106.0	-260.0	14	SAPA40Ku
22)	10950.0000-12200.0000	57.0W	-190.0W	14.0	-06.0	106.0	-260.0	0	SAPA40Ku

**D) Points of Communications**

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

- 1) REMOTE-4 ESV to EUTELSAT 117 WA (S2873) @ 116.8 W.L. (France licensed)
- 2) REMOTE-4 ESV to Permitted Space Station List
- 3) REMOTE-1 ESV to EUTELSAT 117 WA (S2873) @ 116.8 W.L. (France licensed)
- 4) REMOTE-1 ESV to Permitted Space Station List
- 5) REMOTE-2 ESV to EUTELSAT 117 WA (S2873) @ 116.8 W.L. (France licensed)
- 6) REMOTE-2 ESV to Permitted Space Station List
- 7) REMOTE-3 ESV to EUTELSAT 117 WA (S2873) @ 116.8 W.L. (France licensed)
- 8) REMOTE-3 ESV to Permitted Space Station List
- 9) REMOTE-5 ESV to Permitted Space Station List
- 10) SAPA10Ku to EUTELSAT 172B (S3021) @ 172degrees E.L. (US & France licensed)
- 11) SAPA10Ku to EUTELSAT 133 WA (S3031) @ 132.85 W.L. (France licensed)
- 12) SAPA10Ku to Permitted Space Station List
- 13) SAPA08Ku to Permitted Space Station List
- 14) SAPA08Ku to EUTELSAT 133 WA (S3031) @ 132.85 W.L. (France licensed)
- 15) SAPA08Ku to EUTELSAT 172B (S3021) @ 172degrees E.L. (US & France licensed)
- 16) SAPA19Ku to Permitted Space Station List
- 17) SAPA19Ku to EUTELSAT 133 WA (S3031) @ 132.85 W.L. (France licensed)
- 18) SAPA19Ku to EUTELSAT 172B (S3021) @ 172degrees E.L. (US & France licensed)
- 19) SAPA40Ku to EUTELSAT 133 WA (S3031) @ 132.85 W.L. (France licensed)
- 20) SAPA40Ku to EUTELSAT 172B (S3021) @ 172degrees E.L. (US & France licensed)



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**RADIO STATION AUTHORIZATION**

Name: Comsat, Inc.

Call Sign: E930320

Authorization Type: Modification of License

File Number: SES-MFS-20191010-01282

Common Carrier

Grant date: 10/21/2020

Expiration Date: 08/06/2033

**D) Points of Communications**

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

21) SAPA40Ku to Permitted Space Station List

**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)
REMOTE-1	ESV-4003A	250	1	SEATEL	4003A			
	Max Gains(s):	40.1 dBi @	11.9500 GHz	41.8 dBi @	14.2500 GHz			
	Maximum total input power at antenna flange (Watts) =				2.50			
	Maximum aggregate output EIRP for all carriers (dBW) =				45.80			
REMOTE-2	ESV-4006	250	1	SEATEL	4006			
	Max Gains(s):	40.1 dBi @	11.9500 GHz	41.8 dBi @	14.2500 GHz			
	Maximum total input power at antenna flange (Watts) =				3.60			
	Maximum aggregate output EIRP for all carriers (dBW) =				47.40			
REMOTE-3	ESV-4996T	50	1.2	SEATEL	4996T			
	Max Gains(s):	41.6 dBi @	11.9500 GHz	42.5 dBi @	14.2500 GHz			
	Maximum total input power at antenna flange (Watts) =				7.10			
	Maximum aggregate output EIRP for all carriers (dBW) =				51.10			
REMOTE-4	ESV-6006	350	1.5	SEATEL	6006			
	Max Gains(s):	42.5 dBi @	12.0000 GHz	43.5 dBi @	14.2000 GHz			
	Maximum total input power at antenna flange (Watts) =				7.13			
	Maximum aggregate output EIRP for all carriers (dBW) =				52.00			
REMOTE-5	ESV-V110	500	1.05	INTELLIAN	V110			
	Max Gains(s):	39.6 dBi @	12.2000 GHz	41.7 dBi @	14.2500 GHz			
	Maximum total input power at antenna flange (Watts) =				6.97			
	Maximum aggregate output EIRP for all carriers (dBW) =				49.83			



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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)	
SAPA08Ku	SAPA08Ku	1	4.8	VERTEX	K48PMFRL1-G/C	203.31	5.8 AGL/ 209.11 AMSL		
		Max Gains(s): 53.2 dBi @ 11.7500 GHz		55.2 dBi @ 14.2500 GHz					
		Maximum total input power at antenna flange (Watts) =				400.00			
		Maximum aggregate output EIRP for all carriers (dBW) =				79.20			
SAPA10Ku	SAPA10Ku	1	4.6	ANDREWS	02-210 OMT304496461	203.32	5.6 AGL/ 208.92 AMSL		
		Max Gains(s): 53.5 dBi @ 11.9500 GHz		55.0 dBi @ 14.2500 GHz					
		Maximum total input power at antenna flange (Watts) =				358.50			
		Maximum aggregate output EIRP for all carriers (dBW) =				79.00			
SAPA19Ku	SAPA19Ku	1	7.3	GENERAL DYNAMICS	GD 7.3M KU	203.48	8.1 AGL/ 211.58 AMSL		
		Max Gains(s): 57.4 dBi @ 12.0000 GHz		58.2 dBi @ 14.2500 GHz					
		Maximum total input power at antenna flange (Watts) =				750.00			
		Maximum aggregate output EIRP for all carriers (dBW) =				85.10			
SAPA40Ku	SAPA40Ku	1	7.3	GENERAL DYNAMICS	GD 7.3M KU	206.5	8.1 AGL/ 214.6 AMSL		
		Max Gains(s): 57.4 dBi @ 12.0000 GHz		58.2 dBi @ 14.2500 GHz					
		Maximum total input power at antenna flange (Watts) =				750.00			
		Maximum aggregate output EIRP for all carriers (dBW) =				85.10			

**F) Remote Control Point:**

REMOTE-1 7676 PINE GROVE ROAD  
ESV

Call Sign: E930320

SANTA PAULA, VENTURA, CA 93060  
805-933-4000

REMOTE-2 7676 PINE GROVE ROAD  
ESV

Call Sign: E930320

SANTA PAULA, VENTURA, CA 93060  
805-933-4000



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**F) Remote Control Point:**

REMOTE-3 7676 PINE GROVE ROAD  
ESV

Call Sign: E930320

SANTA PAULA, VENTURA, CA 93060  
805-933-4000

REMOTE-4 7676 PINE GROVE ROAD  
ESV

Call Sign: E930320

SANTA PAULA, VENTURA, CA 93060  
805-933-4000

REMOTE-5 7676 PINE GROVE ROAD  
ESV

Call Sign: E930320

SANTA PAULA, VENTURA, CA 93060  
805-933-4030

**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.

6 --- Licensee must comply with the license modification and notification requirements of 47 CFR § 25.118 to change the coordinates of its authorized earth station.

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.

102 --- 24 Hour Contact: Applicant has provided the name and telephone number of a contact person in the United States, available seven days a week, twenty-four hours a day, for cessation of emissions from suspected source of interference in the event of need to resolve interference issues, on direction from authority with jurisdiction for licensing in the area of operation.

105 --- Subject to Rule Making: This license is subject to the outcome of any future rule making concerning ESV operations. Grant of this authorization shall not prejudice the outcome of any rulemaking.



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**Expiration Date:** 08/06/2033

## H) Special and General Provisions

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

- 249 --- This license is granted authority to provide services for both Earth Stations on-board Vessels (ESV) and VSAT Network.
- 90013 --- The licensee shall not operate in the band 14.0-14.2 GHz within 125 km of the NASA TDRSS facilities on Guam (located at latitude 13°36'55" N, longitude 144°51'22" E) or White Sands, New Mexico (located at latitude 32°20'59" N, longitude 106°36'31" W and latitude 32°32'40" N, longitude 106°36'48" W), or any future TDRSS facility NTIA notifies to the FCC, unless and until the licensee enters into an agreement with NASA that NTIA has approved. The licensee must conform its operations to the terms of any coordination agreement with the NASA and must file a copy of the agreement with the Commission within 30 days of execution.
- 90014 --- The licensee shall not operate in the band 14.47-14.50 GHz within (a) 45 km of the radio observatory on St. Croix, Virgin Islands (located at latitude 17°46' N, longitude 64°35' W); (b) 125 km of the radio observatory on Mauna Kea, Hawaii (located at latitude 19°48' N, longitude 155°28' W); and (c) 90 km of the Arecibo Observatory on Puerto Rico (located at latitude 18°20'46" W, longitude 66°45'11" N) unless and until the licensee enters into an agreement with the National Science Foundation that has been approved by NTIA. The licensee must conform its operations to the terms of any coordination agreement with the National Science Foundation and must file a copy of the agreement with the Commission within 30 days of execution.
- 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.
- 90405 --- Operations with PERMITTED LIST satellite must comply with §25.212 levels and operations above these levels must coordinate with satellite operators prior to operations.



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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:

900407 --- The Permitted Space Station List (Permitted List) is a list of all geostationary space stations providing fixed-satellite service pursuant to a Commission license or grant of U.S. market access. The Permitted List currently includes the following frequency bands per §25.103 and §25.115(k)(1):

- 3600-4200 MHz (space-to-Earth)
- 5850-6725 MHz (Earth-to-space)
- 10.95-11.2 GHz (space-to-Earth)
- 11.45-12.2 GHz (space-to-Earth)
- 13.75-14.5 GHz (Earth-to-space)
- 18.3-18.8 GHz (space-to-Earth)
- 19.7-20.2 GHz (space-to-Earth)
- 24.75-25.25 GHz (Earth-to-space)
- 28.35-28.6 GHz (Earth-to-space)
- 29.25-30.0 GHz (Earth-to-space).

Earth stations with "Permitted List" designated as a point of communication may access any space station on the Permitted List, provided the operations comply with the applicable "routine" uplink and downlink limits, are within the specific frequency bands authorized in the earth station license, have completed coordination with terrestrial stations pursuant to §25.203, and otherwise comply with all terms and conditions of both the earth station license and the space station grant.



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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.**