



**UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION**

RADIO STATION AUTHORIZATION

Name: Telesat Network Services, Inc.

Call Sign: E030029

Authorization Type: Modification of License

File Number: SES-MOD-20150701-00437

Non Common Carrier

Grant date: 02/23/2016

Expiration Date: 03/20/2018



Nature of Service: Fixed Satellite Service

Class of Station: Fixed Earth Stations

A) Site Location(s)

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	NAD	Special Provisions (Refer to Section H)
1)	1 HUB	1305 INDUSTRIAL PARK ROAD (9.0M. HUB) MT. JACKSON, SHENANDOAH, VA 22842	38°43'42.0"N	78°39'25.0"W	282.9	83	Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209
2)	REMOTE 1	(0.95M.VSAT) CONUS, (5000 UNITS),					UNK Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209
3)	REMOTE 10P	1305 INDUSTRIAL PARK ROAD (1.8M. VSAT) CONUS, (5000 UNITS),					UNK Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209
4)	REMOTE 11PROD	1305 INDUSTRIAL PARK ROAD (2.4M. VSAT) CONUS, (5000 UNITS),					UNK Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209
5)	REMOTE 2	(1.2M. VSAT) CONUS, (5000 UNITS),					UNK Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209
6)	REMOTE 3	(1.8M. VSAT) CONUS, (5000 UNITS),					UNK 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)	REMOTE 4	(.96M. VSAT) CONUS, (5000 UNITS),				UNK	
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209					
8)	REMOTE 5	(1.2M. VSAT) CONUS, (5000 UNITS),				UNK	
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209					
9)	REMOTE 6	(1.8M. VSAT) CONUS, (5000 UNITS),				UNK	
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209					
10)	REMOTE 7	(2.4M. VSAT) CONUS, (5000 UNITS),				UNK	
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209					
11)	REMOTE 8P	1305 INDUSTRIAL PARK ROAD (2.4M. VSAT) CONUS, (5000 UNITS),				UNK	
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209					
12)	REMOTE 9P	1305 INDUSTRIAL PARK ROAD (1.2M. VSAT) CONUS, (5000 UNITS),				UNK	
		Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209					
13)	REMOTE12	1305 INDUSTRIAL PARK ROAD (1.2M. VSAT) ENSURE CONUS, 5000 UNITS,				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)
14)	REMOTE13	1305 INDUSTRIAL PARK ROAD (1.2M. VSAT) ENSURE CONUS, 5000 UNITS,				NA	
Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209							
15)	REMOTE14	1305 INDUSTRIAL PARK ROAD (1.8M. VSAT) ENSURE CONUS, 5000 UNITS,				NA	
Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209							
16)	REMOTE15	1305 INDUSTRIAL PARK ROAD (1.8M. VSAT) ENSURE CONUS, 5000 UNITS,				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 March 20, 2003 (3 AM Eastern Standard Time) and ending March 20, 2018 (3 AM Eastern Standard Time) . The required date of completion of construction and commencement of operation is February 23, 2017 (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	324KG7W	Tx	44.70	25.60	0.95M/R		QPSK 144 KBPS
2)	14000.0000-14500.0000	H,V	842KG7W	Tx	44.70	21.50	0.95M/R		QPSK 384 KBPS
3)	14000.0000-14500.0000	H,V	4M41G7W	Tx	44.70	14.30	0.95M/R		QPSK 2048 KBPS



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4)	14000.0000-14500.0000	H, V	3M17G7W	Tx	44.70	15.70	0.95M/R		QPSK 2048 KBPS, RATE 1/2 CODE
5)	14000.0000-14500.0000	H, V	360KG7W	Tx	41.70	21.90	0.95M/R		QPSK 144 KBPS, CONCATENATED CODE
6)	14000.0000-14500.0000	H, V	360KG7W	Tx	44.70	25.20	0.95M/R		QPSK 144 KBPS, CONCATENATED CODE
7)	14000.0000-14500.0000	H, V	936KG7W	Tx	41.70	17.80	0.95M/R		QPSK 384 KBPS, CONCATENATED CODE
8)	14000.0000-14500.0000	H, V	936KG7W	Tx	44.70	21.00	0.95M/R		QPSK 384 KBPS, CONCATENATED CODE
9)	14000.0000-14500.0000	H, V	2M45G7W	Tx	41.70	13.80	0.95M/R		QPSK 1024 KBPS, CONCATENATED CODE
10)	14000.0000-14500.0000	H, V	2M45G7W	Tx	44.70	16.80	0.95M/R		QPSK 1024 KBPS, CONCATENATED CODE
11)	14000.0000-14500.0000	H, V	4M90G7W	Tx	41.70	10.80	0.95M/R		QPSK 2048 KBPS, CONCATENATED CODE
12)	14000.0000-14500.0000	H, V	4M90G7W	Tx	44.70	13.80	0.95M/R		QPSK 2048 KBPS, CONCATENATED CODE
13)	11700.0000-12200.0000	H, V	54M0G7W	Rx			0.95M/R		QPSK 48MBPS 2/3 FEC
14)	11700.0000-12200.0000	H, V	3M91G7W	Rx			0.95M/R		QPSK 3MBPS HUB OUTBOUND TO VSAT
15)	11700.0000-12200.0000	H, V	8M79G7W	Rx			0.95M/R		QPSK 8MBPS HUB OUTBOUND TO VSAT
16)	14000.0000-14500.0000	H, V	380KG7W	Tx	38.20	18.40	0.96M/CM		QPSK 256 KBPS, TURBO CODE
17)	14000.0000-14500.0000	H, V	380KG7W	Tx	44.20	24.40	0.96M/CM		QPSK 256 KBPS, TURBO CODE
18)	14000.0000-14500.0000	H, V	3M00G7W	Tx	38.20	9.40	0.96M/CM		QPSK 2048 KBPS, TURBO CODE
19)	14000.0000-14500.0000	H, V	750KG7W	Tx	38.20	15.50	0.96M/CM		QPSK 512 KBPS, TURBO CODE
20)	14000.0000-14500.0000	H, V	750KG7W	Tx	44.20	21.50	0.96M/CM		QPSK 512 KBPS, TURBO CODE
21)	14000.0000-14500.0000	H, V	1M50G7W	Tx	38.20	12.40	0.96M/CM		QPSK 1024 KBPS, TURBO CODE
22)	14000.0000-14500.0000	H, V	1M50G7W	Tx	44.20	18.40	0.96M/CM		QPSK 1024 KBPS, TURBO CODE
23)	14000.0000-14500.0000	H, V	3M00G7W	Tx	44.20	15.40	0.96M/CM		QPSK 2048 KBPS, TURBO CODE



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B) Particulars of Operations

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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
24)	14000.0000-14500.0000	H, V	360KG7W	Tx	38.20	18.60	0.96M/CM		QPSK 144 KBPS, CONCATENATED CODE
25)	14000.0000-14500.0000	H, V	360KG7W	Tx	44.20	24.70	0.96M/CM		QPSK 144 KBPS, CONCATENATED CODE
26)	14000.0000-14500.0000	H, V	4M90G7W	Tx	38.20	7.30	0.96M/CM		QPSK 2048 KBPS, CONCATENATED CODE
27)	14000.0000-14500.0000	H, V	936KG7W	Tx	38.20	14.50	0.96M/CM		QPSK 384 KBPS, CONCATENATED CODE
28)	14000.0000-14500.0000	H, V	936KG7W	Tx	44.20	20.50	0.96M/CM		QPSK 384 KBPS, CONCATENATED CODE
29)	14000.0000-14500.0000	H, V	2M45G7W	Tx	38.20	10.30	0.96M/CM		QPSK 1024 KBPS, CONCATENATED CODE
30)	14000.0000-14500.0000	H, V	2M45G7W	Tx	44.20	16.30	0.96M/CM		QPSK 1024 KBPS, CONCATENATED CODE
31)	14000.0000-14500.0000	H, V	4M90G7W	Tx	44.20	13.30	0.96M/CM		QPSK 2048 KBPS, CONCATENATED CODE
32)	11700.0000-12200.0000	H, V	54M0G7W	Rx			0.96M/CM		QPSK 48MBPS 2/3 FEC
33)	11700.0000-12200.0000	H, V	3M91G7W	Rx			0.96M/CM		QPSK 3MBPS HUB OUTBOUND TO VSAT
34)	11700.0000-12200.0000	H, V	8M79G7W	Rx			0.96M/CM		QPSK 8MBPS HUB OUTBOUND TO VSAT
35)	14000.0000-14500.0000	H, V	380KG7W	Tx	43.30	23.50	1.2M/CM		QPSK 256 KBPS, TURBO CODE
36)	14000.0000-14500.0000	H, V	380KG7W	Tx	46.30	26.50	1.2M/CM		QPSK 256 KBPS, TURBO CODE
37)	14000.0000-14500.0000	H, V	750KG7W	Tx	43.30	20.60	1.2M/CM		QPSK 512 KBPS, TURBO CODE
38)	14000.0000-14500.0000	H, V	750KG7W	Tx	46.30	23.60	1.2M/CM		QPSK 512 KBPS, TURBO CODE
39)	14000.0000-14500.0000	H, V	1M50G7W	Tx	43.30	17.60	1.2M/CM		QPSK 1024 KBPS, TURBO CODE
40)	14000.0000-14500.0000	H, V	1M50G7W	Tx	46.30	20.60	1.2M/CM		QPSK 1024 KBPS, TURBO CODE
41)	14000.0000-14500.0000	H, V	3M00G7W	Tx	43.30	14.60	1.2M/CM		QPSK 2048 KBPS, TURBO CODE
42)	14000.0000-14500.0000	H, V	3M00G7W	Tx	46.30	17.60	1.2M/CM		QPSK 2048 KBPS, TURBO CODE
43)	14000.0000-14500.0000	H, V	360KG7W	Tx	43.30	23.80	1.2M/CM		QPSK 144 KBPS, CONCATENATED CODE



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44)	14000.0000-14500.0000	H, V	360KG7W	Tx	46.30	26.80	1.2M/CM		QPSK 144 KBPS, CONCATENATED CODE
45)	14000.0000-14500.0000	H, V	936KG7W	Tx	43.30	19.60	1.2M/CM		QPSK 384 KBPS, CONCATENATED CODE
46)	14000.0000-14500.0000	H, V	936KG7W	Tx	46.30	22.60	1.2M/CM		QPSK 384 KBPS, CONCATENATED CODE
47)	14000.0000-14500.0000	H, V	2M45G7W	Tx	43.30	15.40	1.2M/CM		QPSK 1024 KBPS, CONCATENATED CODE
48)	14000.0000-14500.0000	H, V	2M45G7W	Tx	46.30	18.40	1.2M/CM		QPSK 1024 KBPS, CONCATENATED CODE
49)	14000.0000-14500.0000	H, V	4M90G7W	Tx	43.30	12.40	1.2M/CM		QPSK 2048 KBPS, CONCATENATED CODE
50)	14000.0000-14500.0000	H, V	4M90G7W	Tx	46.30	15.40	1.2M/CM		QPSK 2048 KBPS, CONCATENATED CODE
51)	11700.0000-12200.0000	H, V	54M0G7W	Rx			1.2M/CM		QPSK 48MBPS 2/3 FEC
52)	11700.0000-12200.0000	H, V	3M91G7W	Rx			1.2M/CM		QPSK 3MBPS HUB OUTBOUND TO VSAT
53)	11700.0000-12200.0000	H, V	8M79G7W	Rx			1.2M/CM		QPSK 8MBPS HUB OUTBOUND TO VSAT
54)	14000.0000-14500.0000	H, V	324KG7W	Tx	46.00	26.90	1.2M/P		QPSK 144 KBPS
55)	14000.0000-14500.0000	H, V	842KG7W	Tx	46.00	22.80	1.2M/P		QPSK 384 KBPS
56)	14000.0000-14500.0000	H, V	4M41G7W	Tx	46.00	15.60	1.2M/P		QPSK 2048 KBPS
57)	14000.0000-14500.0000	H, V	380KG7W	Tx	43.30	23.50	1.2M/P		QPSK 256 KBPS, TURBO CODE
58)	14000.0000-14500.0000	H, V	750KG7W	Tx	43.30	20.60	1.2M/P		QPSK 512 KBPS, TURBO CODE
59)	14000.0000-14500.0000	H, V	1M50G7W	Tx	43.30	17.60	1.2M/P		QPSK 1024 KBPS, TURBO CODE
60)	14000.0000-14500.0000	H, V	3M00G7W	Tx	43.30	14.60	1.2M/P		QPSK 2048 KBPS, TURBO CODE
61)	14000.0000-14500.0000	H, V	3M17G7W	Tx	46.00	17.00	1.2M/P		QPSK 2048 KBPS, RATE 1/2 CODE
62)	14000.0000-14500.0000	H, V	360KG7W	Tx	43.30	23.80	1.2M/P		QPSK 144 KBPS, CONCATENATED CODE
63)	14000.0000-14500.0000	H, V	360KG7W	Tx	46.00	26.44	1.2M/P		QPSK 144 KBPS, CONCATENATED CODE



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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
64)	14000.0000-14500.0000	H, V	936KG7W	Tx	43.30	19.60	1.2M/P		QPSK 384 KBPS, CONCATENATED CODE
65)	14000.0000-14500.0000	H, V	936KG7W	Tx	46.00	22.29	1.2M/P		QPSK 384 KBPS, CONCATENATED CODE
66)	14000.0000-14500.0000	H, V	2M45G7W	Tx	43.30	15.40	1.2M/P		QPSK 1024 KBPS, CONCATENATED CODE
67)	14000.0000-14500.0000	H, V	2M45G7W	Tx	46.00	18.11	1.2M/P		QPSK 1024 KBPS, CONCATENATED CODE
68)	14000.0000-14500.0000	H, V	4M90G7W	Tx	43.30	12.40	1.2M/P		QPSK 2048 KBPS, CONCATENATED CODE
69)	14000.0000-14500.0000	H, V	4M90G7W	Tx	46.00	15.10	1.2M/P		QPSK 2048 KBPS, CONCATENATED CODE
70)	11700.0000-12200.0000	H, V	54M0G7W	Rx	0.00		1.2M/P		QPSK 48MBPS 2/3 FEC
71)	11700.0000-12200.0000	H, V	3M91G7W	Rx			1.2M/P		QPSK 3MBPS HUB OUTBOUND TO VSAT
72)	11700.0000-12200.0000	H, V	8M79G7W	Rx			1.2M/P		QPSK 8MBPS HUB OUTBOUND TO VSAT
73)	14000.0000-14500.0000	H, V	380KG7W	Tx	43.30	23.40	1.2M/PAT		256 KBPS 2/3FEC TURBO CODE
74)	14000.0000-14500.0000	H, V	3M00G7W	Tx	43.30	14.50	1.2M/PAT		2048KBPS 2/3FEC TURBO CODE
75)	11700.0000-12200.0000	H, V	3M91G7W	Rx			1.2M/PAT		3 MBPS 2/3 FEC HUB OUTBOUND TO VSAT
76)	11700.0000-12200.0000	H, V	54M0G7W	Rx			1.2M/PAT		48 MBPS 2/3 FEC HUB OUTBOUND TO VSAT
77)	14000.0000-14500.0000	H, V	380KG7W	Tx	49.80	30.00	1.8M/CM		QPSK 256 KBPS, TURBO CODE
78)	14000.0000-14500.0000	H, V	380KG7W	Tx	52.60	32.80	1.8M/CM		QPSK 256 KBPS, TURBO CODE
79)	14000.0000-14500.0000	H, V	750KG7W	Tx	49.80	27.10	1.8M/CM		QPSK 512 KBPS, TURBO CODE
80)	14000.0000-14500.0000	H, V	750KG7W	Tx	52.80	30.10	1.8M/CM		QPSK 512 KBPS, TURBO CODE
81)	14000.0000-14500.0000	H, V	1M50G7W	Tx	49.80	24.10	1.8M/CM		QPSK 1024 KBPS, TURBO CODE
82)	14000.0000-14500.0000	H, V	1M50G7W	Tx	52.80	27.10	1.8M/CM		QPSK 1024 KBPS, TURBO CODE
83)	14000.0000-14500.0000	H, V	3M00G7W	Tx	49.80	21.10	1.8M/CM		QPSK 2048 KBPS, TURBO CODE
84)	14000.0000-14500.0000	H, V	3M00G7W	Tx	52.80	24.10	1.8M/CM		QPSK 2048 KBPS, TURBO CODE



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85)	14000.0000-14500.0000	H, V	360KG7W	Tx	49.80	30.30	1.8M/CM		QPSK 144 KBPS, CONCATENATED CODE
86)	14000.0000-14500.0000	H, V	360KG7W	Tx	52.30	32.80	1.8M/CM		QPSK 144 KBPS, CONCATENATED CODE
87)	14000.0000-14500.0000	H, V	936KG7W	Tx	52.80	29.10	1.8M/CM		QPSK 384 KBPS, CONCATENATED CODE
88)	14000.0000-14500.0000	H, V	2M45G7W	Tx	49.80	21.90	1.8M/CM		QPSK 1024 KBPS, CONCATENATED CODE
89)	14000.0000-14500.0000	H, V	2M45G7W	Tx	52.80	24.90	1.8M/CM		QPSK 1024 KBPS, CONCATENATED CODE
90)	14000.0000-14500.0000	H, V	4M90G7W	Tx	49.80	18.90	1.8M/CM		QPSK 2048 KBPS, CONCATENATED CODE
91)	14000.0000-14500.0000	H, V	4M90G7W	Tx	52.80	21.90	1.8M/CM		QPSK 2048 KBPS, CONCATENATED CODE
92)	14000.0000-14500.0000	H, V	936KG7W	Tx	49.80	26.10	1.8M/CM		QPSK 384 KBPS, CONCATENATED CODE
93)	11700.0000-12200.0000	H, V	54M0G7W	Rx			1.8M/CM		QPSK 48MBPS 2/3 FEC
94)	11700.0000-12200.0000	H, V	3M91G7W	Rx			1.8M/CM		QPSK 3MBPS HUB OUTBOUND TO VSAT
95)	11700.0000-12200.0000	H, V	8M79G7W	Rx			1.8M/CM		QPSK 8MBPS HUB OUTBOUND TO VSAT
96)	14000.0000-14500.0000	H, V	324KG7W	Tx	49.70	30.60	1.8M/P		QPSK 144 KBPS
97)	14000.0000-14500.0000	H, V	842KG7W	Tx	49.70	26.50	1.8M/P		QPSK 384 KBPS
98)	14000.0000-14500.0000	H, V	4M41G7W	Tx	49.70	19.30	1.8M/P		QPSK 2048 KBPS
99)	14000.0000-14500.0000	H, V	380KG7W	Tx	49.80	30.00	1.8M/P		QPSK 256 KBPS, TURBO CODE
100)	14000.0000-14500.0000	H, V	380KG7W	Tx	52.50	32.70	1.8M/P		QPSK 256 KBPS, TURBO CODE
101)	14000.0000-14500.0000	H, V	750KG7W	Tx	52.70	30.00	1.8M/P		QPSK 512 KBPS, TURBO CODE
102)	14000.0000-14500.0000	H, V	75K0G7W	Tx	49.80	27.10	1.8M/P		QPSK 512 KBPS, TURBO CODE
103)	14000.0000-14500.0000	H, V	1M50G7W	Tx	49.80	24.10	1.8M/P		QPSK 1024 KBPS, TURBO CODE
104)	14000.0000-14500.0000	H, V	1M50G7W	Tx	52.70	27.00	1.8M/P		QPSK 1025 KBPS, TURBO CODE
105)	14000.0000-14500.0000	H, V	3M00G7W	Tx	49.80	21.10	1.8M/P		QPSK 2048 KBPS, TURBO CODE



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RADIO STATION AUTHORIZATION

Name: Telesat Network Services, Inc.

Call Sign: E030029

Authorization Type: Modification of License

File Number: SES-MOD-20150701-00437

Non Common Carrier

Grant date: 02/23/2016

Expiration Date: 03/20/2018

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
106)	14000.0000-14500.0000	H, V	3M00G7W	Tx	52.70	24.00	1.8M/P		QPSK 2048 KBPS, TURBO CODE
107)	14000.0000-14500.0000	H, V	3M17G7W	Tx	52.70	22.30	1.8M/P		QPSK 2048 KBPS, RATE 1/2 CODE
108)	14000.0000-14500.0000	H, V	360KG7W	Tx	49.80	30.30	1.8M/P		QPSK 144 KBPS, CONCATENATED CODE
109)	14000.0000-14500.0000	H, V	360KG7W	Tx	52.20	32.70	1.8M/P		QPSK 144 KBPS, CONCATENATED CODE
110)	14000.0000-14500.0000	H, V	936KG7W	Tx	49.80	26.10	1.8M/P		QPSK 384 KBPS, CONCATENATED CODE
111)	14000.0000-14500.0000	H, V	936KG7W	Tx	52.70	29.00	1.8M/P		QPSK 384 KBPS, CONCATENATED CODE
112)	14000.0000-14500.0000	H, V	2M45G7W	Tx	49.80	21.90	1.8M/P		QPSK 1024 KBPS, CONCATENATED CODE
113)	14000.0000-14500.0000	H, V	2M45G7W	Tx	52.70	24.80	1.8M/P		QPSK 1024 KBPS, CONCATENATED CODE
114)	14000.0000-14500.0000	H, V	4M90G7W	Tx	49.70	18.90	1.8M/P		QPSK 2048 KBPS, CONCATENATED CODE
115)	14000.0000-14500.0000	H, V	4M90G7W	Tx	52.70	21.00	1.8M/P		QPSK 2048 KBPS, CONCATENATED CODE
116)	11700.0000-12200.0000	H, V	54M0G7W	Rx			1.8M/P		QPSK 48MBPS 2/3 FEC
117)	11700.0000-12200.0000	H, V	3M91G7W	Rx			1.8M/P		QPSK 3MBPS HUB OUTBOUND TO VSAT
118)	11700.0000-12200.0000	H, V	8M79G7W	Rx			1.8M/P		QPSK 8MBPS HUB OUTBOUND TO VSAT
119)	14000.0000-14500.0000	H, V	380KG7W	Tx	52.80	33.00	1.8M/PAT		QPSK, 256KBPS, 2/3 FEC TURBOCODING
120)	14000.0000-14500.0000	H, V	3M00G7W	Tx	52.80	24.00	1.8M/PAT		QPSK, 2048 KBPS, 2/3 FEC TURBOCODING
121)	11700.0000-12200.0000	H, V	3M91G7W	Rx			1.8M/PAT		3 MBPS 2/3 FEC HUB OUTBOUND TO VSAT
122)	11700.0000-12200.0000	H, V	54M0G7W	Rx			1.8M/PAT		48 MBPS 2/3 FEC HUB OUTBOUND TO VSAT
123)	14000.0000-14500.0000	H, V	380KG7W	Tx	55.10	35.30	2.4M/CM		QPSK 256 KBPS, TURBO CODE
124)	14000.0000-14500.0000	H, V	750KG7W	Tx	58.00	35.30	2.4M/CM		QPSK 512 KBPS, TURBO CODE



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Non Common Carrier

Grant date: 02/23/2016

Expiration Date: 03/20/2018

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
125)	14000.0000-14500.0000	H, V	1M50G7W	Tx	58.30	32.60	2.4M/CM		QPSK 1024 KBPS, TURBO CODE
126)	14000.0000-14500.0000	H, V	3M00G7W	Tx	58.30	29.60	2.4M/CM		QPSK 2048 KBPS, TURBO CODE
127)	14000.0000-14500.0000	H, V	360KG7W	Tx	54.80	35.30	2.4M/CM		QPSK 144 KBPS, CONCATENATED CODE
128)	14000.0000-14500.0000	H, V	936KG7W	Tx	58.30	34.60	2.4M/CM		QPSK 384 KBPS, CONCATENATED CODE
129)	14000.0000-14500.0000	H, V	2M45G7W	Tx	58.30	30.40	2.4M/CM		QPSK 1024 KBPS, CONCATENATED CODE
130)	14000.0000-14500.0000	H, V	4M90G7W	Tx	58.30	27.40	2.4M/CM		QPSK 2048 KBPS, CONCATENATED CODE
131)	11700.0000-12200.0000	H, V	54M0G7W	Rx			2.4M/CM		QPSK 48MBPS 2/3 FEC
132)	11700.0000-12200.0000	H, V	3M91G7W	Rx			2.4M/CM		QPSK 3MBPS HUB OUTBOUND TO VSAT
133)	11700.0000-12200.0000	H, V	8M79G7W	Rx			2.4M/CM		QPSK 8MBPS HUB OUTBOUND TO VSAT
134)	14000.0000-14500.0000	H, V	380KG7W	Tx	55.00	35.30	2.4M/PAT		QPSK, 256KBPS, TURBOCODE, 2/3 FEC
135)	14000.0000-14500.0000	H, V	3M00G7W	Tx	55.30	26.70	2.4M/PAT		QPSK 2048KBPS, TURBOCODE, 2/3 FEC
136)	11700.0000-12200.0000	H, V	3M91G7W	Rx			2.4M/PAT		QPSK, 3 MBPS, HUB OUTBOUND TO VSAT
137)	11700.0000-12200.0000	H, V	54M0G7W	Rx			2.4M/PAT		QPSK, 48 MBPS, HUB OUTBOUND TO VSAT
138)	14000.0000-14500.0000	H, V	380KG7W	Tx	52.70	32.90	2.4M/PRO.		QPSK, 256KBPS, 2/3 FEC TURBOCODING
139)	14000.0000-14500.0000	H, V	750KG7W	Tx	52.60	29.90	2.4M/PRO.		QPSK, 512 KBPS, 2/3 FEC TURBOCODING
140)	14000.0000-14500.0000	H, V	1M50G7W	Tx	52.90	27.20	2.4M/PRO.		QPSK, 1024 KBPS, 2/3 FEC TURBOCODING
141)	14000.0000-14500.0000	H, V	3M00G7W	Tx	52.90	25.20	2.4M/PRO.		QPSK, 2048 KBPS, 2/3 FEC TURBOCODING
142)	14000.0000-14500.0000	H, V	360KG7W	Tx	52.40	32.90	2.4M/PRO.		QPSK, 144 KBPS, 2/3 FEC CONCATENATED CODE
143)	14000.0000-14500.0000	H, V	4M90G7W	Tx	52.90	22.00	2.4M/PRO.		QPSK, 2048 KBPS, 2/3 FEC CONCATENATED CODE



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Authorization Type: Modification of License

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Non Common Carrier

Grant date: 02/23/2016

Expiration Date: 03/20/2018

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
144)	11700.0000-12200.0000	H, V	54M0G7W	Rx			2.4M/PRO.		QPSK 48 MBPS 2/3 FEC
145)	11700.0000-12200.0000	H, V	3M91G7W	Rx			2.4M/PRO.		QPSK 3 MBPS HUB OUTBOUND TO VSAT
146)	11700.0000-12200.0000	H, V	8M79G7W	Rx			2.4M/PRO.		QPSK 8 MBPS HUB OUTBOUND TO VSAT
147)	11700.0000-12200.0000	H, V	380KG7W	Rx			2.4M/PRO.		QPSK, 256KBPS, 2/3 FEC TURBOCODING
148)	11700.0000-12200.0000	H, V	750KG7W	Rx			2.4M/PRO.		QPSK, 512 KBPS, 2/3 FEC TURBOCODING
149)	11700.0000-12200.0000	H, V	1M50G7W	Rx			2.4M/PRO.		QPSK, 1024 KBPS, 2/3 FEC TURBOCODING
150)	11700.0000-12200.0000	H, V	3M00G7W	Rx			2.4M/PRO.		QPSK, 2048 KBPS, 2/3 FEC TURBOCODING
151)	11700.0000-12200.0000	H, V	360KG7W	Rx			2.4M/PRO.		QPSK, 144 KBPS, 2/3 FEC CONCATENATED CODE
152)	11700.0000-12200.0000	H, V	4M90G7W	Rx			2.4M/PRO.		QPSK, 2048 KBPS, 2/3 FEC CONCATENATED CODE
153)	14000.0000-14500.0000	H, V	54M0G7W	Tx	75.00	31.70	9.0M/V		QPSK 48MBPS 2/3 FEC
154)	14000.0000-14500.0000	H, V	500KG7W	Tx	64.40	43.30	9.0M/V		DATA (QPSK, 8PSK, 16APSK)
155)	14000.0000-14500.0000	H, V	54M0G7W	Tx	84.70	43.30	9.0M/V		DATA (QPSK, 8PSK, 16APSK)
156)	14000.0000-14500.0000	H, V	3M91G7W	Tx	67.00	37.10	9.0M/V		QPSK 3MBPS HUB OUTBOUND TO VSAT
157)	14000.0000-14500.0000	H, V	8M79G7W	Tx	69.50	36.00	9.0M/V		QPSK 8MBPS HUB OUTBOUND TO VSAT
158)	13811.0000-14000.0000	H, V	54M0G7W	Tx	84.70	43.40	9.0M/V		DATA (QPSK, 8PSK, 16APSK)
159)	13780.0000-14000.0000	H, V	600KG7W	Tx	68.10	46.30	9.0M/V		DATA (QPSK, 8PSK, 16APSK)
160)	13770.0000-13780.0000	H, V	4M00G7W	Tx	69.20	39.20	9.0M/V		DATA (QPSK, 8PSK, 16APSK)
161)	13750.0000-13811.0000	H, V	54M0G7W	Tx	79.90	38.60	9.0M/V		DATA (QPSK, 8PSK, 16APSK)
162)	13750.0000-13770.0000	H, V	600KG7W	Tx	68.10	46.30	9.0M/V		DATA (QPSK, 8PSK, 16APSK)
163)	11700.0000-12200.0000	H, V	324KG7W	Rx			9.0M/V		QPSK 144 KBPS
164)	11700.0000-12200.0000	H, V	842KG7W	Rx			9.0M/V		QPSK 384 KBPS



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Non Common Carrier

Grant date: 02/23/2016

Expiration Date: 03/20/2018

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)	11700.0000-12200.0000	H, V	4M41G7W	Rx			9.0M/V		QPSK 2048 KBPS
166)	11700.0000-12200.0000	H, V	380KG7W	Rx			9.0M/V		QPSK 256 KBPS, TURBO CODE
167)	11700.0000-12200.0000	H, V	500KG7W	Rx			9.0M/V		DATA (QPSK, 8PSK, 16APSK)
168)	11700.0000-12200.0000	H, V	54M0G7W	Rx			9.0M/V		DATA (QPSK, 8PSK, 16APSK)
169)	11700.0000-12200.0000	H, V	750KG7W	Rx			9.0M/V		QPSK 512 KBPS, TURBO CODE
170)	11700.0000-12200.0000	H, V	1M50G7W	Rx			9.0M/V		QPSK 1024 KBPS, TURBO CODE
171)	11700.0000-12200.0000	H, V	3M00G7W	Rx			9.0M/V		QPSK 2048 KBPS, TURBO CODE
172)	11700.0000-12200.0000	H, V	3M17G7W	Rx			9.0M/V		QPSK 2048 KBPS, RATE 1/2 CODE
173)	11700.0000-12200.0000	H, V	360KG7W	Rx			9.0M/V		QPSK 144 KBPS, CONCATENATED CODE
174)	11700.0000-12200.0000	H, V	936KG7W	Rx			9.0M/V		QPSK 384 KBPS, CONCATENATED CODE
175)	11700.0000-12200.0000	H, V	2M45G7W	Rx			9.0M/V		QPSK 1024 KBPS, CONCATENATED CODE
176)	11700.0000-12200.0000	H, V	4M90G7W	Rx			9.0M/V		QPSK 2048 KBPS, CONCATENATED CODE
177)	10950.0000-11200.0000	H, V	500KG7W	Rx			9.0M/V		DATA (QPSK, 8PSK, 16APSK)
178)	10950.0000-11200.0000	H, V	54M0G7W	Rx			9.0M/V		DATA (QPSK, 8PSK, 16APSK)
179)	14000.0000-14500.0000	H, V	356KG7W	Tx	45.50	27.70	ENS 1.2 2W		395 QPSK
180)	14000.0000-14500.0000	H, V	693KG7W	Tx	45.50	27.70	ENS 1.2 2W		770 QPSK
181)	11700.0000-12200.0000	H, V	356KG7W	Rx			ENS 1.2 2W		395 QPSK
182)	11700.0000-12200.0000	H, V	693KG7W	Rx			ENS 1.2 2W		770 QPSK
183)	14000.0000-14500.0000	H, V	356KG7W	Tx	48.20	29.50	ENS 1.2 4W		395 QPSK
184)	14000.0000-14500.0000	H, V	693KG7W	Tx	48.20	29.50	ENS 1.2 4W		770 QPSK
185)	11700.0000-12200.0000	H, V	356KG7W	Rx			ENS 1.2 4W		395 QPSK
186)	11700.0000-12200.0000	H, V	693KG7W	Rx			ENS 1.2 4W		770 QPSK



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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
187)	14000.0000-14500.0000	H,V	356KG7W	Tx	49.00	30.30	ENS 1.8 2W		395 QPSK
188)	14000.0000-14500.0000	H,V	693KG7W	Tx	49.00	27.40	ENS 1.8 2W		770 QPSK
189)	11700.0000-12200.0000	H,V	356KG7W	Rx			ENS 1.8 2W		395 QPSK
190)	11700.0000-12200.0000	H,V	693KG7W	Rx			ENS 1.8 2W		770 QPSK
191)	14000.0000-14500.0000	H,V	356KG7W	Tx	51.70	33.00	ENS 1.8 4W		395 QPSK
192)	14000.0000-14500.0000	H,V	693KG7W	Tx	52.60	31.00	ENS 1.8 4W		770 QPSK
193)	11700.0000-12200.0000	H,V	356KG7W	Rx			ENS 1.8 4W		395 QPSK
194)	11700.0000-12200.0000	H,V	693KG7W	Rx			ENS 1.8 4W		770 QPSK

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)	14000.0000-14500.0000	12.0W	-143.0W	09.4	-11.2	105.1	-253.3	-2.9	9.0M/V
2)	11700.0000-12200.0000	12.0W	-143.0W	09.4	-11.2	105.1	-253.3		9.0M/V
3)	14000.0000-14500.0000	12.0W	-143.0W	09.4	-11.2	105.1	-253.3	-11.8	9.0M/V
4)	13750.0000-14000.0000	15.0W	-15.0W	11.8	-11.8	107.2	-107.2	-8.9	9.0M/V
5)	10950.0000-11200.0000	12.0W	-143.0W	09.4	-11.2	105.1	-253.3		9.0M/V
6)	14000.0000-14500.0000							-12.1	0.95M/R
7)	11700.0000-12200.0000								0.95M/R
8)	14000.0000-14500.0000							-12.1	1.2M/P
9)	11700.0000-12200.0000								1.2M/P
10)	14000.0000-14500.0000							-12.1	1.8M/P
11)	11700.0000-12200.0000								1.8M/P
12)	14000.0000-14500.0000							-12.1	2.4M/CM
13)	11700.0000-12200.0000								2.4M/CM
14)	14000.0000-14500.0000							-12.1	0.96M/CM
15)	11700.0000-12200.0000								0.96M/CM



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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		
16)	14000.0000-14500.0000							-12.1	1.2M/CM
17)	11700.0000-12200.0000								1.2M/CM
18)	14000.0000-14500.0000							-12.1	1.8M/CM
19)	11700.0000-12200.0000								1.8M/CM
20)	14000.0000-14500.0000	12.0W	143.0W					-12.1	2.4M/PAT
21)	11700.0000-12200.0000	12.0W	143.0W						2.4M/PAT
22)	14000.0000-14500.0000	12.0W	143.0W					-12.1	1.2M/PAT
23)	11700.0000-12200.0000	12.0W	143.0W						1.2M/PAT
24)	14000.0000-14500.0000	12.0W	143.0W					-12.1	1.8M/PAT
25)	11700.0000-12200.0000	12.0W	143.0W						1.8M/PAT
26)	14000.0000-14500.0000							-12.1	2.4M/PRO.
27)	11700.0000-12200.0000								2.4M/PRO.
28)	14000.0000-14500.0000	68.0W	168.0W	10.8	19.3	248.0	134.0	-10.1	ENS 1.2 4W
29)	11700.0000-12200.0000	68.0W	168.0W	10.8	19.3	248.0	134.0		ENS 1.2 4W
30)	14000.0000-14500.0000	68.0W	168.0W	10.8	19.3	248.0	134.0	-13.1	ENS 1.2 2W
31)	11700.0000-12200.0000	68.0W	168.0W	10.8	19.3	248.0	134.0		ENS 1.2 2W
32)	14000.0000-14500.0000	68.0W	168.0W	10.8	19.3	248.0	134.0	-13.1	ENS 1.8 2W
33)	11700.0000-12200.0000	68.0W	168.0W	10.8	19.3	248.0	134.0		ENS 1.8 2W
34)	14000.0000-14500.0000	68.0W	168.0W	10.8	19.3	248.0	134.0	-10.1	ENS 1.8 4W
35)	11700.0000-12200.0000	68.0W	168.0W	10.8	19.3	248.0	134.0		ENS 1.8 4W

D) Points of Communications

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

- 1) 1 HUB to Permitted Space Station List
- 2) 1 HUB to Telstar 12 (S2462) @ 15 W.L. (U.S.-licensed)
- 3) REMOTE 1 to TELSTAR 11N (S2357) @ 37.55 degrees W.L. (U.S.-licensed)
- 4) REMOTE 1 to Telstar 12 (S2462) @ 15 W.L. (U.S.-licensed)
- 5) REMOTE 2 to Telstar 12 (S2462) @ 15 W.L. (U.S.-licensed)
- 6) REMOTE 2 to Permitted Space Station List
- 7) REMOTE 3 to Telstar 12 (S2462) @ 15 W.L. (U.S.-licensed)
- 8) REMOTE 3 to Permitted Space Station List
- 9) REMOTE 7 to Telstar 12 (S2462) @ 15 W.L. (U.S.-licensed)
- 10) REMOTE 7 to Permitted Space Station List



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Non Common Carrier

Grant date: 02/23/2016

Expiration Date: 03/20/2018

D) Points of Communications

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

- 11) REMOTE 4 to Telstar 12 (S2462) @ 15 W.L. (U.S.-licensed)
- 12) REMOTE 5 to Telstar 12 (S2462) @ 15 W.L. (U.S.-licensed)
- 13) REMOTE 5 to Permitted Space Station List
- 14) REMOTE 6 to Telstar 12 (S2462) @ 15 W.L. (U.S.-licensed)
- 15) REMOTE 6 to Permitted Space Station List
- 16) REMOTE 8P to Permitted Space Station List
- 17) REMOTE 9P to Permitted Space Station List
- 18) REMOTE 10P to Permitted Space Station List
- 19) REMOTE 11PROD to Permitted Space Station List
- 20) REMOTE12 to Permitted Space Station List
- 21) REMOTE13 to Permitted Space Station List
- 22) REMOTE14 to Permitted Space Station List
- 23) REMOTE15 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	0.95M/R	5000	0.95	RAYTHEON	SMDS 2100			
Max Gains(s):		41.7 dBi @	14.2500 GHz	40.1 dBi @	11.9500 GHz			
Maximum total input power at antenna flange (Watts) =					2.00			
Maximum aggregate output EIRP for all carriers (dBW) =					44.70			
REMOTE 4	0.96M/CM	5000	0.96	CHANNEL MASTER	TYPE 960			
Max Gains(s):		39.7 dBi @	11.9500 GHz	46.7 dBi @	14.2500 GHz			
Maximum total input power at antenna flange (Watts) =					2.00			
Maximum aggregate output EIRP for all carriers (dBW) =					44.20			
REMOTE 5	1.2M/CM	5000	1.2	CHANNEL MASTER	TYPE 120			
Max Gains(s):		41.8 dBi @	11.9500 GHz	43.3 dBi @	14.2500 GHz			
Maximum total input power at antenna flange (Watts) =					2.00			
Maximum aggregate output EIRP for all carriers (dBW) =					46.30			



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RADIO STATION AUTHORIZATION

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Call Sign: E030029

Authorization Type: Modification of License

File Number: SES-MOD-20150701-00437

Non Common Carrier

Grant date: 02/23/2016

Expiration Date: 03/20/2018

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 2	1.2M/P	5000	1.2	PRODELIN	1134			
Max Gains(s):		43.0 dBi @	14.0000 GHz	41.3 dBi @	11.9500 GHz			
Maximum total input power at antenna flange (Watts) =				2.00				
Maximum aggregate output EIRP for all carriers (dBW) =				46.00				
REMOTE 9P	1.2M/PAT	5000	1.2	PATRIOT	TXFCC-120KU			
Max Gains(s):		49.6 dBi @	14.2500 GHz	48.0 dBi @	11.7250 GHz			
Maximum total input power at antenna flange (Watts) =				2.00				
Maximum aggregate output EIRP for all carriers (dBW) =				43.40				
REMOTE 6	1.8M/CM	5000	1.8	CHANNEL MASTER	TYPE180			
Max Gains(s):		45.3 dBi @	11.9500 GHz	46.8 dBi @	14.2500 GHz			
Maximum total input power at antenna flange (Watts) =				4.00				
Maximum aggregate output EIRP for all carriers (dBW) =				52.80				
REMOTE 3	1.8M/P	5000	1.8	PRODELIN	1194			
Max Gains(s):		46.7 dBi @	14.2500 GHz	45.2 dBi @	11.9500 GHz			
Maximum total input power at antenna flange (Watts) =				4.00				
Maximum aggregate output EIRP for all carriers (dBW) =				52.70				
REMOTE 10P	1.8M/PAT	5000	1.8	PATRIOT	TXFCC-180KU			
Max Gains(s):		47.0 dBi @	14.5000 GHz	44.4 dBi @	11.7000 GHz			
Maximum total input power at antenna flange (Watts) =				8.00				
Maximum aggregate output EIRP for all carriers (dBW) =				56.00				
REMOTE 7	2.4M/CM	5000	2.4	CHANNEL MASTER	TYPE 240			
Max Gains(s):		47.6 dBi @	11.9500 GHz	49.3 dBi @	14.2500 GHz			
Maximum total input power at antenna flange (Watts) =				8.00				
Maximum aggregate output EIRP for all carriers (dBW) =				58.30				



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E) Antenna Facilities

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REMOTE 8P	2.4M/PAT	5000	2.4	PATRIOT	TXFCC-240KU			
Max Gains(s):		49.3 dBi @	14.2500 GHz	47.6 dBi @	11.9500 GHz			
Maximum total input power at antenna flange (Watts) =						8.00		
Maximum aggregate output EIRP for all carriers (dBW) =						58.30		
REMOTE 11PRO	2.4M/PRO.	5000	2.4	PRODELIN	P24			
Max Gains(s):		49.2 dBi @	14.0000 GHz	47.6 dBi @	11.7000 GHz			
Maximum total input power at antenna flange (Watts) =						2.00		
Maximum aggregate output EIRP for all carriers (dBW) =						58.30		
1 HUB	9.0M/V	1	9	VERTEX	9 KPK	282.9	9.1 AGL/ 292 AMSL	
Max Gains(s):		60.4 dBi @	14.0000 GHz	58.7 dBi @	11.7000 GHz			
Maximum total input power at antenna flange (Watts) =						490.00		
Maximum aggregate output EIRP for all carriers (dBW) =						87.30		
REMOTE13	ENS 1.2 2W	5000	1.2	PATRIOT	TXFLY-120KU			
Max Gains(s):		41.8 dBi @	11.7500 GHz	43.5 dBi @	14.2500 GHz			
Maximum total input power at antenna flange (Watts) =						2.00		
Maximum aggregate output EIRP for all carriers (dBW) =						45.90		
REMOTE12	ENS 1.2 4W	5000	1.2	PATRIOT	TXFLY-120KU			
Max Gains(s):		41.8 dBi @	11.7500 GHz	43.5 dBi @	14.2500 GHz			
Maximum total input power at antenna flange (Watts) =						4.00		
Maximum aggregate output EIRP for all carriers (dBW) =						48.90		
REMOTE14	ENS 1.8 2W	5000	1.8	PATRIOT	TXFLY-180KU			
Max Gains(s):		45.3 dBi @	11.7500 GHz	47.0 dBi @	14.2500 GHz			
Maximum total input power at antenna flange (Watts) =						2.00		
Maximum aggregate output EIRP for all carriers (dBW) =						49.60		



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E) Antenna Facilities

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REMOTE15	ENS 1.8 4W	5000	1.8	PATRIOT	TXFLY-180KU			
Max Gains(s):		45.3 dBi @	11.7500 GHz	47.0 dBi @	14.2500 GHz			
Maximum total input power at antenna flange (Watts) =				4.00				
Maximum aggregate output EIRP for all carriers (dBW) =				52.60				

F) Remote Control Point:

1 HUB ALLAN PARK EARTH STATION, P.O. BOX 99
HANOVER, ONTARIO, N4N 3C3
519-370-2841

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:

- 1010 --- Applicable to all receiving frequency bands. Emission designator indicates the maximum bandwidth of received signal at associated station(s). Maximum EIRP and maximum EIRP density are not applicable to receive operations.
- 1900 --- Applicable to all transmitting frequency bands. Authority is granted to transmit any number of RF carriers with the specified parameters on any discrete frequencies within associated band in accordance with the other terms and conditions of this authorization, subject to any additional limitations that may be required to avoid unacceptable levels of inter-satellite interference.
- 2010 --- This authorization is issued pursuant to the Commission's Second Report and Order adopted June 16, 1972 (35 FCC 2d 844) and Memorandum, Opinion and Order adopted December 21, 1972 (38 FCC 2d 665) in Docket No. 16495 and is subject to the policies adopted in that proceeding.
- 2916 --- Transmitter(s) must be turned off during antenna maintenance to ensure compliance with the FCC-specified safety guidelines for human exposure to radiofrequency radiation in the region between the antenna feed and the reflector. Appropriate measures must also be taken to restrict access to other regions in which the earth station's power flux density levels exceed the specified guidelines.



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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:

- 2938 --- Upon completion of construction, each licensee must file with the Commission a certification including the following information: (1) name of the licensee, (2) file number of the application, (3) call sign of the antenna, (4) date of the license, (5) certification that the facility as authorized has been completed, (6) certification that each antenna facility has been tested and is within 2 dB of the pattern specified in Section 25.209, and (7) certification that the station is operational (including the date of commencement of service) and will remain operational during the license period unless the license is submitted for cancellation.
- 3219 --- All existing transmitting facilities, operations and devices regulated by the Commission must be in compliance with the Commission's radiofrequency (RF) exposure guidelines, pursuant to Section 1.1307(b)(1) through (b)(3) of the Commission's rules, or if not in compliance, file an Environmental Assessment (EA) as specified in Section 1.1311. See 47 CFR § 1.1307 (b) (5).
- 5208 --- The licensee shall take all necessary measures to ensure that the antenna 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 wherever such exposures might occur. 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) 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.
- 5216 --- All operations shall be on a non-common carrier basis.



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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 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.