



PUBLIC NOTICE

FEDERAL COMMUNICATIONS COMMISSION
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Report No. SES-02085

Wednesday August 8, 2018

Satellite Communications Services Information re: Actions Taken

The Commission, by its International Bureau, took the following actions pursuant to delegated authority. The effective dates of the actions are the dates specified.

SES-AMD-20180208-00096 E E100089 Panasonic Avionics Corporation
Amendment
Grant of Authority Date Effective: 08/01/2018

Class of Station: Other

Nature of Service: Other

SITE ID: MELCO Remotes
LOCATION: US&P, International waters

ANTENNA ID:	MELCO	0.68 meters	Mitsubishi Electronics	726-20176-101
14000.0000 - 14400.0000 MHz		9M00G7D	42.15 dBW	BPSK, QPSK DIGITAL DATA
14000.0000 - 14400.0000 MHz		500KG7D	32.70 dBW	BPSK, QPSK DIGITAL DATA
14000.0000 - 14400.0000 MHz		9M00G7D	39.85 dBW	BPSK, QPSK
14000.0000 - 14400.0000 MHz		500KG7D	27.30 dBW	BPSK, QPSK
11700.0000 - 12200.0000 MHz		1M20G7D		BPSK, QPSK DIGITAL DATA
11700.0000 - 12200.0000 MHz		54M0G7D		BPSK, QPSK DIGITAL DATA
11450.0000 - 12200.0000 MHz		1M20G7D		BPSK, QPSK DIGITAL DATA
11450.0000 - 12200.0000 MHz		27M0G7D		BPSK, QPSK DIGITAL DATA
11450.0000 - 12200.0000 MHz		54M0G7D		BPSK, QPSK DIGITAL DATA

10950.0000 - 11200.0000 MHz	1M20G7D	BPSK, QPSK DIGITAL DATA
10950.0000 - 11200.0000 MHz	27M0G7D	BPSK, QPSK DIGITAL DATA
10950.0000 - 11200.0000 MHz	54M0G7D	BPSK, QPSK DIGITAL DATA

SITE ID: PPA Remotes
LOCATION: US&P, International waters

ANTENNA ID:	PPA	0.89 meters	PANASONIC	AURA LE
14000.0000 - 14500.0000 MHz	500KG7D	44.50 dBW	BPSK, SPREAD SPECTRUM	
14000.0000 - 14500.0000 MHz	9M00G7D	48.00 dBW	BPSK, SPREAD SPECTRUM	
14000.0000 - 14500.0000 MHz	9M00G7D	48.00 dBW	BPSK, SPREAD SPECTRUM	
14000.0000 - 14500.0000 MHz	32K0G7D	48.00 dBW	QPSK	
14000.0000 - 14500.0000 MHz	21M0G7D	48.00 dBW	QPSK	
12500.0000 - 12750.0000 MHz	1M20G7D	PSK		
12500.0000 - 12750.0000 MHz	72M0G7D	QPSK, 16APSK		
12500.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK		
12500.0000 - 12750.0000 MHz	54M0G7D	QPSK, 16APSK		
12500.0000 - 12600.0000 MHz	1M20G7D	PSK		
12500.0000 - 12600.0000 MHz	48M6G7D	PSK		
12500.0000 - 12600.0000 MHz	54M0G7D	PSK		
12500.0000 - 12600.0000 MHz	1M05G7D	QPSK, 16APSK		
12500.0000 - 12600.0000 MHz	97M2G7D	QPSK, 16APSK		
12250.0000 - 12750.0000 MHz	54M0G7D	PSK		
12250.0000 - 12750.0000 MHz	1M20G7D	PSK		
12250.0000 - 12750.0000 MHz	1M50G7D	QPSK, 16APSK		
12250.0000 - 12750.0000 MHz	72M0G7D	QPSK, 16APSK		
12200.0000 - 12750.0000 MHz	139MG7D	QPSK, 16APSK		
12200.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK		
12200.0000 - 12750.0000 MHz	36M0G7D	QPSK, 16APSK		

12200.0000 - 12750.0000 MHz	54M0G7D	QPSK, 16APSK
11700.0000 - 12200.0000 MHz	54M0G7D	PSK
11700.0000 - 12200.0000 MHz	1M20G7D	PSK
11700.0000 - 12200.0000 MHz	36M0G7D	PSK
11700.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 12750.0000 MHz	36M0G7D	PSK
11450.0000 - 12750.0000 MHz	27M0G7D	PSK
11450.0000 - 12750.0000 MHz	1M20G7D	PSK
11450.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 12750.0000 MHz	72M0G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	1M20G7D	PSK
11450.0000 - 12200.0000 MHz	48M6G7D	PSK
11450.0000 - 12200.0000 MHz	54M0G7D	PSK
11450.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	27M0G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	36M0G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	97M2G7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	139MG7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	54M0G7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	139MG7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	1M05G7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	54M0G7D	QPSK, 16APSK
10950.0000 - 12500.0000 MHz	54M0G7D	PSK
10950.0000 - 12500.0000 MHz	36M0G7D	PSK

10950.0000 - 12500.0000 MHz	1M20G7D	PSK
10950.0000 - 12200.0000 MHz	54M0G7D	PSK
10950.0000 - 12200.0000 MHz	1M20G7D	PSK
10950.0000 - 12200.0000 MHz	112MG7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	125MG7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	36M0G7W	QPSK, 16APSK
10950.0000 - 11700.0000 MHz	54M0G7D	PSK
10950.0000 - 11700.0000 MHz	1M20G7D	PSK
10950.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 11700.0000 MHz	72M0G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	27M0G7D	PSK
10950.0000 - 11200.0000 MHz	48M6G7D	PSK
10950.0000 - 11200.0000 MHz	1M20G7D	PSK
10950.0000 - 11200.0000 MHz	139MG7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	54M0G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	72M0G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	97M2G7D	QPSK, 16APSK
10700.0000 - 12750.0000 MHz	1M20G7D	PSK
10700.0000 - 12750.0000 MHz	36M0G7D	PSK
10700.0000 - 12750.0000 MHz	54M0G7D	PSK
10700.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	139MG7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK

SITE ID: SPA Remotes
LOCATION: US&P, International waters

ANTENNA ID:	SPA	0.949 meters	PANASONIC	SPA
	14000.0000 - 14500.0000 MHz	500KG7D	45.00 dBW	QPSK, 8PSK, 16APSK
	14000.0000 - 14500.0000 MHz	9M00G7D	45.00 dBW	QPSK, 8PSK, 16APSK
	14000.0000 - 14500.0000 MHz	21M0G7D	45.00 dBW	QPSK
	14000.0000 - 14500.0000 MHz	32K0G7D	45.00 dBW	QPSK
	12500.0000 - 12750.0000 MHz	36M0G7D		QPSK, 8PSK, 16APSK
	12500.0000 - 12750.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
	12500.0000 - 12750.0000 MHz	1M05G7D		QPSK, 16APSK
	12500.0000 - 12750.0000 MHz	54M0G7D		QPSK, 16APSK
	12500.0000 - 12750.0000 MHz	72M0G7D		QPSK, 16APSK
	12500.0000 - 12600.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
	12500.0000 - 12600.0000 MHz	48M6G7D		QPSK, 8PSK, 16APSK
	12500.0000 - 12600.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK
	12500.0000 - 12600.0000 MHz	1M50G7D		QPSK, 16APSK
	12500.0000 - 12600.0000 MHz	97M2G7D		QPSK, 16APSK
	12250.0000 - 12750.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
	12250.0000 - 12750.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK
	12250.0000 - 12750.0000 MHz	72M0G7D		QPSK, 16APSK
	12200.0000 - 12750.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
	12200.0000 - 12750.0000 MHz	36M0G7D		QPSK, 8PSK, 16APSK
	12200.0000 - 12750.0000 MHz	139MG7D		QPSK, 16APSK
	12200.0000 - 12750.0000 MHz	1M05G7D		QPSK, 16APSK
	12200.0000 - 12750.0000 MHz	54M0G7D		QPSK, 16APSK
	11700.0000 - 12200.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
	11700.0000 - 12200.0000 MHz	36M0G7D		QPSK, 8PSK, 16APSK
	11700.0000 - 12200.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK

11700.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 12750.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12750.0000 MHz	36M0G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12750.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	48M6G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	27M0G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	97M2G7D	QPSK, 16APSK
11450.0000 - 11950.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
11450.0000 - 11950.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
11450.0000 - 11950.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 11950.0000 MHz	72M0G7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
11450.0000 - 11700.0000 MHz	139MG7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	54M0G7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	139MG7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	1M05G7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	54M0G7D	QPSK, 16APSK
10950.0000 - 12500.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
10950.0000 - 12500.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
10950.0000 - 12200.0000 MHz	112MG7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	125MG7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK

10950.0000 - 12200.0000 MHz	27M0G7W	QPSK, 16APSK
10950.0000 - 11700.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11700.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11700.0000 MHz	139MG7D	QPSK, 16APSK
10950.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 11700.0000 MHz	72M0G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11200.0000 MHz	48M6G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11200.0000 MHz	139MG7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	54M0G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	72M0G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	97M2G7D	QPSK, 16APSK
10700.0000 - 12750.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
10700.0000 - 12750.0000 MHz	36M0G7D	QPSK, 8PSK, 16APSK
10700.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	139MG7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK

SITE ID: TECOM Remotes
LOCATION: US&P, International waters

ANTENNA ID:	TECOM	0.62 meters	TECOM	KU-STREAM 1000
14000.0000 - 14500.0000 MHz	9M00G7D	43.80 dBW	BPSK, QPSK DIGITAL DATA	
14000.0000 - 14500.0000 MHz	500KG7D	43.80 dBW	BPSK, QPSK DIGITAL DATA	
14000.0000 - 14500.0000 MHz	21M0G7D	43.80 dBW	QPSK	
14000.0000 - 14500.0000 MHz	32K0G7D	40.39 dBW	QPSK	
12200.0000 - 12750.0000 MHz	139MG7D	QPSK, 16APSK		
12200.0000 - 12750.0000 MHz	1M50G7D	QPSK, 16APSK		

12200.0000 - 12750.0000 MHz	54M0G7D	QPSK, 16APSK
11700.0000 - 12200.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
11700.0000 - 12200.0000 MHz	36M0G7D	QPSK, 8PSK, 16APSK
11700.0000 - 12200.0000 MHz	1M50G7D	QPSK, 16APSK
11700.0000 - 12200.0000 MHz	54M0G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	27M0G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	36M0G7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
11450.0000 - 11700.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
11450.0000 - 11700.0000 MHz	139MG7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	139MG7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	1M05G7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	54M0G7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
10950.0000 - 12200.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
10950.0000 - 12200.0000 MHz	27M0G7W	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 11700.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11700.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11200.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK

10950.0000 - 11200.0000 MHz	139MG7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	1M05G7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	139MG7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK

Points of Communication:

MELCO Remotes - E117 WA (S2873) - (116.8 W.L.)

MELCO Remotes - ESTRELA DO SUL 2 - (63 W.L.)

MELCO Remotes - TELSTAR 11N (S2357) - (37.5 W.L.)

PPA Remotes - ANIK G1 - (107.3 W.L.)

PPA Remotes - APSTAR 6 - (226 W.L.)

PPA Remotes - Apstar 7 - (76.5 E.L.)

PPA Remotes - AsiaSat 5 - (100.5E)

PPA Remotes - AsiaSat 7 - (105.5 E.L.)

PPA Remotes - E117 WA (S2873) - (116.8 W.L.)

PPA Remotes - ESTRELA DO SUL 2 - (63 W.L.)

PPA Remotes - Eutelsat 10A (W2A) - (10.0 E.L.)

PPA Remotes - EUTELSAT 172A(S2610) - (174 E. L.)

PPA Remotes - Eutelsat 70B - (70.5 E.L.)

PPA Remotes - EUTELSAT115WB(S2938) - (114.9 W.L.)

PPA Remotes - EUTELSAT172B(S3021) - (172 E.L.)

PPA Remotes - GALAXY 16 (S2687) - (99 W.L.)

PPA Remotes - INTELSAT 14 (S2785) - (45.0 W.L.)

PPA Remotes - INTELSAT 15 (S2789) - (85.15 E.L.)

PPA Remotes - INTELSAT 21 (S2863) - (58.0 W.L.)

PPA Remotes - INTELSAT 29e (S2913) - (50.0 W.L.)

PPA Remotes - INTELSAT 33e (S2939) - (60.0 E.L.)

PPA Remotes - JCSAT 5A - (132 E.L.)

PPA Remotes - JCSAT-2B - (154 E.L.)

PPA Remotes - NSS-6 - (95 E.L.)

PPA Remotes - PERMITTED LIST - ()

PPA Remotes - SES-15 (S2951) - (129.15 W.L.)

PPA Remotes - Superbird C2 - (144 E.L.)

PPA Remotes - TELSTAR 11N (S2357) - (37.5 W.L.)

PPA Remotes - TELSTAR 12 V (S2933) - (15 W.L.)

PPA Remotes - Yamal 300K - (177 W.L.)

PPA Remotes - Yamal 401 - (90 E.L.)

SPA Remotes - ANIK G1 - (107.3 W.L.)

SPA Remotes - APSTAR 6 - (226 W.L.)

SPA Remotes - Apstar 7 - (76.5 E.L.)

SPA Remotes - AsiaSat 5 - (100.5E)

SPA Remotes - AsiaSat 7 - (105.5 E.L.)

SPA Remotes - E117 WA (S2873) - (116.8 W.L.)

SPA Remotes - ESTRELA DO SUL 2 - (63 W.L.)

SPA Remotes - Eutelsat 10A (W2A) - (10.0 E.L.)

SPA Remotes - EUTELSAT 172A(S2610) - (174 E. L.)

SPA Remotes - Eutelsat 70B - (70.5 E.L.)

SPA Remotes - EUTELSAT115WB(S2938) - (114.9 W.L.)

SPA Remotes - EUTELSAT172B(S3021) - (172 E.L.)

SPA Remotes - GALAXY 16 (S2687) - (99 W.L.)

SPA Remotes - INTELSAT 14 (S2785) - (45.0 W.L.)

SPA Remotes - INTELSAT 15 (S2789) - (85.15 E.L.)

SPA Remotes - INTELSAT 21 (S2863) - (58.0 W.L.)

SPA Remotes - INTELSAT 29e (S2913) - (50.0 W.L.)

SPA Remotes - INTELSAT 33e (S2939) - (60.0 E.L.)

SPA Remotes - JCSAT 5A - (132 E.L.)

SPA Remotes - JCSAT-2B - (154 E.L.)

SPA Remotes - NSS-6 - (95 E.L.)

SPA Remotes - PERMITTED LIST - ()

SPA Remotes - SES-15 (S2951) - (129.15 W.L.)

SPA Remotes - SUPERBIRD C2 (S2639) - (144 E.L.)

SPA Remotes - TELSTAR 11N (S2357) - (37.5 W.L.)

SPA Remotes - TELSTAR 12 V (S2933) - (15 W.L.)

SPA Remotes - Yamal 300K - (177 W.L.)

SPA Remotes - Yamal 401 - (90 E.L.)

TECOM Remotes - ANIK G1 - (107.3 W.L.)

TECOM Remotes - ESTRELA DO SUL 2 - (63 W.L.)

TECOM Remotes - EUTELSAT115WB(S2938) - (114.9 W.L.)

TECOM Remotes - EUTELSAT172B(S3021) - (172 E.L.)

TECOM Remotes - GALAXY 16 (S2687) - (99 W.L.)

TECOM Remotes - GE-23 - (188 W.L.)

TECOM Remotes - INTELSAT 21 (S2863) - (58.0 W.L.)

TECOM Remotes - INTELSAT 29e (S2913) - (50.0 W.L.)

TECOM Remotes - PERMITTED LIST - ()

TECOM Remotes - SES-15 (S2951) - (129.15 W.L.)

TECOM Remotes - TELSTAR 11N (S2357) - (37.5 W.L.)

TECOM Remotes - Yamal 300K - (177 W.L.)

SES-AMD-20180225-00161 E E100089 Panasonic Avionics Corporation

Amendment

Grant of Authority

Date Effective: 08/01/2018

Class of Station: Other

Nature of Service: Other

SITE ID: MELCO Remotes

LOCATION: US&P, International waters

ANTENNA ID:	MELCO	0.68 meters	Mitsubishi Electronics	726-20176-101
	14000.0000 - 14400.0000 MHz		9M00G7D 42.15 dBW	BPSK, QPSK DIGITAL DATA
	14000.0000 - 14400.0000 MHz		500KG7D 32.70 dBW	BPSK, QPSK DIGITAL DATA
	14000.0000 - 14400.0000 MHz		9M00G7D 39.85 dBW	BPSK, QPSK
	14000.0000 - 14400.0000 MHz		500KG7D 27.30 dBW	BPSK, QPSK
	11700.0000 - 12200.0000 MHz		1M20G7D	BPSK, QPSK DIGITAL DATA

11700.0000 - 12200.0000 MHz	54M0G7D	BPSK, QPSK DIGITAL DATA
11450.0000 - 12200.0000 MHz	1M20G7D	BPSK, QPSK DIGITAL DATA
11450.0000 - 12200.0000 MHz	27M0G7D	BPSK, QPSK DIGITAL DATA
11450.0000 - 12200.0000 MHz	54M0G7D	BPSK, QPSK DIGITAL DATA
10950.0000 - 11200.0000 MHz	1M20G7D	BPSK, QPSK DIGITAL DATA
10950.0000 - 11200.0000 MHz	27M0G7D	BPSK, QPSK DIGITAL DATA
10950.0000 - 11200.0000 MHz	54M0G7D	BPSK, QPSK DIGITAL DATA

SITE ID: PPA Remotes
LOCATION: US&P, International waters

ANTENNA ID:	PPA	0.89 meters	PANASONIC	AURA LE
14000.0000 - 14500.0000 MHz	500KG7D	44.50 dBW	BPSK, SPREAD SPECTRUM	
14000.0000 - 14500.0000 MHz	9M00G7D	48.00 dBW	BPSK, SPREAD SPECTRUM	
14000.0000 - 14500.0000 MHz	9M00G7D	48.00 dBW	BPSK, SPREAD SPECTRUM	
14000.0000 - 14500.0000 MHz	32K0G7D	35.96 dBW	QPSK	
14000.0000 - 14500.0000 MHz	21M0G7D	48.00 dBW	QPSK	
12500.0000 - 12750.0000 MHz	1M20G7D	PSK		
12500.0000 - 12750.0000 MHz	72M0G7D	QPSK, 16APSK		
12500.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK		
12500.0000 - 12750.0000 MHz	54M0G7D	QPSK, 16APSK		
12500.0000 - 12600.0000 MHz	1M20G7D	PSK		
12500.0000 - 12600.0000 MHz	48M6G7D	PSK		
12500.0000 - 12600.0000 MHz	54M0G7D	PSK		
12500.0000 - 12600.0000 MHz	1M05G7D	QPSK, 16APSK		
12500.0000 - 12600.0000 MHz	97M2G7D	QPSK, 16APSK		
12250.0000 - 12750.0000 MHz	54M0G7D	PSK		
12250.0000 - 12750.0000 MHz	1M20G7D	PSK		
12250.0000 - 12750.0000 MHz	1M50G7D	QPSK, 16APSK		

12250.0000 - 12750.0000 MHz	72M0G7D	QPSK, 16APSK
12200.0000 - 12750.0000 MHz	139MG7D	QPSK, 16APSK
12200.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK
12200.0000 - 12750.0000 MHz	36M0G7D	QPSK, 16APSK
12200.0000 - 12750.0000 MHz	54M0G7D	QPSK, 16APSK
11700.0000 - 12200.0000 MHz	54M0G7D	PSK
11700.0000 - 12200.0000 MHz	1M20G7D	PSK
11700.0000 - 12200.0000 MHz	36M0G7D	PSK
11700.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 12750.0000 MHz	36M0G7D	PSK
11450.0000 - 12750.0000 MHz	27M0G7D	PSK
11450.0000 - 12750.0000 MHz	1M20G7D	PSK
11450.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 12750.0000 MHz	72M0G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	1M20G7D	PSK
11450.0000 - 12200.0000 MHz	48M6G7D	PSK
11450.0000 - 12200.0000 MHz	54M0G7D	PSK
11450.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	27M0G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	36M0G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	97M2G7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	139MG7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	54M0G7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	139MG7D	QPSK, 16APSK

11200.0000 - 11450.0000 MHz	1M05G7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	54M0G7D	QPSK, 16APSK
10950.0000 - 12500.0000 MHz	54M0G7D	PSK
10950.0000 - 12500.0000 MHz	36M0G7D	PSK
10950.0000 - 12500.0000 MHz	1M20G7D	PSK
10950.0000 - 12200.0000 MHz	54M0G7D	PSK
10950.0000 - 12200.0000 MHz	1M20G7D	PSK
10950.0000 - 12200.0000 MHz	112MG7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	125MG7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	36M0G7W	QPSK, 16APSK
10950.0000 - 11700.0000 MHz	54M0G7D	PSK
10950.0000 - 11700.0000 MHz	1M20G7D	PSK
10950.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 11700.0000 MHz	72M0G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	27M0G7D	PSK
10950.0000 - 11200.0000 MHz	48M6G7D	PSK
10950.0000 - 11200.0000 MHz	1M20G7D	PSK
10950.0000 - 11200.0000 MHz	139MG7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	54M0G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	72M0G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	97M2G7D	QPSK, 16APSK
10700.0000 - 12750.0000 MHz	1M20G7D	PSK
10700.0000 - 12750.0000 MHz	36M0G7D	PSK
10700.0000 - 12750.0000 MHz	54M0G7D	PSK

10700.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	139MG7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK

SITE ID: SPA Remotes
LOCATION: US&P, International waters

ANTENNA ID:	SPA	0.949 meters	PANASONIC	SPA
14000.0000 - 14500.0000 MHz	500KG7D	45.00 dBW	QPSK, 8PSK, 16APSK	
14000.0000 - 14500.0000 MHz	9M00G7D	45.00 dBW	QPSK, 8PSK, 16APSK	
14000.0000 - 14500.0000 MHz	21M0G7D	45.00 dBW	QPSK	
14000.0000 - 14500.0000 MHz	32K0G7D	34.21 dBW	QPSK	
12500.0000 - 12750.0000 MHz	36M0G7D	QPSK, 8PSK, 16APSK		
12500.0000 - 12750.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK		
12500.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK		
12500.0000 - 12750.0000 MHz	54M0G7D	QPSK, 16APSK		
12500.0000 - 12750.0000 MHz	72M0G7D	QPSK, 16APSK		
12500.0000 - 12600.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK		
12500.0000 - 12600.0000 MHz	48M6G7D	QPSK, 8PSK, 16APSK		
12500.0000 - 12600.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK		
12500.0000 - 12600.0000 MHz	1M50G7D	QPSK, 16APSK		
12500.0000 - 12600.0000 MHz	97M2G7D	QPSK, 16APSK		
12250.0000 - 12750.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK		
12250.0000 - 12750.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK		
12250.0000 - 12750.0000 MHz	72M0G7D	QPSK, 16APSK		
12200.0000 - 12750.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK		
12200.0000 - 12750.0000 MHz	36M0G7D	QPSK, 8PSK, 16APSK		
12200.0000 - 12750.0000 MHz	139MG7D	QPSK, 16APSK		
12200.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK		

12200.0000 - 12750.0000 MHz	54M0G7D	QPSK, 16APSK
11700.0000 - 12200.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
11700.0000 - 12200.0000 MHz	36M0G7D	QPSK, 8PSK, 16APSK
11700.0000 - 12200.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
11700.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 12750.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12750.0000 MHz	36M0G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12750.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	48M6G7D	QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	27M0G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	97M2G7D	QPSK, 16APSK
11450.0000 - 11950.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
11450.0000 - 11950.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
11450.0000 - 11950.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 11950.0000 MHz	72M0G7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
11450.0000 - 11700.0000 MHz	139MG7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	54M0G7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	139MG7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	1M05G7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	54M0G7D	QPSK, 16APSK
10950.0000 - 12500.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK

10950.0000 - 12500.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
10950.0000 - 12200.0000 MHz	112MG7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	125MG7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	27M0G7W	QPSK, 16APSK
10950.0000 - 11700.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11700.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11700.0000 MHz	139MG7D	QPSK, 16APSK
10950.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 11700.0000 MHz	72M0G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11200.0000 MHz	48M6G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11200.0000 MHz	139MG7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	54M0G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	72M0G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	97M2G7D	QPSK, 16APSK
10700.0000 - 12750.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
10700.0000 - 12750.0000 MHz	36M0G7D	QPSK, 8PSK, 16APSK
10700.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	139MG7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK

SITE ID: TECOM Remotes
LOCATION: US&P, International waters

ANTENNA ID:	TECOM	0.62 meters	TECOM	KU-STREAM 1000
	14000.0000 - 14500.0000 MHz	9M00G7D	43.80 dBW	BPSK, QPSK DIGITAL DATA
	14000.0000 - 14500.0000 MHz	500KG7D	43.80 dBW	BPSK, QPSK DIGITAL DATA

14000.0000 - 14500.0000 MHz	21M0G7D	43.80 dBW	QPSK
14000.0000 - 14500.0000 MHz	32K0G7D	40.39 dBW	QPSK
12200.0000 - 12750.0000 MHz	139MG7D		QPSK, 16APSK
12200.0000 - 12750.0000 MHz	1M50G7D		QPSK, 16APSK
12200.0000 - 12750.0000 MHz	54M0G7D		QPSK, 16APSK
11700.0000 - 12200.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
11700.0000 - 12200.0000 MHz	36M0G7D		QPSK, 8PSK, 16APSK
11700.0000 - 12200.0000 MHz	1M50G7D		QPSK, 16APSK
11700.0000 - 12200.0000 MHz	54M0G7D		QPSK, 16APSK
11450.0000 - 12200.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	1M05G7D		QPSK, 16APSK
11450.0000 - 12200.0000 MHz	27M0G7D		QPSK, 16APSK
11450.0000 - 12200.0000 MHz	36M0G7D		QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
11450.0000 - 11700.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK
11450.0000 - 11700.0000 MHz	139MG7D		QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M05G7D		QPSK, 16APSK
11200.0000 - 11450.0000 MHz	139MG7D		QPSK, 16APSK
11200.0000 - 11450.0000 MHz	1M05G7D		QPSK, 16APSK
11200.0000 - 11450.0000 MHz	54M0G7D		QPSK, 16APSK
10950.0000 - 12200.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
10950.0000 - 12200.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK
10950.0000 - 12200.0000 MHz	27M0G7W		QPSK, 16APSK
10950.0000 - 12200.0000 MHz	1M05G7D		QPSK, 16APSK
10950.0000 - 11700.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK

10950.0000 - 11700.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	1M20G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11200.0000 MHz	54M0G7D	QPSK, 8PSK, 16APSK
10950.0000 - 11200.0000 MHz	139MG7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	1M05G7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	139MG7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK

Points of Communication:

MELCO Remotes - E117 WA (S2873) - (116.8 W.L.)

MELCO Remotes - ESTRELA DO SUL 2 - (63 W.L.)

MELCO Remotes - TELSTAR 11N (S2357) - (37.5 W.L.)

PPA Remotes - ANIK G1 - (107.3 W.L.)

PPA Remotes - APSTAR 6 - (226 W.L.)

PPA Remotes - Apstar 7 - (76.5 E.L.)

PPA Remotes - AsiaSat 5 - (100.5E)

PPA Remotes - AsiaSat 7 - (105.5 E.L.)

PPA Remotes - E117 WA (S2873) - (116.8 W.L.)

PPA Remotes - ESTRELA DO SUL 2 - (63 W.L.)

PPA Remotes - Eutelsat 10A (W2A) - (10.0 E.L.)

PPA Remotes - EUTELSAT 172A(S2610) - (174 E. L.)

PPA Remotes - Eutelsat 70B - (70.5 E.L.)

PPA Remotes - EUTELSAT115WB(S2938) - (114.9 W.L.)

PPA Remotes - EUTELSAT172B(S3021) - (172 E.L.)

PPA Remotes - GALAXY 16 (S2687) - (99 W.L.)

PPA Remotes - INTELSAT 14 (S2785) - (45.0 W.L.)

PPA Remotes - INTELSAT 15 (S2789) - (85.15 E.L.)

PPA Remotes - INTELSAT 21 (S2863) - (58.0 W.L.)

PPA Remotes - INTELSAT 29e (S2913) - (50.0 W.L.)

PPA Remotes - INTELSAT 33e (S2939) - (60.0 E.L.)

PPA Remotes - JCSAT 5A - (132 E.L.)

PPA Remotes - JCSAT-2B - (154 E.L.)

PPA Remotes - NSS-6 - (95 E.L.)

PPA Remotes - PERMITTED LIST - ()

PPA Remotes - SES-15 (S2951) - (129.15 W.L.)

PPA Remotes - Superbird C2 - (144 E.L.)

PPA Remotes - TELSTAR 11N (S2357) - (37.5 W.L.)

PPA Remotes - TELSTAR 12 V (S2933) - (15 W.L.)

PPA Remotes - Yamal 300K - (177 W.L.)

PPA Remotes - Yamal 401 - (90 E.L.)

SPA Remotes - ANIK G1 - (107.3 W.L.)

SPA Remotes - APSTAR 6 - (226 W.L.)

SPA Remotes - Apstar 7 - (76.5 E.L.)

SPA Remotes - AsiaSat 5 - (100.5E)

SPA Remotes - AsiaSat 7 - (105.5 E.L.)

SPA Remotes - E117 WA (S2873) - (116.8 W.L.)

SPA Remotes - ESTRELA DO SUL 2 - (63 W.L.)

SPA Remotes - Eutelsat 10A (W2A) - (10.0 E.L.)

SPA Remotes - EUTELSAT 172A(S2610) - (174 E. L.)

SPA Remotes - Eutelsat 70B - (70.5 E.L.)

SPA Remotes - EUTELSAT115WB(S2938) - (114.9 W.L.)

SPA Remotes - EUTELSAT172B(S3021) - (172 E.L.)

SPA Remotes - GALAXY 16 (S2687) - (99 W.L.)

SPA Remotes - INTELSAT 14 (S2785) - (45.0 W.L.)

SPA Remotes - INTELSAT 15 (S2789) - (85.15 E.L.)

SPA Remotes - INTELSAT 21 (S2863) - (58.0 W.L.)

SPA Remotes - INTELSAT 29e (S2913) - (50.0 W.L.)

SPA Remotes - INTELSAT 33e (S2939) - (60.0 E.L.)

SPA Remotes - JCSAT 5A - (132 E.L.)

SPA Remotes - JCSAT-2B - (154 E.L.)

SPA Remotes - NSS-6 - (95 E.L.)

SPA Remotes - PERMITTED LIST - ()

SPA Remotes - SES-15 (S2951) - (129.15 W.L.)

SPA Remotes - SUPERBIRD C2 (S2639) - (144 E.L.)

SPA Remotes - TELSTAR 11N (S2357) - (37.5 W.L.)

SPA Remotes - TELSTAR 12 V (S2933) - (15 W.L.)

SPA Remotes - Yamal 300K - (177 W.L.)

SPA Remotes - Yamal 401 - (90 E.L.)

TECOM Remotes - ANIK G1 - (107.3 W.L.)

TECOM Remotes - ESTRELA DO SUL 2 - (63 W.L.)

TECOM Remotes - EUTELSAT115WB(S2938) - (114.9 W.L.)

TECOM Remotes - EUTELSAT172B(S3021) - (172 E.L.)

TECOM Remotes - GALAXY 16 (S2687) - (99 W.L.)

TECOM Remotes - GE-23 - (188 W.L.)

TECOM Remotes - INTELSAT 21 (S2863) - (58.0 W.L.)

TECOM Remotes - INTELSAT 29e (S2913) - (50.0 W.L.)

TECOM Remotes - PERMITTED LIST - ()

TECOM Remotes - SES-15 (S2951) - (129.15 W.L.)

TECOM Remotes - TELSTAR 11N (S2357) - (37.5 W.L.)

TECOM Remotes - Yamal 300K - (177 W.L.)

SES-MFS-20180122-00052 E E100089 Panasonic Avionics Corporation
 Modification
 Grant of Authority

08/31/2011 - 08/31/2026
 Date Effective: 08/01/2018

Class of Station: Other

Nature of Service: Earth Station Aboard Aircraft, Fixed Satellite Service, Other

SITE ID: MELCO Remotes
 LOCATION: US&P, International waters

ANTENNA ID: MELCO 0.68 meters Mitsubishi Electronics 726-20176-101

14000.0000 - 14400.0000 MHz	9M00G7D	42.15 dBW	BPSK, QPSK DIGITAL DATA
14000.0000 - 14400.0000 MHz	500KG7D	32.70 dBW	BPSK, QPSK DIGITAL DATA
10950.0000 - 11200.0000 MHz	1M20G7D		BPSK, QPSK DIGITAL DATA
10950.0000 - 11200.0000 MHz	27M0G7D		BPSK, QPSK DIGITAL DATA
10950.0000 - 11200.0000 MHz	54M0G7D		BPSK, QPSK DIGITAL DATA
11450.0000 - 12200.0000 MHz	1M20G7D		BPSK, QPSK DIGITAL DATA
11450.0000 - 12200.0000 MHz	27M0G7D		BPSK, QPSK DIGITAL DATA
11450.0000 - 12200.0000 MHz	54M0G7D		BPSK, QPSK DIGITAL DATA
11700.0000 - 12200.0000 MHz	1M20G7D		BPSK, QPSK DIGITAL DATA
11700.0000 - 12200.0000 MHz	54M0G7D		BPSK, QPSK DIGITAL DATA
14000.0000 - 14400.0000 MHz	9M00G7D	39.85 dBW	BPSK, QPSK
14000.0000 - 14400.0000 MHz	500KG7D	27.30 dBW	BPSK, QPSK

SITE ID: PPA Remotes
LOCATION: US&P, International waters

ANTENNA ID:	PPA	0.89 meters	PANASONIC	AURA LE
14000.0000 - 14500.0000 MHz	500KG7D	44.50 dBW	BPSK, SPREAD SPECTRUM	
14000.0000 - 14500.0000 MHz	9M00G7D	48.00 dBW	BPSK, SPREAD SPECTRUM	
11450.0000 - 12750.0000 MHz	36M0G7D		PSK	
14000.0000 - 14500.0000 MHz	9M00G7D	48.00 dBW	BPSK, SPREAD SPECTRUM	
10700.0000 - 12750.0000 MHz	1M20G7D		PSK	
10700.0000 - 12750.0000 MHz	36M0G7D		PSK	
10700.0000 - 12750.0000 MHz	54M0G7D		PSK	
12500.0000 - 12750.0000 MHz	1M20G7D		PSK	
12250.0000 - 12750.0000 MHz	54M0G7D		PSK	
12250.0000 - 12750.0000 MHz	1M20G7D		PSK	
11700.0000 - 12200.0000 MHz	54M0G7D		PSK	
11700.0000 - 12200.0000 MHz	1M20G7D		PSK	

11450.0000 - 12750.0000 MHz	27M0G7D		PSK
11450.0000 - 12750.0000 MHz	1M20G7D		PSK
10950.0000 - 11700.0000 MHz	54M0G7D		PSK
10950.0000 - 11700.0000 MHz	1M20G7D		PSK
10950.0000 - 11200.0000 MHz	27M0G7D		PSK
11700.0000 - 12200.0000 MHz	36M0G7D		PSK
10950.0000 - 12500.0000 MHz	54M0G7D		PSK
10950.0000 - 12500.0000 MHz	36M0G7D		PSK
10950.0000 - 12500.0000 MHz	1M20G7D		PSK
10950.0000 - 12200.0000 MHz	54M0G7D		PSK
10950.0000 - 12200.0000 MHz	1M20G7D		PSK
10950.0000 - 11200.0000 MHz	48M6G7D		PSK
11450.0000 - 12200.0000 MHz	1M20G7D		PSK
11450.0000 - 12200.0000 MHz	48M6G7D		PSK
11450.0000 - 12200.0000 MHz	54M0G7D		PSK
12500.0000 - 12600.0000 MHz	1M20G7D		PSK
12500.0000 - 12600.0000 MHz	48M6G7D		PSK
12500.0000 - 12600.0000 MHz	54M0G7D		PSK
10950.0000 - 11200.0000 MHz	1M20G7D		PSK
14000.0000 - 14500.0000 MHz	21M0G7D	48.00 dBW	QPSK
10700.0000 - 12750.0000 MHz	1M05G7D		QPSK, 16APSK
10950.0000 - 11200.0000 MHz	1M05G7D		QPSK, 16APSK
10950.0000 - 11200.0000 MHz	72M0G7D		QPSK, 16APSK
10950.0000 - 11700.0000 MHz	1M05G7D		QPSK, 16APSK
10950.0000 - 12200.0000 MHz	112MG7D		QPSK, 16APSK
10950.0000 - 12200.0000 MHz	1M05G7D		QPSK, 16APSK

11200.0000 - 11450.0000 MHz	139MG7D		QPSK, 16APSK
11200.0000 - 11450.0000 MHz	54M0G7D		QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M05G7D		QPSK, 16APSK
11450.0000 - 12200.0000 MHz	1M05G7D		QPSK, 16APSK
11450.0000 - 12200.0000 MHz	97M2G7D		QPSK, 16APSK
11450.0000 - 12750.0000 MHz	72M0G7D		QPSK, 16APSK
12200.0000 - 12750.0000 MHz	139MG7D		QPSK, 16APSK
12200.0000 - 12750.0000 MHz	54M0G7D		QPSK, 16APSK
12250.0000 - 12750.0000 MHz	72M0G7D		QPSK, 16APSK
12500.0000 - 12750.0000 MHz	72M0G7D		QPSK, 16APSK
14000.0000 - 14500.0000 MHz	32K0G7D	35.96 dBW	QPSK
10700.0000 - 12200.0000 MHz	139MG7D		QPSK, 16APSK
10700.0000 - 12200.0000 MHz	1M05G7D		QPSK, 16APSK
10950.0000 - 11200.0000 MHz	139MG7D		QPSK, 16APSK
10950.0000 - 11200.0000 MHz	54M0G7D		QPSK, 16APSK
10950.0000 - 11200.0000 MHz	97M2G7D		QPSK, 16APSK
10950.0000 - 11700.0000 MHz	72M0G7D		QPSK, 16APSK
10950.0000 - 12200.0000 MHz	125MG7D		QPSK, 16APSK
10950.0000 - 12200.0000 MHz	36M0G7W		QPSK, 16APSK
11200.0000 - 11450.0000 MHz	1M05G7D		QPSK, 16APSK
11450.0000 - 11700.0000 MHz	139MG7D		QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M05G7D		QPSK, 16APSK
11450.0000 - 11700.0000 MHz	54M0G7D		QPSK, 16APSK
11450.0000 - 12200.0000 MHz	27M0G7D		QPSK, 16APSK
11450.0000 - 12200.0000 MHz	36M0G7D		QPSK, 16APSK
11450.0000 - 12750.0000 MHz	1M05G7D		QPSK, 16APSK

11700.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
12200.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK
12200.0000 - 12750.0000 MHz	36M0G7D	QPSK, 16APSK
12250.0000 - 12750.0000 MHz	1M50G7D	QPSK, 16APSK
12500.0000 - 12600.0000 MHz	1M05G7D	QPSK, 16APSK
12500.0000 - 12600.0000 MHz	97M2G7D	QPSK, 16APSK
12500.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK
12500.0000 - 12750.0000 MHz	54M0G7D	QPSK, 16APSK

SITE ID: SPA Remotes
LOCATION: US&P, International waters

ANTENNA ID:	SPA	0.949 meters	PANASONIC	SPA
14000.0000 - 14500.0000 MHz	500KG7D	45.00 dBW		QPSK, 8PSK, 16APSK
14000.0000 - 14500.0000 MHz	9M00G7D	45.00 dBW		QPSK, 8PSK, 16APSK
10700.0000 - 12750.0000 MHz	1M20G7D			QPSK, 8PSK, 16APSK
10700.0000 - 12750.0000 MHz	36M0G7D			QPSK, 8PSK, 16APSK
10950.0000 - 11700.0000 MHz	1M20G7D			QPSK, 8PSK, 16APSK
10950.0000 - 11700.0000 MHz	54M0G7D			QPSK, 8PSK, 16APSK
10950.0000 - 12500.0000 MHz	1M20G7D			QPSK, 8PSK, 16APSK
10950.0000 - 12500.0000 MHz	54M0G7D			QPSK, 8PSK, 16APSK
11450.0000 - 11700.0000 MHz	1M20G7D			QPSK, 8PSK, 16APSK
11450.0000 - 11950.0000 MHz	1M20G7D			QPSK, 8PSK, 16APSK
11450.0000 - 11950.0000 MHz	54M0G7D			QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	1M20G7D			QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	54M0G7D			QPSK, 8PSK, 16APSK
11450.0000 - 12750.0000 MHz	1M20G7D			QPSK, 8PSK, 16APSK
11450.0000 - 12750.0000 MHz	36M0G7D			QPSK, 8PSK, 16APSK
11450.0000 - 12750.0000 MHz	54M0G7D			QPSK, 8PSK, 16APSK

11700.0000 - 12200.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
11700.0000 - 12200.0000 MHz	36M0G7D		QPSK, 8PSK, 16APSK
11700.0000 - 12200.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK
12200.0000 - 12750.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
12200.0000 - 12750.0000 MHz	36M0G7D		QPSK, 8PSK, 16APSK
12250.0000 - 12750.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
12250.0000 - 12750.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK
12500.0000 - 12750.0000 MHz	36M0G7D		QPSK, 8PSK, 16APSK
12500.0000 - 12600.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
12500.0000 - 12600.0000 MHz	48M6G7D		QPSK, 8PSK, 16APSK
12500.0000 - 12600.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK
10950.0000 - 11200.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
10950.0000 - 11200.0000 MHz	48M6G7D		QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	48M6G7D		QPSK, 8PSK, 16APSK
12500.0000 - 12750.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
14000.0000 - 14500.0000 MHz	21M0G7D	45.00 dBW	QPSK
14000.0000 - 14500.0000 MHz	32K0G7D	34.21 dBW	QPSK
10700.0000 - 12750.0000 MHz	1M05G7D		QPSK, 16APSK
10950.0000 - 11200.0000 MHz	54M0G7D		QPSK, 16APSK
10950.0000 - 11700.0000 MHz	1M05G7D		QPSK, 16APSK
10950.0000 - 12200.0000 MHz	125MG7D		QPSK, 16APSK
11200.0000 - 11450.0000 MHz	139MG7D		QPSK, 16APSK
11450.0000 - 11700.0000 MHz	139MG7D		QPSK, 16APSK
11450.0000 - 11950.0000 MHz	1M05G7D		QPSK, 16APSK
11450.0000 - 12200.0000 MHz	27M0G7D		QPSK, 16APSK
12200.0000 - 12750.0000 MHz	54M0G7D		QPSK, 16APSK

12500.0000 - 12600.0000 MHz	97M2G7D	QPSK, 16APSK
12500.0000 - 12750.0000 MHz	72M0G7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	139MG7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	72M0G7D	QPSK, 16APSK
10950.0000 - 11700.0000 MHz	139MG7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	112MG7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	27M0G7W	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	54M0G7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 11950.0000 MHz	72M0G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	97M2G7D	QPSK, 16APSK
12250.0000 - 12750.0000 MHz	72M0G7D	QPSK, 16APSK
10700.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	139MG7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	1M05G7D	QPSK, 16APSK
10950.0000 - 11200.0000 MHz	97M2G7D	QPSK, 16APSK
10950.0000 - 11700.0000 MHz	72M0G7D	QPSK, 16APSK
10950.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
11200.0000 - 11450.0000 MHz	1M05G7D	QPSK, 16APSK
11450.0000 - 11700.0000 MHz	54M0G7D	QPSK, 16APSK
11450.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
11700.0000 - 12200.0000 MHz	1M05G7D	QPSK, 16APSK
12200.0000 - 12750.0000 MHz	139MG7D	QPSK, 16APSK
12200.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK
12500.0000 - 12600.0000 MHz	1M50G7D	QPSK, 16APSK
12500.0000 - 12750.0000 MHz	1M05G7D	QPSK, 16APSK

12500.0000 - 12750.0000 MHz	54M0G7D		QPSK, 16APSK
SITE ID:	TECOM Remotes		
LOCATION:	US&P, International waters		
ANTENNA ID:	TECOM	0.62 meters	TECOM
			KU-STREAM 1000
14000.0000 - 14500.0000 MHz	9M00G7D	43.80 dBW	BPSK, QPSK DIGITAL DATA
10950.0000 - 11200.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
10950.0000 - 11200.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK
10950.0000 - 11700.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
10950.0000 - 11700.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK
10950.0000 - 12200.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
10950.0000 - 12200.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK
11450.0000 - 11700.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
11450.0000 - 11700.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
11450.0000 - 12200.0000 MHz	54M0G7D		QPSK, 8PSK, 16APSK
11700.0000 - 12200.0000 MHz	1M20G7D		QPSK, 8PSK, 16APSK
11700.0000 - 12200.0000 MHz	36M0G7D		QPSK, 8PSK, 16APSK
14000.0000 - 14500.0000 MHz	500KG7D	43.80 dBW	BPSK, QPSK DIGITAL DATA
10700.0000 - 12200.0000 MHz	139MG7D		QPSK, 16APSK
10950.0000 - 11200.0000 MHz	1M05G7D		QPSK, 16APSK
10950.0000 - 12200.0000 MHz	27M0G7W		QPSK, 16APSK
11200.0000 - 11450.0000 MHz	1M05G7D		QPSK, 16APSK
11450.0000 - 11700.0000 MHz	139MG7D		QPSK, 16APSK
11450.0000 - 12200.0000 MHz	27M0G7D		QPSK, 16APSK
11450.0000 - 12200.0000 MHz	36M0G7D		QPSK, 16APSK
11700.0000 - 12200.0000 MHz	54M0G7D		QPSK, 16APSK
12200.0000 - 12750.0000 MHz	1M50G7D		QPSK, 16APSK

14000.0000 - 14500.0000 MHz	21M0G7D	43.80 dBW	QPSK
14000.0000 - 14500.0000 MHz	32K0G7D	40.39 dBW	QPSK
10700.0000 - 12200.0000 MHz	1M05G7D		QPSK, 16APSK
10950.0000 - 11200.0000 MHz	139MG7D		QPSK, 16APSK
10950.0000 - 11700.0000 MHz	1M05G7D		QPSK, 16APSK
11200.0000 - 11450.0000 MHz	139MG7D		QPSK, 16APSK
11200.0000 - 11450.0000 MHz	54M0G7D		QPSK, 16APSK
11450.0000 - 11700.0000 MHz	1M05G7D		QPSK, 16APSK
11450.0000 - 12200.0000 MHz	1M05G7D		QPSK, 16APSK
11700.0000 - 12200.0000 MHz	1M50G7D		QPSK, 16APSK
12200.0000 - 12750.0000 MHz	139MG7D		QPSK, 16APSK
12200.0000 - 12750.0000 MHz	54M0G7D		QPSK, 16APSK
10950.0000 - 12200.0000 MHz	1M05G7D		QPSK, 16APSK

Points of Communication:

MELCO Remotes - E117 WA (S2873) - (116.8 W.L.)

MELCO Remotes - ESTRELA DO SUL 2 - (63 W.L.)

MELCO Remotes - TELSTAR 11N (S2357) - (37.5 W.L.)

PPA Remotes - ANIK G1 - (107.3 W.L.)

PPA Remotes - APSTAR 6 - (226 W.L.)

PPA Remotes - Apstar 7 - (76.5 E.L.)

PPA Remotes - AsiaSat 5 - (100.5E)

PPA Remotes - AsiaSat 7 - (105.5 E.L.)

PPA Remotes - E117 WA (S2873) - (116.8 W.L.)

PPA Remotes - ESTRELA DO SUL 2 - (63 W.L.)

PPA Remotes - Eutelsat 10A (W2A) - (10.0 E.L.)

PPA Remotes - Eutelsat 70B - (70.5 E.L.)

PPA Remotes - EUTELSAT115WB(S2938) - (114.9 W.L.)

PPA Remotes - EUTELSAT172B(S3021) - (172 E.L.)

PPA Remotes - Express AM5 - (140.0 E. L)
PPA Remotes - Express AM6 - (53.0 E.L.)
PPA Remotes - GALAXY 16 (S2687) - (99 W.L.)
PPA Remotes - INTELSAT 14 (S2785) - (45.0 W.L.)
PPA Remotes - INTELSAT 15 (S2789) - (85.15 E.L.)
PPA Remotes - INTELSAT 21 (S2863) - (58.0 W.L.)
PPA Remotes - INTELSAT 29e (S2913) - (50.0 W.L.)
PPA Remotes - INTELSAT 33e (S2939) - (60.0 E.L.)
PPA Remotes - JCSAT 5A - (132 E.L.)
PPA Remotes - JCSAT-2B - (154 E.L.)
PPA Remotes - NSS-6 - (95 E.L.)
PPA Remotes - PERMITTED LIST - ()
PPA Remotes - SES-15 (S2951) - (129.15 W.L.)
PPA Remotes - Superbird C2 - (144 E.L.)
PPA Remotes - TELSTAR 11N (S2357) - (37.5 W.L.)
PPA Remotes - TELSTAR 12 V (S2933) - (15 W.L.)
PPA Remotes - Yamal 300K - (177 W.L.)
PPA Remotes - Yamal 401 - (90 E.L.)
SPA Remotes - ANIK G1 - (107.3 W.L.)
SPA Remotes - APSTAR 6 - (226 W.L.)
SPA Remotes - Apstar 7 - (76.5 E.L.)
SPA Remotes - AsiaSat 5 - (100.5E)
SPA Remotes - AsiaSat 7 - (105.5 E.L.)
SPA Remotes - E117 WA (S2873) - (116.8 W.L.)
SPA Remotes - ESTRELA DO SUL 2 - (63 W.L.)
SPA Remotes - Eutelsat 10A (W2A) - (10.0 E.L.)
SPA Remotes - EUTELSAT 172A(S2610) - (174 E. L.)
SPA Remotes - Eutelsat 70B - (70.5 E.L.)
SPA Remotes - EUTELSAT115WB(S2938) - (114.9 W.L.)
SPA Remotes - EUTELSAT172B(S3021) - (172 E.L.)

SPA Remotes - Express AM5 - (140.0 E. L.)

SPA Remotes - Express AM6 - (53.0 E.L.)

SPA Remotes - GALAXY 16 (S2687) - (99 W.L.)

SPA Remotes - INTELSAT 14 (S2785) - (45.0 W.L.)

SPA Remotes - INTELSAT 15 (S2789) - (85.15 E.L.)

SPA Remotes - INTELSAT 21 (S2863) - (58.0 W.L.)

SPA Remotes - INTELSAT 29e (S2913) - (50.0 W.L.)

SPA Remotes - INTELSAT 33e (S2939) - (60.0 E.L.)

SPA Remotes - JCSAT 5A - (132 E.L.)

SPA Remotes - JCSAT-2B - (154 E.L.)

SPA Remotes - NSS-6 - (95 E.L.)

SPA Remotes - PERMITTED LIST - ()

SPA Remotes - SES-15 (S2951) - (129.15 W.L.)

SPA Remotes - SUPERBIRD C2 (S2639) - (144 E.L.)

SPA Remotes - TELSTAR 11N (S2357) - (37.5 W.L.)

SPA Remotes - TELSTAR 12 V (S2933) - (15 W.L.)

SPA Remotes - Yamal 300K - (177 W.L.)

SPA Remotes - Yamal 401 - (90 E.L.)

TECOM Remotes - ANIK G1 - (107.3 W.L.)

TECOM Remotes - ESTRELA DO SUL 2 - (63 W.L.)

TECOM Remotes - EUTELSAT115WB(S2938) - (114.9 W.L.)

TECOM Remotes - EUTELSAT172B(S3021) - (172 E.L.)

TECOM Remotes - GALAXY 16 (S2687) - (99 W.L.)

TECOM Remotes - GE-23 - (188 W.L.)

TECOM Remotes - INTELSAT 21 (S2863) - (58.0 W.L.)

TECOM Remotes - INTELSAT 29e (S2913) - (50.0 W.L.)

TECOM Remotes - PERMITTED LIST - ()

TECOM Remotes - SES-15 (S2951) - (129.15 W.L.)

TECOM Remotes - TELSTAR 11N (S2357) - (37.5 W.L.)

6633.0000 - 6639.0000 MHz	36M0G7W	78.50 dBW	DIGITAL, VARIOUS COMBINATION OF CARRIERS
6587.0000 - 6627.0000 MHz	1M23G7W-	63.80 dBW	DIGITAL, VARIOUS COMBINATION OF CARRIERS
6587.0000 - 6627.0000 MHz	36M0G7W	78.50 dBW	DIGITAL, VARIOUS COMBINATION OF CARRIERS
3600.0000 - 3698.0000 MHz	1M23G7W-		DIGITAL, VARIOUS COMBINATION OF CARRIERS
3600.0000 - 3698.0000 MHz	36M0G7W		DIGITAL, VARIOUS COMBINATION OF CARRIERS
ANTENNA ID: 11M	11 meters	VERTEX	KPC
5925.0000 - 6425.0000 MHz	51K2G7D-	59.50 dBW	DIGITAL DATA, FEC, 3/4, 1/2 ETC., QPSK.
5925.0000 - 6425.0000 MHz	36M0G7D	84.00 dBW	DIGITAL DATA, FEC, 3/4, 1/2 ETC., QPSK.
5925.0000 - 6425.0000 MHz	36M0G7W	82.40 dBW	DIGITAL, VARIOUS COMBINATION OF CARRIERS. Emission range: 51K2G7W to 36M0G7W
5925.0000 - 6425.0000 MHz	51K2G7W	59.50 dBW	DIGITAL, VARIOUS COMBINATION OF CARRIERS
5925.0000 - 6425.0000 MHz	36M0G7D	82.40 dBW	DIGITAL DATA, FEC, 3/4, 1/2 ETC., QPSK. MESAT-2 only
5925.0000 - 6425.0000 MHz	51K2G7D	59.50 dBW	DIGITAL DATA, FEC, 3/4, 1/2 ETC., QPSK. Emission Range: 51K2G7D-36M0G7D. MESAT-2 only
5925.0000 - 6425.0000 MHz	10M1G7W	73.38 dBW	DIGITAL DATA, VARIOUS FEC, 3/4, 1/2 ETC., VARIOUS MOD., QPSK, ETC.
5925.0000 - 6425.0000 MHz	4M09G7W	70.84 dBW	DIGITAL DATA, VARIOUS FEC, 3/4, 1/2 ETC., VARIOUS MOD., QPSK, ETC.
3700.0000 - 4200.0000 MHz	51K2G7D-		DIGITAL, QPSK, 3/4 1/2 FEC
3700.0000 - 4200.0000 MHz	36M0G7D		DIGITAL, QPSK, 3/4 1/2 FEC
3700.0000 - 4200.0000 MHz	36M0G7W		DIGITAL, VARIOUS COMBINATION OF CARRIERS
3700.0000 - 4200.0000 MHz	51K2G7W		DIGITAL, VARIOUS COMBINATION OF CARRIERS. Emission range: 51K2G7W to 36M0G7W

3700.0000 - 4200.0000 MHz	36M0G7D			DIGITAL DATA, FEC, 3/4, 1/2 ETC., QPSK. Emission Range: 51K2G7D-36M0G7D.
3700.0000 - 4200.0000 MHz	51K2G7D			DIGITAL DATA, VARIOUS FEC, 3/4, 1/2 ETC., VARIOUS MOD., QPSK, ETC.
3700.0000 - 4200.0000 MHz	10M1G7W			DIGITAL DATA, VARIOUS FEC, 3/4, 1/2 ETC., VARIOUS MOD., QPSK, ETC.
3700.0000 - 4200.0000 MHz	4M09G7W			DIGITAL DATA, VARIOUS FEC, 3/4, 1/2 ETC., VARIOUS MOD., QPSK, ETC.
ANTENNA ID: 9.3M-2nd	9.3 meters	ANDREW CORP.		ESA9.3-46
5925.0000 - 6425.0000 MHz	36M0G7F	77.40 dBW		DIGITAL VIDEO
5925.0000 - 6425.0000 MHz	3M00G7F	73.40 dBW		DIGITAL VIDEO. Emission range: 3M00G7F to 36M0G7F
5925.0000 - 6425.0000 MHz	36M0G7W	80.43 dBW		DIGITAL, VARIOUS COMBINATION OF CARRIERS
5925.0000 - 6425.0000 MHz	51K2G7W	57.97 dBW		DIGITAL, VARIOUS COMBINATION OF CARRIERS. Emission range: 51K2G7W to 36M0G7W
5925.0000 - 6425.0000 MHz	36M0G7D	80.43 dBW		DIGITAL DATA, VARIOUS FEC 3/4, 1/2 ETC VARIOUS MOD QPSK, ETC.
5925.0000 - 6425.0000 MHz	51K2G7D	57.97 dBW		DIGITAL DATA, VARIOUS FEC 3/4, 1/2 ETC VARIOUS MOD QPSK, ETC. Emission range: 51K2G7D to 36M0G7D
3700.0000 - 4200.0000 MHz	36M0G7F			DIGITAL VIDEO
3700.0000 - 4200.0000 MHz	3M00G7F			DIGITAL VIDEO. Emission range: 3M00G7F to 36M0G7F
3700.0000 - 4200.0000 MHz	36M0G7W			DIGITAL, VARIOUS COMBINATION OF CARRIERS
3700.0000 - 4200.0000 MHz	51K2G7W			DIGITAL, VARIOUS COMBINATION OF CARRIERS. Emission range: 51K2G7W to 36M0G7W
3700.0000 - 4200.0000 MHz	36M0G7D			DIGITAL DATA, VARIOUS FEC 3/4, 1/2 ETC VARIOUS MOD QPSK, ETC.
3700.0000 - 4200.0000 MHz	51K2G7D			DIGITAL DATA, VARIOUS FEC 3/4, 1/2 ETC VARIOUS MOD QPSK, ETC. Emission range: 51K2G7D to 36M0G7D
5850.0000 - 5925.0000 MHz	400KG7W	69.10 dBW		TT&C Traffic

Points of Communication:

1 - ABS-3A (S2987) - (3.0 W.L.)

1 - APSTAR 5 - (138 E.L.)

1 - APSTAR 6 - (226 W.L.)

1 - JCSAT 5A - (132 E.L.)

1 - MEASAT-2 - (148 E.L.)

1 - PERMITTED LIST - ()

1 - TELSTAR 18 - (138 E. L.)

SES-MOD-20180420-00381 E E000166 HNS License Sub, LLC

Application for Modification

09/13/2010 - 09/13/2025

Grant of Authority

Date Effective: 08/03/2018

Class of Station: VSAT Network

Nature of Service: Fixed Satellite Service

SITE ID: TR 1.2M.

LOCATION: VSAT 1.2M (100,000 UNITS), CONUS, AK, HI, VI PR

ANTENNA ID:	TR 1.2M.	1.2 meters	PRODELIN/ SKYWARE GLOBAL	HNS-AN-/9505170-0013
	14000.0000 - 14500.0000 MHz	400KG7D	46.10 dBW	OQPSK, DIGITAL, 256 KSPS, RETURN CARRIER
	14000.0000 - 14500.0000 MHz	200KG7D	46.10 dBW	PSK, DIGITAL, 128 KSPS, INROUTE CARRIER
	14000.0000 - 14500.0000 MHz	800KG7D	46.10 dBW	OQPSK, DIGITAL, 512 KSPS, RETURN CARRIER
	14000.0000 - 14500.0000 MHz	1M60G7D	46.10 dBW	PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER
	11700.0000 - 12200.0000 MHz	24M0G7D		OQPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER
	11700.0000 - 12200.0000 MHz	36M0G7D		PSK, DATA, 30 MSPS, OUTROUTE CARRIER
	11700.0000 - 12200.0000 MHz	12M0G7D		OQPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER
	11700.0000 - 12200.0000 MHz	6M00G7D		OQPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

11700.0000 - 12200.0000 MHz	400KG7D		PSK, DATA, 256 KSPS, OUTROUTE CARRIER
SITE ID: TR 1.8M.			
LOCATION: VSAT 1.8M (50,000 UNITS), CONUS, AK, HI, VI PR			
ANTENNA ID: TR 1.8M.	1.8 meters	PRODELIN CORP.	HNS-AN-180P-KU
14000.0000 - 14500.0000 MHz	800KG7D	49.70 dBW	OQPSK, DIGITAL, 512 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	1M60G7D	49.70 dBW	PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER
14000.0000 - 14500.0000 MHz	200KG7D	49.70 dBW	PSK, DIGITAL, 128 KSPS, INROUTE CARRIER
14000.0000 - 14500.0000 MHz	400KG7D	49.70 dBW	OQPSK, DIGITAL, 256 KSPS, RETURN CARRIER
11700.0000 - 12200.0000 MHz	24M0G7D		OQPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	36M0G7D		PSK, DATA, 30 MSPS, OUTROUTE CARRIER
11700.0000 - 12200.0000 MHz	6M00G7D		OQPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	12M0G7D		OQPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	400KG7D		PSK, DATA, 256 KSPS, OUTROUTE CARRIER

SITE ID: HUB-B
LOCATION: 7.6M (HUB) 11717 EXPLORATION LANE, MONTGOMERY, GERMANTOWN, MD
39 ° 10 ' 45.50 " N LAT. 77 ° 14 ' 41.20 " W LONG.

ANTENNA ID: HubB7.6	7.6 meters	ANDREW CORP.	ES76K-1
14000.0000 - 14500.0000 MHz	24M0G7D	78.00 dBW	PSK, DATA, 20 MSPS, OUTROUTE CARRIER
14000.0000 - 14500.0000 MHz	36M0G7D	78.00 dBW	PSK, DATA, 30 MSPS, OUTROUTE CARRIER
14000.0000 - 14500.0000 MHz	400KG7D	47.90 dBW	PSK, DATA, 256 KSPS, OUTROUTE CARRIER
14000.0000 - 14500.0000 MHz	1M60G7D	53.90 dBW	BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER

11700.0000 - 12200.0000 MHz	400KG7D	OQPSK, DIGITAL, 256 KSPS, RETURN CARRIER
11700.0000 - 12200.0000 MHz	200KG7D	BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	400KG7D	BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	800KG7D	BPSK OR MSK, DATA, 512 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	1M60G7D	PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	200KG7D	PSK, DIGITAL, 128 KSPS, INROUTE CARRIER

SITE ID: TR 1.0M.
LOCATION: VSAT 1.0M (135 cm x 58 cm) (100,000 UNITS), CONUS, AK, HI, PR, VI

ANTENNA ID: TR 1.0M.	1 meters	PRODELIN CORP.	1102 (135 cm x 58 cm)
14000.0000 - 14500.0000 MHz	400KG7D	44.00 dBW	OQPSK, DIGITAL, 256 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	200KG7D	44.00 dBW	PSK, DIGITAL 128 KSPS, INROUTE CARRIER
14000.0000 - 14500.0000 MHz	800KG7D	44.00 dBW	OQPSK, DIGITAL 512 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	1M60G7D	44.00 dBW	PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	36M0G7D		PSK, DATA, 30 MSPS, OUTROUTE CARRIER
11700.0000 - 12200.0000 MHz	6M00G7D		OQPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	12M0G7D		OQPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	24M0G7D		OQPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	400KG7D		PSK, DATA, 256 KSPS, OUTROUTE CARRIER

SITE ID: TFTR 98CM
LOCATION: VSAT 0.98M temporary-fixed (54,000 UNITS), CONUS, AK, HI, PR, VI

ANTENNA ID: TFTR 98CM	0.98 meters	PRODELIN	HNS-AN-098P-KU
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14000.0000 - 14500.0000 MHz	200KG7D	44.30 dBW	PSK, DIGITAL, 128 KSPS, INROUTE CARRIER
14000.0000 - 14500.0000 MHz	400KG7D	44.30 dBW	OQPSK, DIGITAL, 256 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	800KG7D	44.30 dBW	OQPSK, DIGITAL, 512 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	1M60G7D	44.30 dBW	PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER
14000.0000 - 14500.0000 MHz	400KG7D	44.30 dBW	DIGITAL, PSK, DIGITAL, 256 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	800KG7D	44.30 dBW	DIGITAL, PSK, DIGITAL, 512 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	1M60G7D	44.30 dBW	PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER

ANTENNA ID: TFTR 98CM 0.98 meters RAVEN MANUFACTURING LIMITED HNS-AN-98R-KU

SITE ID: TFTR 74CM

LOCATION: VSAT 0.74M (98 x 56 cm) temporary-fixed (60,200 UNITS), CONUS, AK,HI,PR, VI

ANTENNA ID: TFTR 74CM 0.74 meters PRODELIN HNS-AN-074P-KU

14000.0000 - 14500.0000 MHz	200KG7D	42.00 dBW	PSK, DIGITAL, 128 KSPS, INROUTE CARRIER
14000.0000 - 14500.0000 MHz	400KG7W	42.00 dBW	OQPSK, DIGITAL, 256 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	1M60G7D	42.00 dBW	PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER
14000.0000 - 14500.0000 MHz	800KG7D	42.00 dBW	OQPSK, DIGITAL, 512 KSPS, RETURN CARRIER
11700.0000 - 12200.0000 MHz	36M0G7D		PSK, DATA, 30 MSPS, OUTROUTE CARRIER
11700.0000 - 12200.0000 MHz	24M0G7D		OQPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	6M00G7D		OQPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	12M0G7D		OQPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER

11700.0000 - 12200.0000 MHz	400KG7D	PSK, DATA, 256 KSPS, OUTROUTE CARRIER
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SITE ID: HUB-A
LOCATION: 7.6M.(HUB) 11717 EXPLORATION LANE, MONTGOMERY, GERMANTOWN, MD
39 ° 10 ' 48.80 " N LAT. 77 ° 14 ' 46.80 " W LONG.

ANTENNA ID: HubA7.6M	7.6 meters	ANDREW CORP.	ES76K-1
14000.0000 - 14500.0000 MHz	24M0G7D	78.00 dBW	PSK, DATA, 20 MSPS, OUTROUTE CARRIER
14000.0000 - 14500.0000 MHz	36M0G7D	78.00 dBW	PSK, DATA, 30 MSPS, OUTROUTE CARRIER
14000.0000 - 14500.0000 MHz	400KG7D	47.90 dBW	PSK, DATA, 256 KSPS, OUTROUTE CARRIER
14000.0000 - 14500.0000 MHz	1M60G7D	53.90 dBW	BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER
11700.0000 - 12200.0000 MHz	200KG7D		PSK, DIGITAL, 128 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	400KG7D		OQPSK, DIGITAL, 256 KSPS, RETURN CARRIER
11700.0000 - 12200.0000 MHz	200KG7D		BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	400KG7D		BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	800KG7D		BPSK OR MSK, DATA, 512 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	1M60G7D		PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER

SITE ID: MESH 3.5M.
LOCATION: (5,000 3.5M. UNITS), CONUS, AK, HI, VI PR

ANTENNA ID: MESH 3.5M	3.5 meters	COMTECH	846400G1
14000.0000 - 14500.0000 MHz	2M46G7D	66.20 dBW	BPSK OR OQPSK, DATA, MESH CARRIER
11700.0000 - 12200.0000 MHz	2M46G7D		BPSK OR OQPSK, DATA, MESH CARRIER

SITE ID: MESH 1.8M.
LOCATION: (5,000 1.8M UNITS), CONUS, AK, HI, PR VI

ANTENNA ID: MESH 1.8M	1.8 meters	HUGHES NETWORK SYSTEMS	PES-RFT-180
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14000.0000 - 14500.0000 MHz	156KG7D	48.60 dBW	BPSK OR OQPSK, DATA, MESH CARRIER
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11700.0000 - 12200.0000 MHz	156KG7D	BPSK OR OQPSK, DATA, MESH CARRIER
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SITE ID: MESH 2.4M.
LOCATION: (5,000 2.4M. UNITS), CONUS, AK, HI, PR VI

ANTENNA ID: MESH 2.4M	2.4 meters	HUGHES NETWORK SYSTEMS	PES-RFT-240
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14000.0000 - 14500.0000 MHz	307KG7D	53.70 dBW	BPSK OR OQPSK, DATA, MESH CARRIER
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11700.0000 - 12200.0000 MHz	307KG7D	BPSK OR OQPSK, DATA, MESH CARRIER
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SITE ID: MESH 1.2M.
LOCATION: (5,000 1.2M. UNITS), CONUS, AK, HI, PR VI

ANTENNA ID: MESH 1.2M	1.2 meters	HUGHES NETWORK SYTEMS	PES-RFT-120
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14000.0000 - 14500.0000 MHz	156KG7D	45.00 dBW	BPSK OR OQPSK, DATA, MESH CARRIER
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11700.0000 - 12200.0000 MHz	156KG7D	0.00 dBW	BPSK OR OQPSK, DATA, MESH CARRIER
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SITE ID: TR 74-2 CM
LOCATION: 500,000 (.74 METER ANTENNAS), CONUS, AK, HI, VI PR

ANTENNA ID: TR 74-2CM	0.74 meters	RAVEN	HNS-AN-074R-KU
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14000.0000 - 14500.0000 MHz	200KG7D	41.70 dBW	PSK, DIGITAL, 128 KSPS, INROUTE CARRIER
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14000.0000 - 14500.0000 MHz	400KG7D	41.70 dBW	OQPSK, DIGITAL, 256 KSPS, RETURN CARRIER
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14000.0000 - 14500.0000 MHz	800KG7D	41.70 dBW	OQPSK, DIGITAL, 512 KSPS, RETURN CARRIER
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14000.0000 - 14500.0000 MHz	1M60G7D	41.70 dBW	PSK, DATA, 1024 KSPS, INROUTE CARRIER
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11700.0000 - 12200.0000 MHz	6M00G7D	OQPSK, DATA, 5 MSPS, MULTIMEDIA
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11700.0000 - 12200.0000 MHz	12M0G7D	OQPSK, DATA, 10 MSPS, MULTIMEDIA
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11700.0000 - 12200.0000 MHz	24M0G7D	OQPSK, DATA, 20 MSPS, MULTIMEDIA
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11700.0000 - 12200.0000 MHz	36M0G7D	PSK, DATA, 30 MSPS, OUTROUTE CARRIER
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11700.0000 - 12200.0000 MHz	400KG7D			PSK, DATA, 256 KSPS, OUTROUTE CARRIER
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SITE ID: TFTR 74-2CM
LOCATION: 50,000 (.74 METER ANTENNAS), CONUS, AK, HI, VI PR

ANTENNA ID:	TFTR 74-2C	0.74 meters	PRODELIN	HNS-AN-074P-KU
14000.0000 - 14500.0000 MHz	200KG7D	41.70 dBW		PSK, DIGITAL, 128 KSPS, INROUTE CARRIER
14000.0000 - 14500.0000 MHz	400KG7D	41.70 dBW		PSK, DATA, 256 KSPS, OUTROUTE CARRIER
14000.0000 - 14500.0000 MHz	800KG7D	41.70 dBW		OQPSK, DIGITAL, 512 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	1M60G7D	41.70 dBW		PSK, DATA, 1024 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	6M00G7D			OQPSK, DATA, 5 MSPS, MULTIMEDIA
11700.0000 - 12200.0000 MHz	12M0G7D			OQPSK, DATA, 10 MSPS, MULTIMEDIA
11700.0000 - 12200.0000 MHz	24M0G7D			OQPSK, DATA, 20 MSPS, MULTIMEDIA
11700.0000 - 12200.0000 MHz	36M0G7D			PSK, DATA, 30 MSPS, OUTROUTE CARRIER
11700.0000 - 12200.0000 MHz	400KG7D			PSK, DATA, 256 KSPS, OUTROUTE CARRIER

SITE ID: HUB H (11.1M)
LOCATION: 17633 TECHNOLOGY BLVD. (11.1M.HUB), WASHINGTON, HAGERSTOWN, MD
39 ° 35 ' 56.30 " N LAT. 77 ° 45 ' 17.90 " W LONG.

ANTENNA ID:	HUB H 11-1	11.1 meters	VERTEX	11.1 KPK
14470.0000 - 14497.0000 MHz	6M00G7D	79.60 dBW		DIGITAL, PSK, DATA, 5 MSPS, OUTROUTE
14470.0000 - 14497.0000 MHz	12M0G7D	82.60 dBW		DIGITAL, PSK, DATA, 10 MSPS, OUTROUTE
14470.0000 - 14497.0000 MHz	24M0G7D	85.60 dBW		DIGITAL, PSK, DATA, 20 MSPS, OUTROUTE
14253.0000 - 14311.0000 MHz	12M0G7D	82.60 dBW		DIGITAL, PSK, DATA, 10 MSPS, OUTROUTE
14253.0000 - 14311.0000 MHz	24M0G7D	85.60 dBW		DIGITAL, PSK, DATA, 20 MSPS, OUTROUTE

14253.0000 - 14311.0000 MHz	36M0G7D	87.40 dBW	DIGITAL, PSK, DATA, 30 MSPS, OUTROUTE
14246.5000 - 14366.5000 MHz	6M00G7D	79.60 dBW	DIGITAL, PSK, DATA, 5 MSPS, OUTROUTE
14246.5000 - 14366.5000 MHz	12M0G7D	82.60 dBW	DIGITAL, PSK, DATA, 10 MSPS, OUTROUTE
14246.5000 - 14366.5000 MHz	24M0G7D	85.60 dBW	DIGITAL, PSK, DATA, 20 MSPS, OUTROUTE
14246.5000 - 14366.5000 MHz	36M0G7D	87.40 dBW	DIGITAL, PSK, DATA, 30 MSPS, OUTROUTE
14122.5000 - 14149.5000 MHz	6M00G7D	79.60 dBW	DIGITAL, PSK, DATA, 5 MSPS, OUTROUTE
14122.5000 - 14149.5000 MHz	12M0G7D	82.60 dBW	DIGITAL, PSK, DATA, 10 MSPS, OUTROUTE
14122.5000 - 14149.5000 MHz	24M0G7D	85.60 dBW	DIGITAL, PSK, DATA, 20 MSPS, OUTROUTE
14122.5000 - 14149.5000 MHz	36M0G7D	87.40 dBW	DIGITAL, PSK, DATA, 30 MSPS, OUTROUTE
14102.0000 - 14318.0000 MHz	36M0G7D	87.40 dBW	DIGITAL, PSK, DATA, 30 MSPS, OUTROUTE
14102.0000 - 14318.0000 MHz	6M00G7D	79.60 dBW	DIGITAL, PSK, DATA, 5 MSPS, OUTROUTE
14069.0000 - 14123.0000 MHz	6M00G7D	79.60 dBW	DIGITAL, PSK, DATA, 5 MSPS, OUTROUTE
14069.0000 - 14123.0000 MHz	12M0G7D	82.60 dBW	DIGITAL, PSK, DATA, 10 MSPS, OUTROUTE
14069.0000 - 14123.0000 MHz	24M0G7D	85.60 dBW	DIGITAL, PSK, DATA, 20 MSPS, OUTROUTE
14069.0000 - 14123.0000 MHz	36M0G7D	87.40 dBW	DIGITAL, PSK, DATA, 30 MSPS, OUTROUTE
12170.0000 - 12197.0000 MHz	200KG7D		DIGITAL, PSK, DATA, 128 KSPS, INROUTE
12170.0000 - 12197.0000 MHz	400KG7D		DIGITAL, PSK, DATA, 256 KSPS, INROUTE
12170.0000 - 12197.0000 MHz	800KG7D		DIGITAL, PSK, DATA, 512 KSPS, INROUTE
11953.0000 - 12011.0000 MHz	400KG7D		DIGITAL, PSK, DATA, 256 KSPS, INROUTE

11953.0000 - 12011.0000 MHz	800KG7D	DIGITAL, PSK, DATA, 512 KSPS, INROUTE
11953.0000 - 12011.0000 MHz	1M60G7D	DIGITAL, PSK, DATA, 1024 KSPS, INROUTE
11946.5000 - 12066.5000 MHz	200KG7D	DIGITAL, PSK, DATA, 128 KSPS, INROUTE
11946.5000 - 12066.5000 MHz	400KG7D	DIGITAL, PSK, DATA, 256 KSPS, INROUTE
11946.5000 - 12066.5000 MHz	800KG7D	DIGITAL, PSK, DATA, 512 KSPS, INROUTE
11946.5000 - 12066.5000 MHz	1M60G7D	DIGITAL, PSK, DATA, 1024 KSPS, INROUTE
11822.5000 - 11849.5000 MHz	200KG7D	DIGITAL, PSK, DATA, 128 KSPS, INROUTE
11822.5000 - 11849.5000 MHz	400KG7D	DIGITAL, PSK, DATA, 256 KSPS, INROUTE
11822.5000 - 11849.5000 MHz	800KG7D	DIGITAL, PSK, DATA, 512 KSPS, INROUTE
11822.5000 - 11849.5000 MHz	1M60G7D	DIGITAL, PSK, DATA, 1024 KSPS, INROUTE
11802.0000 - 12018.0000 MHz	1M60G7D	DIGITAL, PSK, DATA, 1024 KSPS, INROUTE
11802.0000 - 12018.0000 MHz	200KG7D	DIGITAL, PSK, DATA, 128 KSPS, INROUTE
11769.0000 - 11823.0000 MHz	200KG7D	DIGITAL, PSK, DATA, 128 KSPS, INROUTE
11769.0000 - 11823.0000 MHz	400KG7D	DIGITAL, PSK, DATA, 256 KSPS, INROUTE
11769.0000 - 11823.0000 MHz	800KG7D	DIGITAL, PSK, DATA, 512 KSPS, INROUTE
11769.0000 - 11823.0000 MHz	1M60G7D	DIGITAL, PSK, DATA, 1024 KSPS, INROUTE

SITE ID: HUB 1 (3.9 M)
LOCATION: (3.9M.HUB1), MONTGOMERY, GERMANTOWN, MD

ANTENNA ID: HUB 1 3.9 meters ANDREW CORPORATION MILSATCOM 3.9 METER

14000.0000 - 14500.0000 MHz	36M0G7D	77.60 dBW	PSK, DATA, 30 MSPS, OUTROUTE CARRIER
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14000.0000 - 14500.0000 MHz	1M60G7D	64.80 dBW	PSK, DATA, 1024 KSPS, OUTROUTE CARRIER
11700.0000 - 12200.0000 MHz	200KG7D		PSK, DATA, 128 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	1M60G7D		PSK, DATA, 1024 KSPS, INROUTE CARRIER

SITE ID: TR 98CM
LOCATION: 400,000 (98CM ANTENNAS), CONUS, AK, HI, VI PR

ANTENNA ID: TR 98CM	0.98 meters	PRODELIN	HNS-AN-098P-KU
14000.0000 - 14500.0000 MHz	200KG7D	44.30 dBW	PSK, DATA, 128 KSPS, INROUTE CARRIER
14000.0000 - 14500.0000 MHz	400KG7D	44.30 dBW	OQPSK, DIGITAL, 256 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	800KG7D	44.30 dBW	OQPSK, DIGITAL, 512 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	1M60G7D	44.30 dBW	OQPSK, DIGITAL, 1024 KSPS, REURN CARRIER
11700.0000 - 12200.0000 MHz	36M0G7D		OQPSK, DATA, 30 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	6M00G7D		DIGITAL PSK, DATA, 5 MSPS, MULTIMEDIA
11700.0000 - 12200.0000 MHz	12M0G7D		DIGITAL PSK, DATA, 10 MSPS, MULTIMEDIA
11700.0000 - 12200.0000 MHz	24M0G7D		DIGITAL PSK, DATA, 20 MSPS, MULTIMEDIA
11700.0000 - 12200.0000 MHz	400KG7D		PSK, DATA, 256 KSPS, OUTROUTE CARRIER

ANTENNA ID: TR 98CM-2	0.98 meters	RAVEN MANUFACTURING LIMITED	HNS-AN-098R-KU
14000.0000 - 14500.0000 MHz	200KG7D	44.30 dBW	DIGITAL PSK, DIGITAL, 128 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	400KG7D	44.30 dBW	DIGITAL PSK, DIGITAL, 256 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	800KG7D	44.30 dBW	DIGITAL PSK, DIGITAL, 512 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	1M60G7D	44.30 dBW	PSK, DATA, 1024 KSPS, INROUTE CARRIER

11700.0000 - 12200.0000 MHz	36M0G7D	PSK, DATA, 30 MSPS, OUTROUTE CARRIER
11700.0000 - 12200.0000 MHz	6M00G7D	OQPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	12M0G7D	OQPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	24M0G7D	OQPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	400KG7D	PSK, DATA, 256 KSPS, OUTROUTE CARRIER

SITE ID: TFTR 1.2M.
LOCATION: 1.2 M. (50,000 UNITS), CONUS, AK, HI, PR VI

ANTENNA ID: TFTR 1.2M 1.2 meters PRODELIN / SKYWARE GLOBAL HNS-AN/19505170-0013

14000.0000 - 14500.0000 MHz	200KG7D	46.10 dBW	PSK, DIGITAL, 128 KSPS, INROUTE CARRIER
14000.0000 - 14500.0000 MHz	400KG7D	46.10 dBW	OQPSK, DIGITAL, 256 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	800KG7W	46.10 dBW	OQPSK, DIGITAL, 512 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	1M60G7D	46.10 dBW	PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	24M0G7D		OQPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	36M0G7D		PSK, DATA, 30 MSPS, OUTROUTE CARRIER
11700.0000 - 12200.0000 MHz	12M0G7D		OQPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	6M00G7D		OQPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	400KG7D		PSK, DATA, 256 KSPS, OUTROUTE CARRIER

SITE ID: TR 74CM
LOCATION: VSAT 0.74M (98 x 56 cm) (350,000 UNITS), CONUS, AK, HI, PR, VI

ANTENNA ID: TR 74CM 0.74 meters PRODELIN HNS-AN-074P-KU

14000.0000 - 14500.0000 MHz	200KG7D	42.00 dBW	PSK, DIGITAL, 128 KSPS, INROUTE CARRIER
14000.0000 - 14500.0000 MHz	400KG7D	42.00 dBW	OQPSK, DIGITAL, 256 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	800KG7D	42.00 dBW	OQPSK, DIGITAL, 512 KSPS, RETURN CARRIER
14000.0000 - 14500.0000 MHz	1M60G7D	42.00 dBW	PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	36M0G7D		PSK, DATA, 30 MSPS, OUTROUTE CARRIER
11700.0000 - 12200.0000 MHz	12M0G7D		OQPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	6M00G7D		OQPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	24M0G7D		OQPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER
11700.0000 - 12200.0000 MHz	400KG7D		PSK, DATA, 256 KSPS, OUTROUTE CARRIER

SITE ID: HUB-C 7.6M

LOCATION: 11717 EXPLORATION LANE (7.6M. HUB), MONTGOMERY, GERMANTOWN, MD

39 ° 10 ' 43.70 " N LAT.

77 ° 14 ' 55.30 " W LONG.

ANTENNA ID: HubC 7.6M 7.6 meters NEC APS-12/14-F64A

14000.0000 - 14500.0000 MHz	400KG7D	59.00 dBW	PSK, DATA, 256 KSPS, OUTROUTE CARRIER
14000.0000 - 14500.0000 MHz	1M60G7D	65.00 dBW	BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER
14000.0000 - 14500.0000 MHz	6M00G7D	70.80 dBW	OQPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER
14000.0000 - 14500.0000 MHz	12M0G7D	73.80 dBW	PSK, DATA, 10 MSPS, OUTROUTE CARRIER
11700.0000 - 12200.0000 MHz	200KG7D		PSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	400KG7D		BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	800KG7D		BPSK OR MSK, DATA, 512 KSPS, INROUTE CARRIER

11700.0000 - 12200.0000 MHz	1M60G7D			PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER
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SITE ID: TR 2.4M.

LOCATION: VSAT 2.4M (11,000 units), CONUS, AK, HI, VI PR

ANTENNA ID:	TR 2.4M.	2.4 meters	PRODELIN CORP.	HNS-AN-240P-KU
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14000.0000 - 14500.0000 MHz	200KG7D	52.20 dBW		PSK, DIGITAL, 128 KSPS, INROUTE CARRIER
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14000.0000 - 14500.0000 MHz	400KG7D	52.20 dBW		OQPSK, DIGITAL, 256 KSPS, RETURN CARRIER
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14000.0000 - 14500.0000 MHz	800KG7D	52.20 dBW		OQPSK, DIGITAL, 512 KSPS, RETURN CARRIER
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14000.0000 - 14500.0000 MHz	1M60G7D	52.20 dBW		PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER
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11700.0000 - 12200.0000 MHz	24M0G7D			OQPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER
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11700.0000 - 12200.0000 MHz	36M0G7D			PSK, DATA, 30 MSPS, OUTROUTE CARRIER
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11700.0000 - 12200.0000 MHz	6M00G7D			OQPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER
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11700.0000 - 12200.0000 MHz	12M0G7D			OQPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER
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11700.0000 - 12200.0000 MHz	400KG7D			PSK, DATA, 256 KSPS, OUTROUTE CARRIER
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SITE ID: HUB-D 7.6M

LOCATION: 11717 EXPLORATION LANE (7.6M. HUB), MONTGOMERY, GERMANTOWN, MD

39 ° 10 ' 43.60 " N LAT.

77 ° 14 ' 53.30 " W LONG.

ANTENNA ID:	HubD 7.6M	7.6 meters	NEC	APS-12/14-F0764A
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14000.0000 - 14500.0000 MHz	400KG7D	59.00 dBW		PSK, DATA, 256 KSPS, OUTROUTE CARRIER
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14000.0000 - 14500.0000 MHz	1M60G7D	65.00 dBW		BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER
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14000.0000 - 14500.0000 MHz	6M00G7D	70.80 dBW		OQPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER
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14000.0000 - 14500.0000 MHz	12M0G7D	73.80 dBW		PSK, DATA, 1024 KSPS, OUTROUTE CARRIER
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11700.0000 - 12200.0000 MHz	200KG7D	PSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	400KG7D	BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	800KG7D	BPSK OR MSK, DATA, 512 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	1M60G7D	PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER

SITE ID: HUB-E 6.1M
LOCATION: 11717 EXPLORATION LANE (6.1M. HUB), MONTGOMERY, GERMANTOWN, MD
39 ° 10 ' 46.00 " N LAT. 77 ° 14 ' 48.20 " W LONG.

ANTENNA ID:	HubE 6.1M	6.1 meters	VERTEX	6.1KPK
14000.0000 - 14500.0000 MHz	400KG7D	52.90 dBW	PSK, DATA, 256 KSPS, OUTROUTE CARRIER	
14000.0000 - 14500.0000 MHz	1M60G7D	58.90 dBW	BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER	
14000.0000 - 14500.0000 MHz	6M00G7D	67.70 dBW	OQPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER	
14000.0000 - 14500.0000 MHz	12M0G7D	70.70 dBW	OQPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER	
14000.0000 - 14500.0000 MHz	24M0G7D	79.70 dBW	PSK, DATA, 20 MSPS, OUTROUTE CARRIER	
14000.0000 - 14500.0000 MHz	36M0G7D	97.70 dBW	PSK, DATA, 30 MSPS, OUTROUTE CARRIER	
11700.0000 - 12200.0000 MHz	200KG7D	PSK, DATA, 128 KSPS, INROUTE CARRIER		
11700.0000 - 12200.0000 MHz	400KG7D	OQPSK, DATA, 256 KSPS, RETURN CARRIER		
11700.0000 - 12200.0000 MHz	200KG7D	PSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER		
11700.0000 - 12200.0000 MHz	400KG7D	BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER		
11700.0000 - 12200.0000 MHz	800KG7D	BPSK OR MSK, DATA, 512 KSPS, INROUTE CARRIER		
11700.0000 - 12200.0000 MHz	1M60G7D	PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER		

SITE ID: HUB-F 5.6M
 LOCATION: 11717 EXPLORATION LANE (5.6M. HUB), MONTGOMERY, GERMANTOWN, MD
 39 ° 10 ' 46.80 " N LAT. 77 ° 14 ' 47.50 " W LONG.

ANTENNA ID:	HubF 5.6M	5.6 meters	ANDREW	ES56-1
	14000.0000 - 14500.0000 MHz	400KG7D	52.90 dBW	PSK, DATA, 256 KSPS, OUTROUTE CARRIER
	14000.0000 - 14500.0000 MHz	1M60G7D	58.90 dBW	BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER
	14000.0000 - 14500.0000 MHz	6M00G7D	67.70 dBW	OQPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER
	14000.0000 - 14500.0000 MHz	12M0G7D	70.70 dBW	OQPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER
	14000.0000 - 14500.0000 MHz	24M0G7D	77.70 dBW	PSK, DATA, 20 MSPS, OUTROUTE CARRIER
	14000.0000 - 14500.0000 MHz	36M0G7D	77.70 dBW	PSK, DATA, 30 MSPS, OUTROUTE CARRIER
	11700.0000 - 12200.0000 MHz	200KG7D		PSK, DATA, 128 KSPS, INROUTE CARRIER
	11700.0000 - 12200.0000 MHz	400KG7D		OQPSK, DATA, 256 KSPS, RETURN CARRIER
	11700.0000 - 12200.0000 MHz	200KG7D		BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER
	11700.0000 - 12200.0000 MHz	400KG7D		BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER
	11700.0000 - 12200.0000 MHz	800KG7D		BPSK OR MSK, DATA, 522 KSPS, INROUTE CARRIER
	11700.0000 - 12200.0000 MHz	1M60G7D		PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER

SITE ID: HUB-G 4.6M
 LOCATION: 10450 PACIFIC CENTER COURT (4.6M. HUB), SAN DIEGO, SAN DIEGO, CA
 32 ° 54 ' 28.40 " N LAT. 117 ° 11 ' 26.60 " W LONG.

ANTENNA ID:	HubG 4.6M	4.6 meters	VERTEX	4.57KPK
	14000.0000 - 14500.0000 MHz	400KG7D	57.50 dBW	PSK, DATA, 256 KSPS, OUTROUTE CARRIER
	14000.0000 - 14500.0000 MHz	1M60G7D	57.50 dBW	PSK, DATA, 1024 KSPS, OUTROUTE CARRIER

11700.0000 - 12200.0000 MHz	200KG7D	PSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	400KG7D	BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	800KG7D	BPSK OR MSK, DATA, 512 KSPS, INROUTE CARRIER
11700.0000 - 12200.0000 MHz	1M60G7D	PSK, DIGITAL, 1024 KSPS, INROUTE CARRIER

Points of Communication:

- HUB 1 (3.9 M) - PERMITTED LIST - ()
- HUB H (11.1M) - GALAXY 25 (S2154) - (93.1 W.L.)
- HUB-A - E117 WA (S2873) - (116.8 W.L.)
- HUB-A - GALAXY 10R - (123 W.L.)
- HUB-A - GALAXY 28 (S2160) - (89.0 W.L.)
- HUB-A - HORIZONS 1 (S2475) - (127 WL)
- HUB-A - PERMITTED LIST - ()
- HUB-B - E117 WA (S2873) - (116.8 W.L.)
- HUB-B - GALAXY 10R - (123 W.L.)
- HUB-B - GALAXY 28 (S2160) - (89.0 W.L.)
- HUB-B - HORIZONS 1 (S2475) - (127 WL)
- HUB-B - PERMITTED LIST - ()
- HUB-C 7.6M - E117 WA (S2873) - (116.8 W.L.)
- HUB-C 7.6M - GALAXY 10R - (123 W.L.)
- HUB-C 7.6M - GALAXY 28 (S2160) - (89.0 W.L.)
- HUB-C 7.6M - HORIZONS 1 (S2475) - (127 WL)
- HUB-C 7.6M - PERMITTED LIST - ()
- HUB-D 7.6M - E117 WA (S2873) - (116.8 W.L.)
- HUB-D 7.6M - GALAXY 10R - (123 W.L.)
- HUB-D 7.6M - GALAXY 28 (S2160) - (89.0 W.L.)
- HUB-D 7.6M - HORIZONS 1 (S2475) - (127 WL)
- HUB-D 7.6M - PERMITTED LIST - ()

HUB-E 6.1M - E117 WA (S2873) - (116.8 W.L.)

HUB-E 6.1M - GALAXY 10R - (123 W.L.)

HUB-E 6.1M - GALAXY 28 (S2160) - (89.0 W.L.)

HUB-E 6.1M - HORIZONS 1 (S2475) - (127 WL)

HUB-E 6.1M - PERMITTED LIST - ()

HUB-F 5.6M - E117 WA (S2873) - (116.8 W.L.)

HUB-F 5.6M - GALAXY 10R - (123 W.L.)

HUB-F 5.6M - GALAXY 28 (S2160) - (89.0 W.L.)

HUB-F 5.6M - HORIZONS 1 (S2475) - (127 WL)

HUB-F 5.6M - PERMITTED LIST - ()

HUB-G 4.6M - E117 WA (S2873) - (116.8 W.L.)

HUB-G 4.6M - PERMITTED LIST - ()

MESH 1.2M. - PERMITTED LIST - ()

MESH 1.8M. - PERMITTED LIST - ()

MESH 2.4M. - PERMITTED LIST - ()

MESH 3.5M. - PERMITTED LIST - ()

TFTR 1.2M. - E117 WA (S2873) - (116.8 W.L.)

TFTR 1.2M. - PERMITTED LIST - ()

TFTR 74-2CM - AMC-3 - (72 W.L.)

TFTR 74-2CM - AMC-4 (S2135) - (134.9 W.L.)

TFTR 74-2CM - AMC-6 (S2347) - (83 W.L.)

TFTR 74-2CM - AMC-9 - (85 W.L.)

TFTR 74-2CM - E117 WA (S2873) - (116.8 W.L.)

TFTR 74-2CM - Eutelsat113WA(S2695) - (113 W.L.)

TFTR 74-2CM - GALAXY 10R - (123 W.L.)

TFTR 74-2CM - GALAXY 16 (S2687) - (99 W.L.)

TFTR 74-2CM - GALAXY 17 (S2715) - (91 W.L.)

TFTR 74-2CM - GALAXY 17 (S2715) - (91 W.L.)

TFTR 74-2CM - GALAXY 18 (S2733) - (123 W.L.)

TFTR 74-2CM - GALAXY 19 (S2647) - (97 W.L.)

TFTR 74-2CM - GALAXY 25 (S2154) - (93.1 W.L.)

TFTR 74-2CM - GALAXY 28 (S2160) - (89.0 W.L.)

TFTR 74-2CM - GALAXY 3C (S2381) - (95.05 W.L.)

TFTR 74-2CM - HORIZONS 1 (S2475) - (127 WL)

TFTR 74CM - AMC-3 - (72 W.L.)

TFTR 74CM - AMC-4 (S2135) - (134.9 W.L.)

TFTR 74CM - AMC-6 (S2347) - (83 W.L.)

TFTR 74CM - AMC-9 - (85 W.L.)

TFTR 74CM - E117 WA (S2873) - (116.8 W.L.)

TFTR 74CM - Eutelsat113WA(S2695) - (113 W.L.)

TFTR 74CM - GALAXY 10R - (123 W.L.)

TFTR 74CM - GALAXY 16 (S2687) - (99 W.L.)

TFTR 74CM - GALAXY 17 (S2715) - (91 W.L.)

TFTR 74CM - GALAXY 17 (S2715) - (91 W.L.)

TFTR 74CM - GALAXY 18 (S2733) - (123 W.L.)

TFTR 74CM - GALAXY 19 (S2647) - (97 W.L.)

TFTR 74CM - GALAXY 19 (S2647) - (97 W.L.)

TFTR 74CM - GALAXY 25 (S2154) - (93.1 W.L.)

TFTR 74CM - GALAXY 28 (S2160) - (89.0 W.L.)

TFTR 74CM - GALAXY 3C (S2381) - (95.05 W.L.)

TFTR 74CM - HORIZONS 1 (S2475) - (127 WL)

TFTR 98CM - AMC-3 - (72 W.L.)

TFTR 98CM - AMC-4 (S2135) - (134.9 W.L.)

TFTR 98CM - AMC-6 (S2347) - (83 W.L.)

TFTR 98CM - AMC-9 - (85 W.L.)

TFTR 98CM - E117 WA (S2873) - (116.8 W.L.)

TFTR 98CM - Eutelsat113WA(S2695) - (113 W.L.)

TFTR 98CM - GALAXY 10R - (123 W.L.)

TFTR 98CM - GALAXY 17 (S2715) - (91 W.L.)

TFTR 98CM - GALAXY 17 (S2715) - (91 W.L.)

TFTR 98CM - GALAXY 18 (S2733) - (123 W.L.)

TFTR 98CM - GALAXY 19 (S2647) - (97 W.L.)

TFTR 98CM - GALAXY 19 (S2647) - (97 W.L.)

TFTR 98CM - GALAXY 25 (S2154) - (93.1 W.L.)

TFTR 98CM - GALAXY 28 (S2160) - (89.0 W.L.)

TFTR 98CM - GALAXY 3C (S2381) - (95.05 W.L.)

TFTR 98CM - HORIZONS 1 (S2475) - (127 WL)

TR 1.0M. - E117 WA (S2873) - (116.8 W.L.)

TR 1.0M. - PERMITTED LIST - ()

TR 1.2M. - E117 WA (S2873) - (116.8 W.L.)

TR 1.2M. - PERMITTED LIST - ()

TR 1.8M. - E117 WA (S2873) - (116.8 W.L.)

TR 1.8M. - PERMITTED LIST - ()

TR 2.4M. - E117 WA (S2873) - (116.8 W.L.)

TR 2.4M. - PERMITTED LIST - ()

TR 74-2 CM - AMC-3 - (72 W.L.)

TR 74-2 CM - AMC-4 (S2135) - (134.9 W.L.)

TR 74-2 CM - AMC-6 (S2347) - (83 W.L.)

TR 74-2 CM - AMC-9 - (85 W.L.)

TR 74-2 CM - E117 WA (S2873) - (116.8 W.L.)

TR 74-2 CM - Eutelsat113WA(S2695) - (113 W.L.)

TR 74-2 CM - GALAXY 10R - (123 W.L.)

TR 74-2 CM - GALAXY 16 (S2687) - (99 W.L.)

TR 74-2 CM - GALAXY 17 (S2715) - (91 W.L.)

TR 74-2 CM - GALAXY 17 (S2715) - (91 W.L.)

TR 74-2 CM - GALAXY 18 (S2733) - (123 W.L.)

TR 74-2 CM - GALAXY 19 (S2647) - (97 W.L.)

TR 74-2 CM - GALAXY 19 (S2647) - (97 W.L.)

TR 74-2 CM - GALAXY 25 (S2154) - (93.1 W.L.)

TR 74-2 CM - GALAXY 25 (S2154) - (93.1 W.L.)

TR 74-2 CM - GALAXY 28 (S2160) - (89.0 W.L.)

TR 74-2 CM - GALAXY 3C (S2381) - (95.05 W.L.)

TR 74-2 CM - HORIZONS 1 (S2475) - (127 WL)

TR 74CM - AMC-3 - (72 W.L.)

TR 74CM - AMC-4 (S2135) - (134.9 W.L.)

TR 74CM - AMC-6 (S2347) - (83 W.L.)

TR 74CM - AMC-9 - (85 W.L.)

TR 74CM - E117 WA (S2873) - (116.8 W.L.)

TR 74CM - Eutelsat113WA(S2695) - (113 W.L.)

TR 74CM - GALAXY 10R - (123 W.L.)

TR 74CM - GALAXY 16 (S2687) - (99 W.L.)

TR 74CM - GALAXY 16 (S2687) - (99 W.L.)

TR 74CM - GALAXY 17 (S2715) - (91 W.L.)

TR 74CM - GALAXY 17 (S2715) - (91 W.L.)

TR 74CM - GALAXY 18 (S2733) - (123 W.L.)

TR 74CM - GALAXY 19 (S2647) - (97 W.L.)

TR 74CM - GALAXY 19 (S2647) - (97 W.L.)

TR 74CM - GALAXY 25 (S2154) - (93.1 W.L.)

TR 74CM - GALAXY 25 (S2154) - (93.1 W.L.)

TR 74CM - GALAXY 28 (S2160) - (89.0 W.L.)

TR 74CM - GALAXY 3C (S2381) - (95.05 W.L.)

TR 74CM - HORIZONS 1 (S2475) - (127 WL)

TR 98CM - AMC-3 - (72 W.L.)

TR 98CM - AMC-4 (S2135) - (134.9 W.L.)

TR 98CM - AMC-6 (S2347) - (83 W.L.)

TR 98CM - E117 WA (S2873) - (116.8 W.L.)

TR 98CM - Eutelsat113WA(S2695) - (113 W.L.)

TR 98CM - GALAXY 10R - (123 W.L.)

TR 98CM - GALAXY 16 (S2687) - (99 W.L.)

TR 98CM - GALAXY 17 (S2715) - (91 W.L.)

TR 98CM - GALAXY 17 (S2715) - (91 W.L.)
 TR 98CM - GALAXY 18 (S2733) - (123 W.L.)
 TR 98CM - GALAXY 19 (S2647) - (97 W.L.)
 TR 98CM - GALAXY 19 (S2647) - (97 W.L.)
 TR 98CM - GALAXY 25 (S2154) - (93.1 W.L.)
 TR 98CM - GALAXY 28 (S2160) - (89.0 W.L.)
 TR 98CM - GALAXY 3C (S2381) - (95.05 W.L.)
 TR 98CM - HORIZONS 1 (S2475) - (127 WL)

SES-MOD-20180601-01074 E E000460 Fox Broadcasting Company
 Application for Modification 07/28/2010 - 07/28/2025
 Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
 LOCATION: ONE WCOV AVENUE, MONTGOMERY, MONTGOMERY, AL
 32 ° 20 ' 1.00 " N LAT. 86 ° 17 ' 16.90 " W LONG.

ANTENNA ID:	4.5M.	5 meters	ANDREW CORPORATION	ESA45-46A
	3700.0000 - 4200.0000 MHz		36M0G7F	DIGITAL TRAFFIC, VARIOUS FEC, MODULATIONS AND DATA RATES
	3700.0000 - 4200.0000 MHz		36M0F8F	VIDEO CARRIER

Points of Communication:

1 - PERMITTED LIST - ()

SES-MOD-20180604-01152 E E050212 WLOX License Subsidiary, LLC
 Application for Modification 07/13/2005 - 07/13/2020
 Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
 LOCATION: 208 DEBUYS ROAD (WLOX), HARRISON, BILOXI, MS
 30 ° 23 ' 37.10 " N LAT. 89 ° 0 ' 2.70 " W LONG.

ANTENNA ID:	4.5M.	4.5 meters	ANDREW	ESA45
	3700.0000 - 4200.0000 MHz		36M0G7W	DIGITAL VIDEO CARRIER

Points of Communication:

1 - PERMITTED LIST - ()

SES-MOD-20180604-01163	E	E950490	CBS Communications Services Inc.	09/08/2005 - 09/08/2020
Application for Modification				Date Effective: 08/06/2018
Grant of Authority				

Class of Station: Fixed Earth Stations**Nature of Service:** Fixed Satellite Service

SITE ID: 1

LOCATION: 15555 HAMILTON ST., PHILADELPHIA, PHILADELPHIA, PA
39 ° 57 ' 44.40 " N LAT. 75 ° 9 ' 51.50 " W LONG.

ANTENNA ID: 1	4.5 meters	ANDREW	ES45MPJ
3700.0000 - 4200.0000 MHz		36M0G7W	DIGITAL AUDIO, VIDEO, DATA
ANTENNA ID: 2	3.7 meters	DH SATELLITE	DHA2290
3700.0000 - 4200.0000 MHz		36M0G7W	DIGITAL AUDIO, VIDEO, DATA

Points of Communication:

1 - PERMITTED LIST - ()

SES-MOD-20180604-01255	E	E100185	Fox Broadcasting Company	12/17/2010 - 12/17/2025
Application for Modification				Date Effective: 08/06/2018
Grant of Authority				

Class of Station: Fixed Earth Stations**Nature of Service:** Fixed Satellite Service

SITE ID: 1

LOCATION: 3117 PLAZA DRIVE N.E., KENT, GRAND RAPIDS, MI
43 ° 1 ' 5.20 " N LAT. 85 ° 37 ' 54.90 " W LONG.

ANTENNA ID: 4.5M.	4.5 meters	ANDREW CORPORATION	ESA45-46A
3700.0000 - 4200.0000 MHz		36M0G7F	DIGITAL TRAFFIC, VARIOUS FEC, MODULATIONS AND DATA RATES
3700.0000 - 4200.0000 MHz		36M0F8F	VIDEO CARRIER

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180515-00797 E E180401 REISING RADIO PARTNERS, INC.
Registration 05/15/2018 - 05/15/2033
Grant of Authority Date Effective: 08/03/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 825 Washington St, Bartholomew, Columbus, IN
39 ° 12 ' 26.54 " N LAT. 85 ° 55 ' 14.55 " W LONG.

ANTENNA ID: 1 3.7 meters DH Satellite 37DH4
3700.0000 - 4200.0000 MHz 40M0G7W Digital Audio

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180602-01177 E E180668 WTOC License Subsidiary, LLC
Registration 06/02/2018 - 06/02/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 137 Uncle Sheds Road, Chatham, Savannah, GA
32 ° 3 ' 14.60 " N LAT. 81 ° 21 ' 0.80 " W LONG.

ANTENNA ID: 6.1M. 6.1 meters Scientific-Atlanta 6.1 meter
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180604-01136 E E180637 Cable One, Inc.
Registration 06/04/2018 - 06/04/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 235 D 6th Street, Yavapi, Cottonwood, AZ
34 ° 44 ' 8.00 " N LAT. 112 ° 1 ' 20.20 " W LONG.

ANTENNA ID: 3.8 meter 3.8 meters Patriot 3.8

3700.0000 - 4200.0000 MHz

36M0G7W

Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180604-01147 E E180648 Oak Run Associates Ltd/ DECCA Cable

Registration

06/04/2018 - 06/04/2033

Grant of Authority

Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1

LOCATION: 8968 SW 100th St (DECCA Cable), MARION, Ocala, FL

29 ° 4 ' 37.22 " N LAT.

82 ° 16 ' 5.90 " W LONG.

ANTENNA ID:	Ant1	5 meters	DH Satellite	50DH1	
	3700.0000 - 4200.0000 MHz		36M0F8F	0.00 dBW	Modulation and Services Digital Video
	3700.0000 - 4200.0000 MHz		30M0G7W	0.00 dBW	Modulation and services Analog Video with associated subcarriers
ANTENNA ID:	Ant2	4.5 meters	DH Satellite	45DH1	
	3700.0000 - 4200.0000 MHz		30M0G7W	0.00 dBW	Modulation and Services Digital Video
	3700.0000 - 4200.0000 MHz		36M0F8F	0.00 dBW	Modulation and services Analog Video with associated subcarriers
ANTENNA ID:	Ant 3	4.5 meters	SSE	8345	
	3700.0000 - 4200.0000 MHz		30M0G7W	0.00 dBW	Modulation and Services Digital Video
	3700.0000 - 4200.0000 MHz		36M0F8F	0.00 dBW	Modulation and services Analog Video with associated subcarriers
ANTENNA ID:	Ant4	3.1 meters	Patriot	3.1M	
	3700.0000 - 4200.0000 MHz		30M0G7W	0.00 dBW	Modulation and Services Digital Video
	3700.0000 - 4200.0000 MHz		36M0F8F	0.00 dBW	Modulation and services Analog Video with associated subcarriers
ANTENNA ID:	Ant5	3.8 meters	ComTech	829066-G2RC	
	3700.0000 - 4200.0000 MHz		30M0G7W	0.00 dBW	Modulation and Services Digital Video
	3700.0000 - 4200.0000 MHz		36M0F8F	0.00 dBW	Modulation and services Analog Video with associated subcarriers

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180604-01164 E E180658 CBS Communications Services Inc.
Registration 06/04/2018 - 06/04/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 413 Wigard St., Philadelphia, Philadelphia, PA
40 ° 2 ' 39.90 " N LAT. 75 ° 14 ' 25.80 " W LONG.

ANTENNA ID: 1 4.6 meters Andrew ES46P
3700.0000 - 4200.0000 MHz 36M0G7W 0.00 dBW Digital Audio, Video, Data

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180604-01165 E E180659 CBS Communications Services Inc.
Registration 06/04/2018 - 06/04/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: Commonwealth Dr., Burlington, Medford Township, NJ
39 ° 50 ' 19.80 " N LAT. 74 ° 49 ' 19.20 " W LONG.

ANTENNA ID: 1 10 meters Scientific Atlanta 8002A HP
3700.0000 - 4200.0000 MHz 36M0G7W 0.00 dBW Digital Audio, Video, Data

ANTENNA ID: 2 7 meters Scientific Atlanta 8010A
3700.0000 - 4200.0000 MHz 36M0G7W 0.00 dBW Digital Audio, Video, Data

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180604-01166 E E180660 Cable One, Inc.
Registration 06/04/2018 - 06/04/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 2030 Brasher Road, Harrison, Biloxi, MS
30 ° 25 ' 56.30 " N LAT. 88 ° 57 ' 23.40 " W LONG.

ANTENNA ID: 5 meter 5 meters ANTENNA TECH CORP SIMULSAT 5M
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180604-01167 E E180661 Cable One, Inc.
Registration 06/04/2018 - 06/04/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 1001 Oakhurst Drive, Coahoma, Clarksdale, MS
34 ° 12 ' 38.10 " N LAT. 90 ° 35 ' 53.60 " W LONG.

ANTENNA ID: 5 meter 5 meters ANTENNA TECH CORP SIMULSAT 5M
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180604-01168 E E180662 Columbus Broadcasting Corporation
Registration 06/04/2018 - 06/04/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 7425 Pingue Drive (WCBZ Transmitter), Franklin, Worthington, OH
40 ° 6 ' 53.80 " N LAT. 82 ° 58 ' 54.50 " W LONG.

ANTENNA ID: Receive1 3 meters Prodelin 3 Meter
3700.0000 - 4200.0000 MHz 36M0G7W 0.00 dBW Digital

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180604-01169 E E180663 Time Warner Cable Midwest LLC
 Registration 06/04/2018 - 06/04/2033
 Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
 LOCATION: Longview Hts Rd, Athens, Athens, OH
 39 ° 18 ' 53.40 " N LAT. 82 ° 4 ' 54.40 " W LONG.

ANTENNA ID:	1	5 meters	Antenna Technology Corp.	Simulsat 5M
			36M0G7W	DIGITAL
		3700.0000 - 4200.0000 MHz		
ANTENNA ID:	2	5 meters	Scientific-Atlanta	8008B
			36M0G7W	DIGITAL
		3700.0000 - 4200.0000 MHz		
ANTENNA ID:	3	4.6 meters	Andrew	ESA46
			36M0G7W	DIGITAL
		3700.0000 - 4200.0000 MHz		
ANTENNA ID:	4	4.6 meters	Scientific-Atlanta	8346
			36M0G7W	DIGITAL
		3700.0000 - 4200.0000 MHz		
ANTENNA ID:	5	4.5 meters	Andrew	ESA45
			36M0G7W	DIGITAL
		3700.0000 - 4200.0000 MHz		
ANTENNA ID:	6	4.5 meters	DH Satellite	4.5M
			36M0G7W	DIGITAL
		3700.0000 - 4200.0000 MHz		
ANTENNA ID:	7	4.5 meters	Scientific-Atlanta	8345
			36M0G7W	DIGITAL
		3700.0000 - 4200.0000 MHz		
ANTENNA ID:	8	3.8 meters	Comtech	934D0015-G5
			36M0G7W	DIGITAL
		3700.0000 - 4200.0000 MHz		
ANTENNA ID:	9	3.7 meters	Prodelin	1374
			36M0G7W	DIGITAL
		3700.0000 - 4200.0000 MHz		
ANTENNA ID:	10	1.8 meters	Patriot	TX-INT180KU
			36M0G7W	DIGITAL
		3700.0000 - 4200.0000 MHz		

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180604-01173 E E180666 Lakeshore Communications, Inc.
Registration 06/04/2018 - 06/04/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 1253 Scheuring Road, Suite B (WORQ Studio), Brown, De Pere, WI
44 ° 25 ' 46.76 " N LAT. 88 ° 5 ' 35.64 " W LONG.

ANTENNA ID: WORQ Studi	3.7 meters	DH Satellite	37DH1
3700.0000 - 4200.0000 MHz		30M0G7W	Digital Video
3700.0000 - 4200.0000 MHz		36M0F8F	Analog Video with associated subcarriers

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180605-01157 E E180652 APPLIED COMMUNICATIONS TECHNOLOGY, INC
Registration 06/04/2018 - 06/04/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 72366 Hwy 283, Furnas, Arapahoe, NE
40 ° 18 ' 56.00 " N LAT. 99 ° 53 ' 43.00 " W LONG.

ANTENNA ID: 5M.	5 meters	Microdyne	PR 16.4
3700.0000 - 4200.0000 MHz		36M0G7W	Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180605-01184 E E180672 Cable One, Inc.
Registration 06/05/2018 - 06/05/2033
Granted in Part / Dismissed in Part Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 615 Liberty Rd, Adam, Natchez, MS
31 ° 32 ' 6.00 " N LAT. 91 ° 20 ' 6.00 " W LONG.

ANTENNA ID: 4.5M. 4.5 meters Scientific-Atlantic 4.5 meter
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180605-01188 E E180674 Stonecom Cookeville, LLC
Registration 06/05/2018 - 06/05/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 259 S. Willow Avenue, Putnam, Cookeville, TN
36 ° 9 ' 35.50 " N LAT. 85 ° 30 ' 50.30 " W LONG.

ANTENNA ID: 1 3.8 meters Comtech Antenna Systems 3.8 Meter PF
3700.0000 - 4200.0000 MHz 36M0G7W 0.00 dBW Digital Broadcast Audio Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180605-01190 E E180675 Time Warner Cable Midwest LLC
Registration 06/05/2018 - 06/05/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 1105 W Market St, Hardeman, Bolivar, TN
35 ° 15 ' 25.10 " N LAT. 89 ° 0 ' 14.30 " W LONG.

ANTENNA ID: 1 5 meters Antenna Technology Corp. Simulsat 5M
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video, Audio, Data

ANTENNA ID: 2 5 meters Scientific-Atlanta 8008B
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video, Audio, Data

ANTENNA ID: 3 4.6 meters Andrew ESA46

3700.0000 - 4200.0000 MHz	36M0G7W	Digital Video, Audio, Data
ANTENNA ID: 4	4.6 meters Scientific-Atlanta	8346
3700.0000 - 4200.0000 MHz	36M0G7W	Digital Video, Audio, Data
ANTENNA ID: 5	4.5 meters Andrew	ESA45
3700.0000 - 4200.0000 MHz	36M0G7W	Digital Video, Audio, Data
ANTENNA ID: 6	4.5 meters DH Satellite	4.5M
3700.0000 - 4200.0000 MHz	36M0G7W	Digital Video, Audio, Data
ANTENNA ID: 7	4.5 meters Scientific-Atlanta	8345
3700.0000 - 4200.0000 MHz	36M0G7W	Digital Video, Audio, Data
ANTENNA ID: 8	3.8 meters Comtech	934D0015-G5
3700.0000 - 4200.0000 MHz	36M0G7W	Digital Video, Audio, Data
ANTENNA ID: 9	3.7 meters Prodelin	1374
3700.0000 - 4200.0000 MHz	36M0G7W	Digital Video, Audio, Data
ANTENNA ID: 10	1.8 meters Patriot	TX-INT180KU
3700.0000 - 4200.0000 MHz	36M0G7W	Digital Video, Audio, Data

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180605-01192	E E180676	Cable One, Inc.	
Registration			06/05/2018 - 06/05/2033
Grant of Authority			Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 3052 N. 5th St, Stephens, Duncan, OK
34 ° 32 ' 31.90 " N LAT. 97 ° 20 ' 44.30 " W LONG.

ANTENNA ID: 5 meter	5 meters	Scientific-Atlantic	5 meter
3700.0000 - 4200.0000 MHz	36M0G7W	Digital Video Carrier	

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180605-01193 E E180677 Cable One, Inc.
Registration 06/05/2018 - 06/05/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 900 Steuben St, Woodbury, Sioux City, IA
42 ° 29 ' 57.90 " N LAT. 96 ° 23 ' 17.90 " W LONG.

ANTENNA ID: 5M. 5 meters ANTENNA TECH CORP SIMULSAT 5M
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180605-01194 E E180678 Cable One, Inc.
Registration 06/05/2018 - 06/05/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 110 Pinta Dr., Calhoun, Port Lacava, TX
28 ° 35 ' 49.80 " N LAT. 96 ° 37 ' 7.80 " W LONG.

ANTENNA ID: 5M. 5 meters Patriot 5 meter
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180605-01221 E E180684 Cable One, Inc.
Registration 06/05/2018 - 06/05/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 4701 E. 52nd Street, Ector, Odessa, TX
31 ° 54 ' 12.70 " N LAT. 102 ° 20 ' 20.10 " W LONG.

ANTENNA ID: 5M. 5 meters Scientific-Atlantic 5 meter
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180605-01223 E E180686 Cable One, Inc.
Registration 06/05/2018 - 06/05/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 100 N. Victory Road, Madison, Norfolk, NE
42 ° 2 ' 1.10 " N LAT. 97 ° 23 ' 12.20 " W LONG.

ANTENNA ID: 5 meter 5 meters Comtech 5 meter
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180605-01225 E E180688 Skyline Tower LLC
Registration 06/05/2018 - 06/05/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 299 NW Skyline Blvd (Adjacent to Skyline), Multomah, Portland, OR
45 ° 31 ' 20.10 " N LAT. 122 ° 44 ' 46.30 " W LONG.

ANTENNA ID: DR 4.5 meters DH Satellite 4.5 Meter
3700.0000 - 4200.0000 MHz 36M0G7W 0.00 dBW Digital Broadcast

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180605-01227 E E180690 Mielke Broadcasting Group
Registration 06/05/2018 - 06/05/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 1142 Willagillespie Rd., #28 (KKNX/KEED Studios), Lane, Eugene, OR
44 ° 4 ' 19.50 " N LAT. 123 ° 6 ' 6.00 " W LONG.

ANTENNA ID: DISH-1 3.7 meters Prodelin 1374
3700.0000 - 4200.0000 MHz 36M0G7W QPSK modulation, digital audio and video data

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180606-01183 E E180671 Fox Broadcasting Company
Registration 06/06/2018 - 06/06/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 9 Red Donley Plaza, Jefferson, Steubenville, OH
40 ° 20 ' 32.70 " N LAT. 80 ° 37 ' 9.60 " W LONG.

ANTENNA ID: 4.5M. 4.5 meters Andrew Corporation ESA45-46A
3700.0000 - 4200.0000 MHz 36M0G7W digital data: various FEC, data rates and modulation

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180606-01280 E E180699 Fox Broadcasting Company
Registration 06/06/2018 - 06/06/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 301 Wythe Street, Portsmouth, Norfolk, VA
36 ° 49 ' 46.30 " N LAT. 76 ° 17 ' 55.70 " W LONG.

ANTENNA ID: 4.5M. 4.5 meters Andrew Corporation ESA45-46A
3700.0000 - 4200.0000 MHz 36M0G7W digital data: various FEC, data rates and modulation

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180606-01281 E E180700 Fox Broadcasting Company
Registration 06/06/2018 - 06/06/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 2619 Western Blvd, Wake, Raleigh, NC
35 ° 46 ' 46.50 " N LAT. 78 ° 40 ' 28.80 " W LONG.

ANTENNA ID: 4.5M. 4.5 meters Andrew Corporation ESA45-46A
3700.0000 - 4200.0000 MHz 36M0G7W digital data: various FEC, data rates and modulation

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180606-01282 E E180701 Fox Broadcasting Company
Registration 06/06/2018 - 06/06/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 1440 Sepulveda, Los Angeles, Culver City, CA
34 ° 3 ' 3.30 " N LAT. 118 ° 26 ' 48.50 " W LONG.

ANTENNA ID: 4.5M. 4.5 meters Andrew Corporation ESA45-46A
3700.0000 - 4200.0000 MHz 36M0G7W digital data: various FEC, data rates and modulation

ANTENNA ID: 3.8-Comt 3.8 meters Comtech 3.8 Meter PF
3700.0000 - 4200.0000 MHz 36M0G7W Digital various FEC, data rates and modulation

ANTENNA ID: 3.8M-Patr 3.8 meters Patriot 3.8M
3700.0000 - 4200.0000 MHz 36M0G7W Digital various FEC, data rates and modulation

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180606-01288 E E180707 Fox Broadcasting Company
Registration 06/06/2018 - 06/06/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 1220 W. WT Harris Boulevard, Meckleburg, Charlotte, NC
35 ° 18 ' 59.30 " N LAT. 80 ° 45 ' 54.80 " W LONG.

ANTENNA ID: 4.5M. 4.5 meters Andrew Corporation ESA45-46A
3700.0000 - 4200.0000 MHz 36M0G7W digital data: various FEC, data rates and modulation

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180607-01296 E E180709 OUR THREE SONS BROADCASTING LLP
Registration 06/07/2018 - 06/07/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: Site 1
LOCATION: 142 N. Confederate Ave, York, Rock Hill, SC
34 ° 55 ' 25.96 " N LAT. 81 ° 1 ' 12.38 " W LONG.

ANTENNA ID: Site1 3.7 meters Prodelin 1375
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video/Audio

Points of Communication:

Site 1 - PERMITTED LIST - ()

SES-REG-20180607-01297 E E180710 Cable One, Inc.
Registration 06/07/2018 - 06/07/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 2208 Lawrence RD, Pontotoc, Ardmore, OK
34 ° 9 ' 54.50 " N LAT. 97 ° 9 ' 31.60 " W LONG.

ANTENNA ID: 3.8 meter 3.8 meters Patriot 3.8 meter

3700.0000 - 4200.0000 MHz

36M0G7W

Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180607-01298 E E180711 Citadel Communications, LLC

Registration

06/07/2018 - 06/07/2033

Grant of Authority

Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1

LOCATION: LAFAYETTE RD, NEWPORT, TIVERTON, RI

41 ° 35 ' 49.00 " N LAT.

71 ° 11 ' 18.80 " W LONG.

ANTENNA ID: 2 4.5 meters PATRIOT 4.5 M

3700.0000 - 4200.0000 MHz 36M0G7W DIGITAL VIDEO AUDIO AND DATA

ANTENNA ID: 1 4.5 meters ANDREW 4.5 M

3700.0000 - 4200.0000 MHz 36M0G7W DIGITAL VIDEO AUDIO AND DATA

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180608-01305 E E180718 Telecommunications Management, LLC d/b/a NewWave Communications

Registration

06/07/2018 - 06/07/2033

Grant of Authority

Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1

LOCATION: 3000 N. Westwood Blvd, Butler, Poplar Bluff, MO

36 ° 47 ' 31.60 " N LAT.

90 ° 26 ' 6.10 " W LONG.

ANTENNA ID: 5 meter 5 meters Antenna Tech Corp Simulsat 5M

3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180611-01451 E E180838 VCY America Inc
Registration 06/11/2018 - 06/11/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: Femrite Drive, Dane, McFarland, WI
43 ° 3 ' 1.00 " N LAT. 89 ° 16 ' 55.00 " W LONG.

ANTENNA ID: 1 3.9 meters Design Home 39
3700.0000 - 4200.0000 MHz 36M0G7W Digital Audio

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180615-01149 E E180650 Comcast Cable Communications Management, LLC
Registration 06/03/2018 - 06/03/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 73 Rock Avenue, Union, Plainfield, NJ
40 ° 35 ' 57.00 " N LAT. 74 ° 27 ' 27.00 " W LONG.

ANTENNA ID: 3.8M. 3.8 meters DM 3.8 meter
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier

ANTENNA ID: 5M. 5 meters DM 5 Meter
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180615-01219 E E180682 Comcast Cable Communications Management, LLC
Registration 06/05/2018 - 06/05/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: Wilson Street, Preston, Rowlesburg, WV
39 ° 20 ' 35.90 " N LAT. 79 ° 40 ' 46.50 " W LONG.

ANTENNA ID: 3.8M. 3.8 meters Patriot 3.8 meter
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier
ANTENNA ID: 3.7M. 3.7 meters Prodelin 3.7 meter
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-REG-20180615-01230 E E180693 Comcast Cable Communications Management, LLC
Registration 06/05/2018 - 06/05/2033
Grant of Authority Date Effective: 08/06/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 2215 N DuPont Hwy, New Castle, Wilmington, DE
39 ° 42 ' 12.00 " N LAT. 75 ° 34 ' 20.00 " W LONG.

ANTENNA ID: 3.8mC 3.8 meters Comtech 3.8 meter
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier
ANTENNA ID: 3.8mP 3.8 meters Patriot 3.8 meter
3700.0000 - 4200.0000 MHz 36M0G7W Digital Video Carrier

Points of Communication:

1 - PERMITTED LIST - ()

SES-RWL-20180703-01779 E KA294 Denali 20020, LLC
Renewal 08/23/2018 - 08/23/2033
Grant of Authority Date Effective: 08/03/2018

Class of Station: Fixed Earth Stations

Nature of Service: Fixed Satellite Service

SITE ID: 1
LOCATION: 1711 OLD HWY. 97, OKANOGAN, BREWSTER, WA
48 ° 8 ' 50.50 " N LAT. 119 ° 41 ' 33.20 " W LONG.

ANTENNA ID: 1 13 meters VERTEX 13KPC

6171.6000 - 6175.8000 MHz	1M00F8W	81.90 dBW	TT&C
5850.0000 - 6425.0000 MHz	2M40G7D	81.90 dBW	Data, 1855kbs, QPSK, FEC1/2
5850.0000 - 6425.0000 MHz	36M0G7F	86.80 dBW	Digital Compressed video
5850.0000 - 6425.0000 MHz	36M0F8W	86.80 dBW	Analog video audio
3951.4200 - 3952.5800 MHz	144KG2D		TT&C
3625.0000 - 4200.0000 MHz	2M40G7D		Data, 1855kbs, QPSK, FEC1/2
3625.0000 - 4200.0000 MHz	36M0G7F		Digital Compressed video
3625.0000 - 4200.0000 MHz	36M0F8W		Analog video audio

Points of Communication:

- 1 - EUTELSAT 172A(S2610) - (174 E. L.)
- 1 - INTELSAT 23 - (53 W. L.)
- 1 - INTELSAT 805 (S2404) - (304.5 E.L.)
- 1 - INTELSAT POR - (180.0 E.L.)
- 1 - NSS 9 (S2756) - (177 W.L.)
- 1 - PERMITTED LIST - ()

SES-RWL-20180803-02063 E E030142 Time Warner Cable Northeast LLC
 Renewal 08/06/2018 - 08/06/2033
 Grant of Authority Date Effective: 08/07/2018

Class of Station: Temporary Fixed Earth Station

Nature of Service: Domestic Fixed Satellite Service

SITE ID: 1
 LOCATION: 815 ERIE BOULEVARD EAST, VARIOUS

ANTENNA ID: 1	1.2 meters	AVL TECHNOLOGIES	1200
14000.0000 - 14500.0000 MHz	36M0G7W	63.50 dBW	MCPC DIGITAL CARRIER FOR VIDEO/AUDIO/DATA

Points of Communication:

- 1 - PERMITTED LIST - ()

SES-STA-20180612-01072 E E050287 UNITED TELEPORTS INC.
 Special Temporary Authority
 Grant of Authority Date Effective: 08/03/2018

Class of Station:

On August 3, 2018, United Teleports Inc. was granted special temporary authority for 180 days to operate its fixed earth station in Saint Lucie, FL to provide telemetry, tracking and command (TT&C) service for the ASTRA 1D satellite as it drifts from the 47.3° W.L. orbital location to the 72.5° W.L. orbital location, and during temporary operations at 72.5 W.L. on the following center frequencies: 14013.00 MHz and 14493.00 MHz (Earth-to-space), and 11447.50 MHz and 11454.00 MHz (space-to-Earth).

Points of Communication:

SES–STA–20180613–01106 E E060384 Intelsat License LLC

Special Temporary Authority

Grant of Authority

Date Effective: 08/06/2018

Class of Station:

On August 6, 2018, Intelsat License LLC was granted special temporary authority for 180 days, beginning August 6 2018, to operate its fixed earth station in Riverside, CA to provide telemetry, tracking and command (TT&C) services to the Intelsat 16 (S2750) satellite at the 76.2 W.L. orbital location on the following center frequencies: 13.9975 GHz and 14.4995 GHz (Earth-to-space), and 12.19825 GHz and 12.19875 GHz (space-to-Earth).

Points of Communication:

SES–STA–20180620–01772 E E180787 GCI Communication Corp.

Special Temporary Authority

Grant of Authority

Date Effective: 07/31/2018

Class of Station:

On July 31, 2018, GCI Communication Corp. was granted special temporary authority for 60 days, beginning August 1, 2018, to operate its fixed earth station in Chevak, AK with the EUTELSAT 115 WB (SATMEX 7) (S2938) satellite at the 114.9° W.L. orbital location in the 3786-3858 MHz (space-to-Earth) and 6011-6883 MHz (Earth-to-space) frequency bands.

Points of Communication:

SES–STA–20180716–01790 E E040125 Intelsat License LLC

Special Temporary Authority

Grant of Authority

Date Effective: 07/31/2018

Class of Station:

On July 31, 2018, Intelsat License LLC was granted special temporary authority for 30 days, beginning August 1, 2018, to operate its fixed earth station in Riverside, CA to provide launch and early orbit phase (LEOP) services for the Telkom-4 satellite at the 108.0° E.L. orbital location in the 5926.0 MHz and 6424.0 MHz (Earth-to-space), 4199.875 MHz and 3701.75 MHz (space-to-Earth) frequency bands.

Points of Communication:

SES–STA–20180716–01791 E E4132 Intelsat License LLC

Special Temporary Authority

Grant of Authority

Date Effective: 07/31/2018

Class of Station:

On July 31, 2018, Intelsat License LLC was granted special temporary authority for 30 days, beginning August 1, 2018, to operate its fixed earth station in Fillmore, GA to provide launch and early orbit phase (LEOP) services for the Telkom-4 satellite at the 108.0° E.L. orbital location in the 5926.0 MHz and 6424.0 MHz (Earth-to-space), and 4199.875 MHz and 3701.75 MHz (space-to-Earth) frequency bands.

Points of Communication:

SES–STA–20180716–01795 E E000296 Intelsat License LLC

Special Temporary Authority

Grant of Authority

Date Effective: 07/31/2018

Class of Station:

On July 31, 2018, Intelsat License LLC was granted special temporary authority for 30 days, beginning August 1, 2018, to operate its fixed earth station in Hagerstown, MD to provide launch and early orbit phase (LEOP) services for the Telkom-4 satellite at the 108.0° E.L. orbital location in the 5926.0 MHz and 6424.0 MHz (Earth-to-space), and 4199.875 MHz and 3701.75 MHz (space-to-Earth) frequency bands.

Points of Communication:

SES–STA–20180720–01932 E KL92 Intelsat License LLC

Special Temporary Authority

Grant of Authority

Date Effective: 07/31/2018

Class of Station:

On July 31, 2018, Intelsat License LLC was granted special temporary authority for 30 days, beginning August 1, 2018, to operate two 12.5-meter fixed earth station antennas, "K01" and "K16," in Castle Rock, CO to conduct telemetry, tracking and command (TT&C) services for the Intelsat 5 (S2704) satellite as it drifts from the 156.9° E.L. orbital location to the 137.0° W.L. orbital location and on station at 137.0° W.L. on the following center frequencies: 14498 MHz and 13999 MHz (Earth-to space); and 11451 MHz, 11452 MHz and 11454 MHz (space-to-Earth).

Points of Communication:

SES–STA–20180722–01957 E E140121 Intelsat License LLC

Special Temporary Authority

Grant of Authority

Date Effective: 08/01/2018

Class of Station:

On August 1, 2018, Intelsat License LLC was granted special temporary authority for 30 days, beginning August 2, 2018, to operate its fixed earth station in Hagerstown MD to perform telemetry, tracking and command (TT&C) services for the Intelsat 5 (S2704) satellite at the 137° W.L. orbital location on the following center frequencies: 14498 MHz and 13999 MHz (Earth-to space), and 11451 MHz and 11452 MHz and 11454 MHz (space-to-Earth).

Points of Communication:

SES–STA–20180722–01963 E E060384 Intelsat License LLC

Special Temporary Authority

Grant of Authority

Date Effective: 08/01/2018

Class of Station:

On August 1, 2018, Intelsat License LLC was granted special temporary authority for 30 days, beginning August 2, 2018, to operate its fixed earth station in Riverside, CA to perform tracking, telemetry and command (TT&C) services for the Intelsat 5 (S2704) as it drifts from the 156.9° E.L. orbital location to the 137.0° W.L. orbital location and on stations at 137° W.L. on the following center frequencies: 14498 MHz and 13999 MHz (Earth-to space), and 11451 MHz, 11452 MHz, and 11454 MHz, 13999 MHz (space-to-Earth).

Points of Communication:

SES–STA–20180726–02035 E E070123 DIRECTV Enterprises, LLC

Special Temporary Authority

Grant of Authority

Date Effective: 07/31/2018

Class of Station:

On July 31, 2018, DIRECTV Enterprises LLC was granted special temporary authority for 60 days, beginning August 1, 2018, to operate its fixed earth station in Long Beach, CA to provide telemetry, tracking, and command (TT&C) services for the SPACEWAY 1 (S2191) satellite as it drifts from the 102.95° W.L. orbital location to the 38.9° W.L. orbital location in the 29.5013021 GHz, and 29.5091146 GHz (Earth-to-space), and 19.70125 GHz and 19.70225 MHz GHz (space-to-Earth) frequency bands.

Points of Communication:

SES–STA–20180726–02036 E E020242 DIRECTV Enterprises, LLC

Special Temporary Authority

Grant of Authority

Date Effective: 07/31/2018

Class of Station:

On July 31, 2018, DIRECTV Enterprises LLC was granted special temporary authority for 60 days, beginning August 1, 2018, to operate its fixed earth station in Littleton, CO to provide telemetry, tracking, and command (TT&C) services for the SPACEWAY 1 (S2191) satellite as it drifts from the 102.95° W.L. orbital location to the 38.9° W.L. orbital location in the 29.5013021 GHz, and 29.5091146 GHz (Earth-to-space), and 19.70125 GHz and 19.70225 MHz GHz (space-to-Earth) frequency bands.

Points of Communication:

Dismissal

SES-REG-20180514-00792 E180397 New Media Broadcasters, Inc.

Application dismissed at applicant's request sent on August 2, 2018.

For more information concerning this Notice, contact the Satellite Division at 418-0719; TTY 1-888-835-5322.