FCC 312 Schedule S	FEDERAL COMMUNICATIONS COMMISSION SATELLITE SPACE STATION AUTHORIZATIONS (Technical and Operational Description)	Page 1: General, Frequency Bands, and GSO Orbit

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name:		e. Estimated Date of Placement into Service:	i Will the space station(s) operate on a Common Carrier Basis:
IRIDIUM NEXT		6/30/2017	N
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s):	j. Number of transponders offered on a common carrier basis:
1/8/2014		12.5 Years	
c. Construction Completion Date:		g. Total Number of Transponders:	k. Total Common Carrier Transponder Bandwidth:
2/1/2017		1	MHz
d1. Est Launch Date Begin:	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth)	l. Orbit Type: Mark all boxes that apply:
2/28/2015	5/31/2017	10.5 MHz	[ ] **GSO** [X] **NGSO**

S2. OPERATING FREQUENCY BANDS Identify the frequency range and transmit/receive mode for all frequency bands in which this station will oper
Also indicate the nature of service(s) for each frequency band.

Frequency Band Limits				e. T/R Mode	f. Nature of Service(s): List all that apply to this band
Lower Frequency (_Hz)		Upper Frequency (_Hz)			
a. Numeric	b. Unit (K/M/G)	c. Numeric	d. Unit (K/M/G)		
29.1	G	29.3	G	R	Feeder Link for Mobile Satellite Service in FSS
19.4	G	19.6	G	T	Feeder Link for Mobile Satellite Service in FSS
23.18	G	23.38	G	T	Inter-Satellite Service
23.18	G	23.38	G	R	Inter-Satellite Service
1616	M	1626.5	M	R	Mobile-Satellite Service
1616	M	1626.5	M	T	Mobile-Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

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S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System: 66

S4b. Total Number of Orbital Planes in Network or System: 6

S4c. Celestial Reference Body (Earth, Sun, Moon, etc.): E

S4d. Orbit Epoch Date: 2/15/2011

For each Orbital Plane Provide:

(e) Orbital Plane No.	(f) No. of Satellites in Plane	(g) Inclination Angle (degrees)	(h) Orbital Period (Seconds)	(i) Apogee (km)	(j) Perigee (km)	(k) Right Ascension of the Ascending Node (Deg.)	(l) Argument of Perigee (Degrees)	Active Service Arc Range (Degrees)		
								(m) Begin Angle	(n) End Angle	(o) Other
1	11	86.398	6028	780	780	111.296	90	0	360	
2	11	86.398	6028	780	780	142.883	90	0	360	
3	11	86.398	6028	780	780	174.47	90	0	360	
4	11	86.398	6028	780	780	206.057	90	0	360	
5	11	86.398	6028	780	780	237.644	90	0	360	
6	11	86.398	6028	780	780	269.231	90	0	360	
7	1	86.53	5926	700	700	111.296	90	0	360	
8	1	86.53	5926	700	700	142.883	90	0	360	
9	1	86.53	5926	700	700	174.47	90	0	360	
10	1	86.53	5926	700	700	206.057	90	0	360	
11	1	86.53	5926	700	700	237.644	90	0	360	
12	1	86.53	5926	700	700	269.231	90	0	360	
13	1	86.45	5989	750	750	111.296	90	0	360	
14	1	86.45	5989	750	750	142.883	90	0	360	
15	1	86.45	5989	750	750	174.47	90	0	360	
16	1	86.45	5989	750	750	206.057	90	0	360	
17	1	86.45	5989	750	750	237.644	90	0	360	
18	1	86.45	5989	750	750	269.231	90	0	360	

S5. INITIAL SATELLITE PHASE ANGLE For each satellite in each orbital plane, provide the intital phase angle.

(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)
1	1	320.4
1	2	287.7
1	3	254.9
1	4	222.2

1	5	189.5
1	6	156.8
1	7	124
1	8	91.3
1	9	58.6
1	10	25.8
1	11	353.1
2	1	302.7
2	2	270
2	3	237.3
2	4	204.5
2	5	171.8
2	6	139.1
2	7	106.4
2	8	73.6
2	9	40.9
2	10	8.2
2	11	335.5
3	1	317.8
3	2	285.1
3	3	252.3
3	4	219.6
3	5	186.9
3	6	154.2
3	7	121.4
3	8	88.7
3	9	56
3	10	23.2
3	11	350.5
4	1	300.1
4	2	267.4
4	3	234.7
4	4	201.9
4	5	169.2
4	6	136.5
4	7	103.8
4	8	71
4	9	38.3
4	10	5.6

4	11	332.9
5	1	315.2
5	2	282.5
5	3	249.7
5	4	217
5	5	184.3
5	6	151.6
5	7	118.8
5	8	86.1
5	9	53.4
5	10	20.6
5	11	347.9
6	1	297.5
6	2	264.8
6	3	232.1
6	4	199.3
6	5	166.6
6	6	133.9
6	7	101.2
6	8	68.4
6	9	35.7
6	10	3
6	11	330.3

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S6. SERVICE AREA CHARACTERISTICS for each service area provide:

(a) Service Area ID	(b) Type of Associated Station (Earth or Space)	(c) Service Area Diagram File Name (GXT File)	(d) Service Area Description. Provide list of geographic areas (state postal codes or ITU 3-ltr codes), satellites or Figure No. of Service Area Diagram.
1	E		XAX
2	E		XAX
3	S		XAA
4	E		XAX

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S7. SPACE STATION ANTENNA BEAM CHARACTERISTICS For each antenna beam provide:

(a) Beam ID	(b) T/R Mode	Isotropic Antenna Gain		(e) Pointing Error (Degrees)	(f) Rotational Error (Degrees)	(g) Min. Cross-Polar Isolation (dB)	(h) Polarization Switchable? (Y/N)	(i) Polarization Alignment Rel. Equatorial Plane (Degrees)	(j) Service Area ID	Transmit			Receive				
		(c) Peak (dBi)	(d) Edge (dBi)							(k) Input Losses (dB)	(l) Effective Output Power (W)	(m) Max. EIRP (dBW)	(n) System Noice Temp (k)	(o) G/T Max. Gain Pt. (db/K)	(p) Min. Saturation Flux Density (dBW/m2)	Input Attenuator (dB)	
																(q) Max. Value	(r) Step Size
1	T	23.42	17.592	0.37	0.2	17.518	N		1	0.8	120	43.412					
2	T	23.398	14.782	0.37	0.2	18.081	N		1	0.8	120	43.39					
3	T	23.393	16.833	0.37	0.2	15.007	N		1	0.8	120	43.385					
4	T	23.364	16.966	0.37	0.2	19.001	N		1	0.8	120	43.356					
5	T	23.334	16.972	0.37	0.2	15.571	N		1	0.8	120	43.326					
6	T	23.474	15.73	0.37	0.2	12.633	N		1	0.8	120	43.466					
7	T	23.513	15.711	0.37	0.2	13.373	N		1	0.8	120	43.505					
8	T	20.424	14.883	0.36	0.2	21.883	N		1	0.8	120	40.416					
9	T	23.544	16.878	0.37	0.2	15.95	N		1	0.8	120	43.536					
10	T	23.388	14.936	0.37	0.2	16.061	N		1	0.8	120	43.38					
11	T	23.413	16.375	0.37	0.2	13.667	N		1	0.8	120	43.405					
12	T	20.448	14.601	0.36	0.2	15.527	N		1	0.8	120	40.44					
13	T	19.794	14.168	0.36	0.2	20.929	N		1	0.8	120	39.786					
14	T	20.652	13.233	0.36	0.2	19.921	N		1	0.8	120	40.644					
15	T	19.739	12.808	0.35	0.2	19.608	N		1	0.8	120	39.731					
16	T	18.67	12.353	0.35	0.2	22.794	N		1	0.8	120	38.662					
17	T	23.488	17.23	0.37	0.2	14.021	N		1	0.8	120	43.48					
18	T	23.537	16.128	0.37	0.2	17.264	N		1	0.8	120	43.529					
19	T	23.312	17.64	0.37	0.2	18.259	N		1	0.8	120	43.304					
20	T	23.248	17.253	0.37	0.2	16.687	N		1	0.8	120	43.24					
21	T	23.163	16.972	0.37	0.2	18.384	N		1	0.8	120	43.155					
22	T	23.315	14.625	0.37	0.2	16.336	N		1	0.8	120	43.307					
23	T	23.389	14.851	0.37	0.2	15.34	N		1	0.8	120	43.381					
24	T	20.626	14.318	0.36	0.2	16.488	N		1	0.8	120	40.618					
25	T	23.376	16.59	0.37	0.2	13.411	N		1	0.8	120	43.368					
26	T	23.573	16.193	0.37	0.2	15.724	N		1	0.8	120	43.565					
27	T	23.403	16.638	0.37	0.2	15.992	N		1	0.8	120	43.395					
28	T	20.784	15.054	0.36	0.2	20.358	N		1	0.8	120	40.776					
29	T	20.531	13.88	0.36	0.2	16.789	N		1	0.8	120	40.523					

30	T	19.667	14.133	0.36	0.2	19.751	N		1	0.8	120	39.659						
31	T	18.68	11.854	0.35	0.2	19.536	N		1	0.8	120	38.672						
32	T	18.098	12.465	0.35	0.2	17.503	N		1	0.8	120	38.09						
33	T	23.445	16.442	0.37	0.2	16.702	N		1	0.8	120	43.437						
34	T	23.527	15.829	0.37	0.2	15.51	N		1	0.8	120	43.519						
35	T	23.355	16.582	0.37	0.2	15.124	N		1	0.8	120	43.347						
36	T	23.342	17.077	0.37	0.2	17.747	N		1	0.8	120	43.334						
37	T	23.316	17.004	0.37	0.2	17.83	N		1	0.8	120	43.308						
38	T	23.474	16.455	0.37	0.2	15.984	N		1	0.8	120	43.466						
39	T	23.612	16.512	0.37	0.2	15.55	N		1	0.8	120	43.604						
40	T	20.663	14.737	0.36	0.2	16.536	N		1	0.8	120	40.655						
41	T	23.415	16.477	0.37	0.2	14.272	N		1	0.8	120	43.407						
42	T	23.432	15.76	0.37	0.2	13.698	N		1	0.8	120	43.424						
43	T	23.382	16.475	0.37	0.2	14.038	N		1	0.8	120	43.374						
44	T	21.022	14.39	0.36	0.2	18.444	N		1	0.8	120	41.014						
45	T	20.607	12.97	0.36	0.2	19.95	N		1	0.8	120	40.599						
46	T	20.587	14.175	0.36	0.2	20.689	N		1	0.8	120	40.579						
47	T	18.275	10.781	0.35	0.2	20.333	N		1	0.8	120	38.267						
48	T	18.758	10.834	0.35	0.2	19.443	N		1	0.8	120	38.75						
101	R	23.42	17.592	0.37	0.2	17.518	N		1				521	-3.7	-136			
102	R	23.398	14.782	0.37	0.2	18.081	N		1				522	-3.8	-136			
103	R	23.393	16.833	0.37	0.2	15.007	N		1				522	-3.8	-136			
104	R	23.364	16.966	0.37	0.2	19.001	N		1				523	-3.8	-136			
105	R	23.334	16.972	0.37	0.2	15.571	N		1				521	-3.8	-136			
106	R	23.474	15.73	0.37	0.2	12.633	N		1				520	-3.7	-136			
107	R	23.513	15.711	0.37	0.2	13.373	N		1				516	-3.6	-136			
108	R	20.424	14.883	0.36	0.2	21.883	N		1				515	-6.7	-133			
109	R	23.544	16.878	0.37	0.2	15.95	N		1				514	-3.6	-136			
110	R	23.388	14.936	0.37	0.2	16.061	N		1				516	-3.7	-136			
111	R	23.413	16.375	0.37	0.2	13.667	N		1				511	-3.7	-136			
112	R	20.448	14.601	0.36	0.2	15.527	N		1				514	-6.7	-133			
113	R	19.794	14.168	0.36	0.2	20.929	N		1				515	-7.3	-133			
114	R	20.652	13.233	0.36	0.2	19.921	N		1				515	-6.5	-133			
115	R	19.739	12.808	0.35	0.2	19.608	N		1				514	-7.4	-130			
116	R	18.67	12.353	0.35	0.2	22.794	N		1				519	-8.5	-130			
117	R	23.488	17.23	0.37	0.2	14.021	N		1				517	-3.6	-136			
118	R	23.537	16.128	0.37	0.2	17.264	N		1				519	-3.6	-136			
119	R	23.312	17.64	0.37	0.2	18.259	N		1				477	-3.5	-136			
120	R	23.248	17.253	0.37	0.2	16.687	N		1				481	-3.6	-136			

121	R	23.163	16.972	0.37	0.2	18.384	N		1				489	-3.7	-136		
122	R	23.315	14.625	0.37	0.2	16.336	N		1				493	-3.6	-136		
123	R	23.389	14.851	0.37	0.2	15.34	N		1				485	-3.5	-136		
124	R	20.626	14.318	0.36	0.2	16.488	N		1				470	-6.1	-133		
125	R	23.376	16.59	0.37	0.2	13.411	N		1				474	-3.4	-136		
126	R	23.573	16.193	0.37	0.2	15.724	N		1				473	-3.2	-136		
127	R	23.403	16.638	0.37	0.2	15.992	N		1				473	-3.3	-136		
128	R	20.784	15.054	0.36	0.2	20.358	N		1				471	-5.9	-133		
129	R	20.531	13.88	0.36	0.2	16.789	N		1				458	-6.1	-133		
130	R	19.667	14.133	0.36	0.2	19.751	N		1				464	-7	-133		
131	R	18.68	11.854	0.35	0.2	19.536	N		1				473	-8.1	-130		
132	R	18.098	12.465	0.35	0.2	17.503	N		1				477	-8.7	-130		
133	R	23.445	16.442	0.37	0.2	16.702	N		1				475	-3.3	-136		
134	R	23.527	15.829	0.37	0.2	15.51	N		1				471	-3.2	-136		
135	R	23.355	16.582	0.37	0.2	15.124	N		1				479	-3.4	-136		
136	R	23.342	17.077	0.37	0.2	17.747	N		1				488	-3.5	-136		
137	R	23.316	17.004	0.37	0.2	17.83	N		1				492	-3.6	-136		
138	R	23.474	16.455	0.37	0.2	15.984	N		1				489	-3.4	-136		
139	R	23.612	16.512	0.37	0.2	15.55	N		1				468	-3.1	-136		
140	R	20.663	14.737	0.36	0.2	16.536	N		1				476	-6.1	-133		
141	R	23.415	16.477	0.37	0.2	14.272	N		1				478	-3.4	-136		
142	R	23.432	15.76	0.37	0.2	13.698	N		1				479	-3.4	-136		
143	R	23.382	16.475	0.37	0.2	14.038	N		1				472	-3.4	-136		
144	R	21.022	14.39	0.36	0.2	18.444	N		1				461	-5.6	-133		
145	R	20.607	12.97	0.36	0.2	19.95	N		1				470	-6.1	-133		
146	R	20.587	14.175	0.36	0.2	20.689	N		1				481	-6.2	-133		
147	R	18.275	10.781	0.35	0.2	20.333	N		1				483	-8.6	-130		
148	R	18.758	10.834	0.35	0.2	19.443	N		1				481	-8.1	-130		
FT	T	28.7	28.6	0.4	0.2	19	N		2	0.7	1	28					
FR	R	32.7	32.5	0.5	0.2	19	N		2				940	3	-107		
ST	T	7	-2			15	N		4	4.3	0.7	1.2					
SR	R	7	-2			15	N		4				4600	-29.6	-78.4		
XFT	T	37.6	37.1	0.6	0.2	25	N		3	0.9	4	42					
XAT	T	37.6	37.1	0.6	0.2	25	N		3	0.9	4	42					
XRT	T	37.6	37.1	0.6	0.2	25	N		3	0.9	4	42					
XLT	T	37.6	37.1	0.6	0.2	25	N		3	0.9	4	42					
XFR	R	37.6	37.1	0.6	0.2	25	N		3				817	8	-102		
XAR	R	37.6	37.1	0.6	0.2	25	N		3				817	8	-102		
XRR	R	37.6	37.1	0.6	0.2	25	N		3				817	8	-102		

XLR	R	37.6	37.1	0.6	0.2	25	N		3				817	8	-102		

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S8. ANTENNA BEAM DIAGRAMS For each beam pattern provide the reference to the graphic image and numerical data:
Also provide the power flux density levels in each beam that result from the emission with the highest power flux density.

(a) Beam ID	(b) T/R Mode	(c) Co-or Cross Polar Mode ("C" or" X")	(d) GSO Ref. Orbital Longitude (Deg. E/W)	(e) NGSO Antenna Gain Contour Description (Figure/Table/ Exhibit)	(f) GSO Antenna Gain Contour Data (GXT File)	Max. Power Flux Density (dBW/M2/Hz) At Angle of Arrival above horizontal (for emission with highest PFD)				
						(g) 5 Deg	(h) 10 Deg	(i) 15 Deg	(j) 20 Deg	(k) 25 Deg
1	T	C		1						
2	T	C		2						
3	T	C		3						
4	T	C		4						
5	T	C		5						
6	T	C		6						
7	T	C		7						
8	T	C		8						
9	T	C		9						
10	T	C		10						
11	T	C		11						
12	T	C		12						
13	T	C		13						
14	T	C		14						
15	T	C		15						
16	T	C		16						
17	T	C		17						
18	T	C		18						
19	T	C		19						
20	T	C		20						
21	T	C		21						
22	T	C		22						
23	T	C		23						
24	T	C		24						
25	T	C		25						
26	T	C		26						
27	T	C		27						
28	T	C		28						

29	T	C		29						
30	T	C		30						
31	T	C		31						
32	T	C		32						
33	T	C		33						
34	T	C		34						
35	T	C		35						
36	T	C		36						
37	T	C		37						
38	T	C		38						
39	T	C		39						
40	T	C		40						
41	T	C		41						
42	T	C		42						
43	T	C		43						
44	T	C		44						
45	T	C		45						
46	T	C		46						
47	T	C		47						
48	T	C		48						
1	T	X		49						
2	T	X		50						
3	T	X		51						
4	T	X		52						
5	T	X		53						
6	T	X		54						
7	T	X		55						
8	T	X		56						
9	T	X		57						
10	T	X		58						
11	T	X		59						
12	T	X		60						
13	T	X		61						
14	T	X		62						
15	T	X		63						
16	T	X		64						
17	T	X		65						
18	T	X		66						
19	T	X		67						

20	T	X		68						
21	T	X		69						
22	T	X		70						
23	T	X		71						
24	T	X		72						
25	T	X		73						
26	T	X		74						
27	T	X		75						
28	T	X		76						
29	T	X		77						
30	T	X		78						
31	T	X		79						
32	T	X		80						
33	T	X		81						
34	T	X		82						
35	T	X		83						
36	T	X		84						
37	T	X		85						
38	T	X		86						
39	T	X		87						
40	T	X		88						
41	T	X		89						
42	T	X		90						
43	T	X		91						
44	T	X		92						
45	T	X		93						
46	T	X		94						
47	T	X		95						
48	T	X		96						
101	R	C		1						
102	R	C		2						
103	R	C		3						
104	R	C		4						
105	R	C		5						
106	R	C		6						
107	R	C		7						
108	R	C		8						
109	R	C		9						
110	R	C		10						

111	R	C		11						
112	R	C		12						
113	R	C		13						
114	R	C		14						
115	R	C		15						
116	R	C		16						
117	R	C		17						
118	R	C		18						
119	R	C		19						
120	R	C		20						
121	R	C		21						
122	R	C		22						
123	R	C		23						
124	R	C		24						
125	R	C		25						
126	R	C		26						
127	R	C		27						
128	R	C		28						
129	R	C		29						
130	R	C		30						
131	R	C		31						
132	R	C		32						
133	R	C		33						
134	R	C		34						
135	R	C		35						
136	R	C		36						
137	R	C		37						
138	R	C		38						
139	R	C		39						
140	R	C		40						
141	R	C		41						
142	R	C		42						
143	R	C		43						
144	R	C		44						
145	R	C		45						
146	R	C		46						
147	R	C		47						
148	R	C		48						
101	R	X		49						

102	R	X		50						
103	R	X		51						
104	R	X		52						
105	R	X		53						
106	R	X		54						
107	R	X		55						
108	R	X		56						
109	R	X		57						
110	R	X		58						
111	R	X		59						
112	R	X		60						
113	R	X		61						
114	R	X		62						
115	R	X		63						
116	R	X		64						
117	R	X		65						
118	R	X		66						
119	R	X		67						
120	R	X		68						
121	R	X		69						
122	R	X		70						
123	R	X		71						
124	R	X		72						
125	R	X		73						
126	R	X		74						
127	R	X		75						
128	R	X		76						
129	R	X		77						
130	R	X		78						
131	R	X		79						
132	R	X		80						
133	R	X		81						
134	R	X		82						
135	R	X		83						
136	R	X		84						
137	R	X		85						
138	R	X		86						
139	R	X		87						
140	R	X		88						

141	R	X		89						
142	R	X		90						
143	R	X		91						
144	R	X		92						
145	R	X		93						
146	R	X		94						
147	R	X		95						
148	R	X		96						
FT	T	C		97		-126	-125	-123	-121	-120
FT	T	X		98						
FR	R	C		99						
FR	R	X		100						
ST	T	C		101		-138.5	-137	-135.7	-134.5	-133.5
ST	T	X		101						
SR	R	C		102						
SR	R	X		102						
XFT	T	C		103		-139	-140.9	-142.5	-140.9	-140.2
XAT	T	C		103		-139	-140.9	-142.5	-140.9	-140.2
XRT	T	C		103		-139	-140.9	-142.5	-140.9	-140.2
XLT	T	C		103		-139	-140.9	-142.5	-140.9	-140.2
XFT	T	X		104						
XAT	T	X		104						
XRT	T	X		104						
XLT	T	X		104						
XFR	R	C		103						
XAR	R	C		103						
XRR	R	C		103						
XLR	R	C		103						
XFR	R	X		104						
XAR	R	X		104						
XRR	R	X		104						
XLR	R	X		104						

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S9. SPACE STATION CHANNELS For each frequency channel provide:

(a) Channel No.	(B) Assigned Bandwidth (kHz)	(c) T/R Mode	(d) Center Frequency (MHz)	(e) Polarization (H, V, L, R)	(f) TTC or Comm Channel (T or C)
FR001	15453.65	R	29110	R	C
FR002	15453.65	R	29125	R	C
FR003	15453.65	R	29140	R	C
FR004	1545365	R	29155	R	C
FR005	15453.65	R	29170	R	C
FR006	15453.65	R	29185	R	C
FR007	15453.65	R	29200	R	C
FR008	15453.65	R	29215	R	C
FR009	15453.65	R	29230	R	C
FR010	15453.65	R	29245	R	C
FR011	15453.65	R	29260	R	C
FR012	15453.65	R	29275	R	C
FR013	15453.65	R	29290	R	C
FT001	15453.65	T	19410	L	C
FT002	15453.65	T	19425	L	C
FT003	15453.65	T	19440	L	C
FT004	15453.65	T	19455	L	C
FT005	15453.65	T	19470	L	C
FT006	15453.65	T	19485	L	C
FT007	15453.65	T	19500	L	C
FT008	15453.65	T	19515	L	C
FT009	15453.65	T	19530	L	C
FT010	15453.65	T	19545	L	C
FT011	15453.65	T	19560	L	C
FT012	15453.65	T	19575	L	C
FT013	15453.65	T	19590	L	C
XR001	21988.27	R	23192.5	H	C
XR002	21988.27	R	23217.5	H	C
XR003	21988.27	R	23242.5	H	C
XR004	21988.27	R	23267.5	H	C

S10. SPACE STATION TRANSPONDERS For each transponder provide:

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
FR001		FR001	FR		
FR002		FR002	FR		
FR003		FR003	FR		
FR004		FR004	FR		
FR005		FR005	FR		
FR006		FR006	FR		
FR007		FR007	FR		
FR008		FR008	FR		
FR009		FR009	FR		
FR010		FR010	FR		
FR011		FR011	FR		
FR012		FR012	FR		
FR013		FR013	FR		
FT001				FT001	FT
FT002				FT002	FT
FT003				FT003	FT
FT004				FT004	FT
FT005				FT005	FT
FT006				FT006	FT
FT007				FT007	FT
FT008				FT008	FT
FT009				FT009	FT
FT010				FT010	FT
FT011				FT011	FT
FT012				FT012	FT
FT013				FT013	FT
XFT01				XT001	XFT
XFT02				XT002	XFT
XFT03				XT003	XFT
XFT04				XT004	XFT

XR005	21988.27	R	23292.5	H	C
XR006	21988.27	R	23317.5	H	C
XR007	21988.27	R	23342.5	H	C
XR008	21988.27	R	23367.5	H	C
XT001	21988.27	T	23192.5	H	C
XT002	21988.27	T	23217.5	H	C
XT003	21988.27	T	23242.5	H	C
XT004	21988.27	T	23267.5	H	C
XT005	21988.27	T	23292.5	H	C
XT006	21988.27	T	23317.5	H	C
XT007	21988.27	T	23342.5	H	C
LS1	124.05	T	1626.1042	R	C
LS2	124.05	T	1626.1458	R	C
LS3	124.05	T	1626.2708	R	C
LS4	124.05	T	1626.3958	R	C
LS5	124.05	T	1626.4375	R	C
LR	10500	R	1621.25	R	C
LT	10500	T	1621.25	R	C
XT008	21988.27	T	23367.5	H	C
SR001	1971	R	29102	R	T
SR002	1971	R	29298	R	T
ST001	1654	T	19400.2	L	T
ST002	1654	T	19400.6	L	T
ST003	1654	T	19401	L	T
ST004	1654	T	19401.4	L	T
ST005	1654	T	19401.8	L	T
ST006	1654	T	19402.2	L	T
ST007	1654	T	19402.6	L	T
ST008	1654	T	19403	L	T
ST009	1654	T	19403.4	L	T
ST010	1654	T	19403.8	L	T
ST011	1654	T	19404.2	L	T
ST012	1654	T	19404.6	L	T
ST013	1654	T	19405	L	T

XFT05				XT005	XFT
XFT06				XT006	XFT
XFT07				XT007	XFT
XFT08				XT008	XFT
XAT01				XT001	XAT
XAT02				XT002	XAT
XAT03				XT003	XAT
XAT04				XT004	XAT
XAT05				XT005	XAT
XAT06				XT006	XAT
XAT07				XT007	XAT
LS101				LS1	1
LS102				LS1	2
LS103				LS1	3
LS104				LS1	4
LS105				LS1	5
LS106				LS1	6
LS107				LS1	7
LS108				LS1	8
LS109				LS1	9
LS110				LS1	10
LS111				LS1	11
LS112				LS1	12
LS113				LS1	13
LS114				LS1	14
LS115				LS1	15
LS116				LS1	16
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LS118				LS1	18
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LS124				LS1	24
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LS126				LS1	26
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LS129				LS1	29
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LS139				LS1	39
LS140				LS1	40
LS141				LS1	41
LS142				LS1	42
LS143				LS1	43
LS144				LS1	44
LS145				LS1	45
LS146				LS1	46
LS147				LS1	47
LS148				LS1	48
LS201				LS2	1
LS202				LS2	2
LS203				LS2	3
LS204				LS2	4
LS205				LS2	5
LS206				LS2	6
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LS245				LS2	45
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LS301				LS3	1
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LS303				LS3	3
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LS347				LS3	47
LS348				LS3	48
LS401				LS4	1

LS402				LS4	2
LS403				LS4	3
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LS445				LS4	45
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LS447				LS4	47
LS448				LS4	48
LS501				LS5	1
LS502				LS5	2
LS503				LS5	3
LS504				LS5	4
LS505				LS5	5
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LS508				LS5	8
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LS530				LS5	30
LS531				LS5	31

LS532				LS5	32
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LS542				LS5	42
LS543				LS5	43
LS544				LS5	44
LS545				LS5	45
LS546				LS5	46
LS547				LS5	47
LS548				LS5	48
LR001		LR	101		
LR002		LR	102		
LR003		LR	103		
LR004		LR	104		
LR005		LR	105		
LR006		LR	106		
LR007		LR	107		
LR008		LR	108		
LR009		LR	109		
LR010		LR	110		
LR011		LR	111		
LR012		LR	112		
LR013		LR	113		
LR014		LR	114		
LR015		LR	115		
LR016		LR	116		
LR017		LR	117		
LR018		LR	118		
LR019		LR	119		
LR020		LR	120		
LR021		LR	121		
LR022		LR	122		

LR023		LR	123		
LR024		LR	124		
LR025		LR	125		
LR026		LR	126		
LR027		LR	127		
LR028		LR	128		
LR029		LR	129		
LR030		LR	130		
LR031		LR	131		
LR032		LR	132		
LR033		LR	133		
LR034		LR	134		
LR035		LR	135		
LR036		LR	136		
LR037		LR	137		
LR038		LR	138		
LR039		LR	139		
LR040		LR	140		
LR041		LR	141		
LR042		LR	142		
LR043		LR	143		
LR044		LR	144		
LR045		LR	145		
LR046		LR	146		
LR047		LR	147		
LR048		LR	148		
LT001				LT	1
LT002				LT	2
LT003				LT	3
LT004				LT	4
LT005				LT	5
LT006				LT	6
LT007				LT	7
LT008				LT	8
LT009				LT	9
LT010				LT	10
LT011				LT	11
LT012				LT	12
LT013				LT	13

LT014				LT	14
LT015				LT	15
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LT040				LT	40
LT041				LT	41
LT042				LT	42
LT043				LT	43
LT044				LT	44
LT045				LT	45
LT046				LT	46
LT047				LT	47
LT048				LT	48
XAT08				XT008	XAT
XRT01				XT001	XRT
XRT02				XT002	XRT
XRT03				XT003	XRT

XRT04				XT004	XRT
XRT05				XT005	XRT
XRT06				XT006	XRT
XRT07				XT007	XRT
XRT08				XT008	XRT
XLT01				XT001	XLT
XLT02				XT002	XLT
XLT03				XT003	XLT
XLT04				XT004	XLT
XLT05				XT005	XLT
XLT06				XT006	XLT
XLT07				XT007	XLT
XLT08				XT008	XLT
XFR01		XR001	XFR		
XFR02		XR002	XFR		
XFR03		XR003	XFR		
XFR04		XR004	XFR		
XFR05		XR005	XFR		
XFR06		XR006	XFR		
XFR07		XR007	XFR		
XFR08		XR008	XFR		
XAR01		XR001	XAR		
XAR02		XR002	XAR		
XAR03		XR003	XAR		
XAR04		XR004	XAR		
XAR05		XR005	XAR		
XAR06		XR006	XAR		
XAR07		XR007	XAR		
XAR08		XR008	XAR		
XRR01		XR001	XRR		
XRR02		XR002	XRR		
XRR03		XR003	XRR		
XRR04		XR004	XRR		
XRR05		XR005	XRR		
XRR06		XR006	XRR		
XRR07		XR007	XRR		
XRR08		XR008	XRR		
XLR01		XR001	XLR		
XLR02		XR002	XLR		

XLR03		XR003	XLR		
XLR04		XR004	XLR		
XLR05		XR005	XLR		
XLR06		XR006	XLR		
XLR07		XR007	XLR		
XLR08		XR008	XLR		
SR001		SR001	SR		
SR002		SR002	SR		
ST001				ST001	ST
ST002				ST002	ST
ST003				ST003	ST
ST004				ST004	ST
ST005				ST005	ST
ST006				ST006	ST
ST007				ST007	ST
ST008				ST008	ST
ST009				ST009	ST
ST010				ST010	ST
ST011				ST011	ST
ST012				ST012	ST
ST013				ST013	ST

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S11. DIGITAL MODULATION PARAMETERS For each digital emission provide:

(a) Digital Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) No. of Phases	(e)Uncoded Data Rate (kbps)	(f) FEC Error Correction Coding Rate	(g) CDMA Processing Gain (dB)	(h) Total C/N Performance Objective (dB)	(i) Single Entry C/I Objective (dB)
D1	35K0G1W	124.05	4	50	1		7.6	19.8
D2	35K0G1W	124.05	2	25	0.5		4.6	16.8
D3	36K0G1W	125.05	4	60	0.8		8.6	20.8
D4	72K0G1W	161.05	4	120	0.6667		5.2	17.4
D5	288KG1W	377.05	4	480	0.6667		5.1	17.3
D6	288KG1W	377.05	16	960	0.6667		11.6	23.8
D7	14M0G7W	15453.65	16	31111	0.6667		16.1	28.3
D8	14M0G7W	15453.65	8	23334	0.6667		13.7	25.9
D9	14M0G7W	15453.65	4	18667	0.8		11.8	24
D10	14M0G7W	15453.65	4	9334	0.4		6.8	19
D11	21M6G7W	21988.27	8	36000	0.6667		9	25

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S12. ANALOG MODULATION PARAMETERS For each analog emission provide:

(a) Analog Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) Signal Type	(e) Channels per Carrier	Multi-channel Telephony				(j) Video Standard NTSC, PAL, etc.	(k) Video Noise-Weighting (dB)	(l) Video and SCPC/FM Modulation Index	(m) SCPC/FM Compander, Preemphasis, and Noise Weighting (dB)	(n) Total C/N Performance Objective (dB)	(o) Single Entry C/I Objective (dB)
					(f) Ave. Companded Talker Level (dBm0)	(g) Bottom Baseband Freq. (MHz)	(h) Top Baseband Freq. (MHz)	(i) RMS Modulation Index						
A1	1M00F9D	1971		1									6.2	20.2
A2	200KF9D	1654		1									17.8	31.8

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S13. TYPICAL EMISSIONS For each planned type of emission provide:

Associated Transponder ID Range		Modulation ID		(e) Carriers per Transponder	(f) Carrier Spacing (kHz)	(g)Noise Budget Reference (Table No.)	(h) Energy Dispersal Bandwidth (kHz)	Receive Band (Assoc. Transmit Stn)			Transmit Band (This Space Station)			
								(i)Assoc. Stn. Max. Antenna Gain (dBi)	Assoc. Station Transmit Power (dBW)		EIRP (dBW)		(n) Max. Power Flux Density (dBW/m2/Hz)	(o)Assoc. Stn Rec. G/T (dB/K)
(a) Start	(b) End	(c) Digital (Table S11)	(d) Analog (Table S12)						(j) Min.	(k) Max.	(l) Min.	(m) Max.		
FR001	FR013	D7		1		1d		57	-28	10				
FR001	FR013	D8		1		1c		57	-28	10				
FR001	FR013	D9		1		1b		57	-28	10				
FR001	FR013	D10		1		1a		57	-28	10				
FT001	FT013	D8		1		2c					2	28	-105	22
FT001	FT013	D9		1		2b					2	28	-105	22
FT001	FT013	D10		1		2a					2	28	-105	22
SR001	SR002		A1	1		3		57	0	10				
ST001	ST013		A2	1		4					-7.7	1.2	-127	22
XFT01	XFT08	D11		1		5a					41	42	-139	8
XAT01	XAT08	D11		1		5a					41	42	-139	8
XRT01	XRT08	D11		1		5b					41	42	-139	8
XLT01	XLT08	D11		1		5b					41	42	-139	8
XFR01	XFR08	D11		1		5a		37.6	3.4	4.4				
XAR01	XAR08	D11		1		5a		37.6	3.4	4.4				
XRR01	XRR08	D11		1		5b		37.6	3.4	4.4				
XLR01	XLR08	D11		1		5b		37.6	3.4	4.4				
LR001	LR048	D1		252	41.67	6a		1.1	-2.5	5.5				
LR001	LR048	D1		252	41.67	6c		1.1	-2.8	5.2				
LR001	LR048	D1		252	41.67	6b		0	-3.8	1.7				
LR001	LR048	D1		252	41.67	6d		11.5	-5.5	2.5				
LR001	LR048	D2		252	41.67	6e		1.1	-2.5	5.5				
LR001	LR048	D3		252	41.67	7a		1.1	-2.6	5.4				
LR001	LR048	D4		126	83.34	7b		1.1	-1.1	6.9				
LR001	LR048	D3		252	41.67	7c		3	-4.5	3.5				
LR001	LR048	D4		126	83.34	7d		3	-3	5				
LR001	LR048	D5		31	330	7e		3	-2	6				
LS201	LS248	D1		1		8c					29.5	42.5	-96.7	-30.2
LS301	LS348	D1		1		8f					26	39	-103.2	-32

LS401	LS448	D1		1		8c					29.5	42.5	-96.7	-30.2
LS501	LS548	D1		1		8c					29.5	42.5	-96.7	-30.2
LR001	LR048	D2		252	41.67	6e		0	-3.8	1.7				
LR001	LR048	D2		252	41.67	6e		1.1	-2.8	5.2				
LR001	LR048	D3		252	41.67	7f		12	-15	-7				
LR001	LR048	D4		126	83.34	7g		12	-12	-4				
LR001	LR048	D5		31	330	7h		12	-4.8	3.2				
LR001	LR048	D6		31	330	7i		12	-4.8	3.2				
LS101	LS148	D1		1		8c					29.5	42.5	-96.7	-30.2
LT001	LT048	D1		252	41.67	8a					16.5	31	-108.1	-32
LT001	LT048	D1		252	41.67	8d					16.5	31	-108	-30.2
LT001	LT048	D1		252	41.67	8b					21	31	-108.3	-31
LT001	LT048	D1		252	41.67	8e					11	21	-118.5	-21
LT001	LT048	D3		252	41.67	9a					16.5	31	-108.9	-29
LT001	LT048	D4		126	83.34	9b					16.5	31	-111.9	-29
LT001	LT048	D5		31	330	9c					22	37	-111.9	-29
LT001	LT048	D3		252	41.67	9d					16.5	31	-108.8	-27
LT001	LT048	D4		126	83.34	9e					16.5	31	-111.8	-27
LT001	LT048	D5		31	330	9f					16.5	31	-119.3	-27
LT001	LT048	D3		252	41.67	9g					6	21	-119.3	-18
LT001	LT048	D4		31	83.34	9h					4	24	-119.3	-18
LT001	LT048	D5		31	330	9i					10	30	-119.3	-18
LT001	LT048	D6		31	330	9j					17	32	-117	-18
LR001	LR048	D1		252	41.67	6d		12	-6.5	1.5				
LR001	LR048	D2		252	41.67	6e		3	-4.4	3.6				
LR001	LR048	D2		252	41.67	6e		12	-6.5	1.5				
LR001	LR048	D2		252	41.67	6e		11.5	-5.5	2.5				

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S14. Is the space station(s) controlled and monitored remotely? If Yes, provide the location and telephone number of the TT and C control point(s): Yes

Remote Control (TT C) Location(s):

S14a: Street Address: 8440			
S14b. City: Tempe	S14c. County: Maricopa	S14d. State/Country AZ	S14e. Zip Code: 85284
S14f. Telephone Number: 480 752 1172	S14g. Call Sign of Control Station (if appropriate): E960131		

Remote Control (TT C) Location(s):

S14a: Street Address: 2501			
S14b. City: Chandler	S14c. County: Maricopa	S14d. State/Country AZ	S14e. Zip Code: 85248
S14f. Telephone Number: 480 752 1172	S14g. Call Sign of Control Station (if appropriate): E960244		

Remote Control (TT C) Location(s):

S14a: Street Address: North Star Industrial Park			
S14b. City: Fairbanks	S14c. County: North Star B.	S14d. State/Country AK	S14e. Zip Code: 99701
S14f. Telephone Number: 480 752 1172	S14g. Call Sign of Control Station (if appropriate): E050282		

Remote Control (TT C) Location(s):

S14a: Street Address: North Star Industrial Park			
S14b. City: Fairbanks	S14c. County: North Star B.	S14d. State/Country AK	S14e. Zip Code: 99701
S14f. Telephone Number: 480 752 1172	S14g. Call Sign of Control Station (if appropriate): E060300		

Remote Control (TT C) Location(s):

S14a: Street Address: 500			
S14b. City: Wahiawa	S14c. County: Honolulu	S14d. State/Country HI	S14e. Zip Code: 96786
S14f. Telephone Number: 480 441 8510	S14g. Call Sign of Control Station (if appropriate): E980049		

Remote Control (TT C) Location(s):

S14a: Street Address:			
S14b. City: Svalbard	S14c. County:	S14d. State/Country	S14e. Zip Code:
S14f. Telephone Number:	S14g. Call Sign of Control Station (if appropriate):		

Remote Control (TT C) Location(s):

S14a: Street Address:			
S14b. City: Yellowknife	S14c. County:	S14d. State/Country	S14e. Zip Code:
S14f. Telephone Number:	S14g. Call Sign of Control Station (if appropriate):		

Remote Control (TT C) Location(s):

S14a: Street Address:			
S14b. City: Iqaluit	S14c. County:	S14d. State/Country	S14e. Zip Code:
S14f. Telephone Number:	S14g. Call Sign of Control Station (if appropriate):		

Remote Control (TT C) Location(s):

S14a: Street Address:			
S14b. City:	S14c. County:	S14d. State/Country	S14e. Zip Code:
S14f. Telephone Number:	S14g. Call Sign of Control Station (if appropriate):		

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a: Mass of spacecraft without fuel (kg): 695	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 155		
S15c. Mass of spacecraft and fuel at launch (kg): 850	S15f. Length (m): 6.48	S15i. Payload: 0.72
S15d. Mass of fuel, in orbit, at beginning of life (kg): 80	S15g. Width (m): 8.8	S15j. Bus: 0.92
S15e. Deployed Area of Solar Array (square meters): 7.2	S15h. Height (m): 2.5	S15k. Total: 0.66

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

Spacecraft Subsystem	Electrical Power (Watts) At Beginning of Life		Electrical Power (Watts) At End of Life	
	At Equinox	At Solstice	At Equinox	At Solstice
Payload (Watts):	(a):	(f): 971	(k):	(p): 844
Bus (Watts):	(b):	(g): 352	(l):	(q): 306
Total (Watts):	(c):	(h): 1323	(m)	(r): 1150
Solar Array (Watts):	(d):	(i): 2300	(n):	(s): 2196
Depth of Battery Discharge (%):	(e) %	(j) 28 %	(o) %	(t) 32 %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?:	[X] YES	[ ] NO	[ ] N/A
b. Are the appropriate service area coverage requirements of § 25.143(b)(ii) and (iii), or § 25.145(c)(1) and (2) met?	[X] YES	[ ] NO	[ ] N/A
c. Are the frequency tolerances of § 25.202(e) and the out-of-band emission limits of § 25.202(f)(1), (2) and (3) met?	[X] YES	[ ] NO	[ ] N/A

In addition to the information required in this Form, the space station applicant is required to provide all the information specified in Section 25.114 of the Commission's rules, 47 C.F.R § 25.114.