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:
INTELSAT 20		8/15/2012	N
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s):	j. Number of transponders offered on a common carrier basis:
6/12/2009		15 Years	
c. Construction Completion Date:		g. Total Number of Transponders:	k. Total Common Carrier Transponder Bandwidth:
3/1/2012		78	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:
4/1/2012	6/30/2012	3536 MHz	[X] GSO [ ] 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)		
5925	M	6675	M	R	Fixed Satellite Service
3700	M	4200	M	T	Fixed Satellite Service
13750	M	14500	M	R	Fixed Satellite Service
10950	M	11200	M	T	Fixed Satellite Service
11450	M	11700	M	T	Fixed Satellite Service
12500	M	12750	M	T	Fixed Satellite Service
29500	M	30000	M	R	Fixed Satellite Service
29500	M	30000	M	R	Fixed Satellite Service
19700	M	20200	M	T	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W):	b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection:
68.5 E			REPLACE EXISTING INTELSAT 7 AND 10 SPACECRAFT
Longitudinal Tolerance or E/W Station-Keeping: d. Toward West: 0.05 Degrees e. Toward East: 0.05 Degrees	f. Inclination Excursion or N/S Station-Keeping Tolerance: 0.05 Degrees	Range of orbital are in which adequate service can be provided (Optional): Degrees E/W g. Westernmost: h. Easternmost:	
i. Reason for service are selection (Optional):			

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S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System:

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

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

S4d. Orbit Epoch Date:

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

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)

NO NGSO DATA FILED

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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	S		EUROPE, AFRICA, ASIA, AUSTRALIA
2	S		SOUTHERN AFRICA
3	S		EUROPE, MIDDLE EAST, CENTRAL ASIA, NORTHERN AFRICA
4	S		EUROPE, RUSSIA
5	S		EUROPE, AFRICA
6	S		AFGHANISTAN, PAKISTAN
7	S		GLOBAL

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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
LHUL	R	28	18	0.2	0.45	30	N	0	1				574	0.4	-111.9	35	1.16
LVUL	R	27.8	17.8	0.2	0.45	30	N	90	1				554	0.3	-111.6	35	1.16
SHUL	R	39.4	33.4	0.2	0.45	30	N	0	2				753	10.6	-107.4	26	1
SVUL	R	39.4	33.4	0.2	0.45	30	N	90	2				758	10.6	-107.4	26	1
EHUL	R	32.5	26.5	0.2	0.45	30	N	0	3				686	4.1	-102.3	26	1
EVUL	R	32.4	26.4	0.2	0.45	30	N	90	3				691	4	-102.3	26	1
RHUL	R	32.1	28.1	0.2	0.45	30	N	0	4				719	3.6	-98.7	26	1
RVUL	R	32.2	28.2	0.2	0.45	30	N	90	4				715	3.6	-98.7	26	1
AHUL	R	30.4	24.4	0.2	0.45	30	N	0	5				712	1.9	-99.4	26	1
AVUL	R	30.3	24.3	0.2	0.45	30	N	90	5				707	1.8	-99.4	26	1
KRUL	R	36.7	30.7	0.2	0.45	20	N		6				1454	5.1	-90.8	14	0.25
KLUL	R	36.7	30.7	0.2	0.45	20	N		6				1454	5.1	-90.8	14	0.25
LHDL	T	25.6	15.6	0.2	0.45	30	N	0	1	2.8	33.9	40.9					
LVDL	T	25.8	15.8	0.2	0.45	30	N	90	1	2.7	34.7	41.2					
SHDL	T	38.4	32.4	0.2	0.45	30	N	0	2	3	56.2	55.9					
SVDL	T	38.4	32.4	0.2	0.45	30	N	90	2	3	56.2	55.9					
EHDL	T	31.3	25.3	0.2	0.45	30	N	0	3	3	75.9	50.1					
EVDL	T	31.3	25.3	0.2	0.45	30	N	90	3	3.1	74.1	50					
RHDL	T	31.3	27.3	0.2	0.45	30	N	0	4	2.9	77.6	50.2					
RVDL	T	31.2	27.2	0.2	0.45	30	N	90	4	2.9	77.6	50.1					
AHDL	T	30.6	24.6	0.2	0.45	30	N	0	5	3.3	70.8	49.1					
AVDL	T	30.5	24.5	0.2	0.45	30	N	90	5	3.3	70.8	49					
KRDL	T	33.5	29.5	0.2	0.45	26	N		6	3.1	60.3	51.3					
KLDL	T	33.5	29.5	0.2	0.45	26	N		6	3.1	60.3	51.3					
CGV	R	22.5	16.5	0.2	0.45		N	90	7				3651	-13.1	-111.8		
CZ1L	R	3	-3	0.2	0.45		N		7				2968	-31.7	-93.2		
CZ2L	R	8	2	0.2	0.45		N		7				10290	-32.1	-92.8		
TGV	T	22.1	16.1	0.2	0.45		N	90	7	5.5	0.2	13.9					
TZ1L	T	3	-3	0.2	0.45		N		7	2.8	18.4	15.6					

TZ2L	T	8	2	0.2	0.45		N		7	8	5.5	15.4					
UPC	T	19.2	16.2	0.2	0.45		N		7	5.3	0.2	11					
UPK	T	19.5	13.5	0.2	0.45		N		7	4.7	0.4	19.5					

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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
LHUL	R	C	68.5		LHUL.gxt					
LVUL	R	C	68.5		LVUL.gxt					
SHUL	R	C	68.5		SHUL.gxt					
SVUL	R	C	68.5		SVUL.gxt					
EHUL	R	C	68.5		EHUL.gxt					
EVUL	R	C	68.5		EVUL.gxt					
RHUL	R	C	68.5		RHUL.gxt					
RVUL	R	C	68.5		RVUL.gxt					
AHUL	R	C	68.5		AHUL.gxt					
AVUL	R	C	68.5		AVUL.gxt					
KRUL	R	C	68.5		KRUL.gxt					
KLUL	R	C	68.5		KLUL.gxt					
LHDL	T	C	68.5		LHDL.gxt	-152.4	-152.3	-152.1	-152	-151.9
LVDL	T	C	68.5		LVDL.gxt	-152.1	-152	-151.8	-151.7	-151.6
SHDL	T	C	68.5		SHDL.gxt	-150	-147.5	-145	-142.5	-140
SVDL	T	C	68.5		SVDL.gxt	-150	-147.5	-145	-142.5	-140
EHDL	T	C	68.5		EHDL.gxt	-150	-147.5	-145	-142.8	-142.7
EVDL	T	C	68.5		EVDL.gxt	-150	-147.5	-145	-142.9	-142.8
RHDL	T	C	68.5		RHDL.gxt	-150	-147.5	-145	-142.7	-142.6
RVDL	T	C	68.5		RVDL.gxt	-150	-147.5	-145	-142.8	-142.7
AHDL	T	C	68.5		AHDL.gxt	-148	-145.5	-143.9	-143.8	-143.7
AVDL	T	C	68.5		AVDL.gxt	-148	-145.5	-144	-143.9	-143.8
KLDL	T	C	68.5		KLDL.gxt	-138.2	-138.1	-138	-137.9	-137.7
CGV	R	C	68.5		CGV.gxt					
CZ1L	R	C	68.5	CZ1L.pdf						
CZ2L	R	C	68.5	CZ2L.pdf						
TGV	T	C	68.5		TGV.gxt	-167.3	-167.2	-167.1	-167	-166.9
TZ1L	T	C	68.5	TZ1L.pdf		-165.6	-165.5	-165.4	-165.3	-165.2

TZ2L	T	C	68.5	TZ2L.pdf		-165.8	-165.7	-165.6	-165.5	-165.4
UPC	T	C	68.5		UPCR.gxt	-160.2	-160.1	-160	-159.9	-159.8
UPK	T	C	68.5		UPKR.gxt	-151.7	-151.6	-151.5	-151.4	-151.3
KRUL	R	X	68.5		KRUX.gxt					
KLUL	R	X	68.5		KLUX.gxt					
KRDL	T	X	68.5		KRDX.gxt					
KLDL	T	X	68.5		KLDX.gxt					
KRDL	T	C	68.5		KRDL.gxt	-138.2	-138.1	-138	-137.9	-137.7

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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)
CU001	54000	R	5955	H	C
CU003	54000	R	6015	H	C
CU005	54000	R	6075	H	C
CU007	60000	R	6140	H	C
CU009	27000	R	6199	H	C
CO011	27000	R	6229	H	C
CU013	27000	R	6259	H	C
CU015	27000	R	6289	H	C
CU017	27000	R	6319	H	C
CU019	27000	R	6349	H	C
CU021	27000	R	6379	H	C
CU023	27000	R	6409	H	C
CU025	36000	R	6450	H	C
CU027	36000	R	6490	H	C
CU029	36000	R	6530	H	C
CU031	36000	R	6570	H	C
CU033	36000	R	6610	H	C
CU035	36000	R	6650	H	C
CU002	54000	R	5955	V	C
CU004	54000	R	6015	V	C
CU006	54000	R	6075	V	C
CU008	60000	R	6140	V	C
CU010	27000	R	6199	V	C
CU012	27000	R	6229	V	C
CU014	27000	R	6259	V	C
CU016	27000	R	6289	V	C
CU018	27000	R	6319	V	C
CU020	27000	R	6349	V	C
CU022	27000	R	6379	V	C
CU024	27000	R	6409	V	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
C0001	136.5	CU001	LHUL	CD001	LHDL
C0003	136.5	CU003	LHUL	CD003	LHDL
C0005	136.5	CU005	LHUL	CD005	LHDL
C0007	136.5	CU007	LHUL	CD007	LHDL
C0009	136.5	CU009	LHUL	CD009	LHDL
C0011	136.5	CO011	LHUL	CD011	LHDL
C0013	136.5	CU013	LHUL	CD013	LHDL
C0015	136.5	CU015	LHUL	CD015	LHDL
C0017	136.5	CU017	LHUL	CD017	LHDL
C0019	136.5	CU019	LHUL	CD019	LHDL
C0021	136.5	CU021	LHUL	CD021	LHDL
C0023	136.5	CU023	LHUL	CD023	LHDL
C0002	136.5	CU002	LVUL	CD002	LVDL
C0004	136.5	CU004	LVUL	CD004	LVDL
C0006	136.5	CU006	LVUL	CD006	LVDL
C0008	136.5	CU008	LVUL	CD008	LVDL
C0010	136.5	CU010	LVUL	CD010	LVDL
C0012	136.5	CU012	LVUL	CD012	LVDL
C0014	136.5	CU014	LVUL	CD014	LVDL
C0016	136.5	CU016	LVUL	CD016	LVDL
C0018	136.5	CU018	LVUL	CD018	LVDL
C0020	136.5	CU020	LVUL	CD020	LVDL
C0022	136.5	CU022	LVUL	CD022	LVDL
C0024	136.5	CU024	LVUL	CD024	LVDL
CC002	136.6	CU001	LHUL	CD002	LVDL
CC004	136.6	CU003	LHUL	CD004	LVDL
CC006	136.6	CU005	LHUL	CD006	LVDL
CC008	136.6	CU007	LHUL	CD008	LVDL
CC001	136.4	CU002	LVUL	CD001	LHDL
CC003	136.4	CU004	LVUL	CD003	LHDL

CU026	36000	R	6450	V	C
CU028	36000	R	6490	V	C
CU030	36000	R	6530	V	C
CU032	36000	R	6570	V	C
CU034	36000	R	6610	V	C
CU036	36000	R	6650	V	C
CD001	54000	T	3730	H	C
CD003	54000	T	3790	H	C
CD005	54000	T	3850	H	C
CD007	60000	T	3915	H	C
CD009	27000	T	3974	H	C
CD011	27000	T	4004	H	C
CD013	27000	T	4034	H	C
CD015	27000	T	4064	H	C
CD017	27000	T	4094	H	C
CD019	27000	T	4124	H	C
CD021	27000	T	4154	H	C
CD023	27000	T	4184	H	C
CD002	54000	T	3730	V	C
CD004	54000	T	3790	V	C
CD006	54000	T	3850	V	C
CD008	60000	T	3915	V	C
CD010	27000	T	3974	V	C
CD012	27000	T	4004	V	C
CD014	27000	T	4034	V	C
CD016	27000	T	4064	V	C
CD018	27000	T	4094	V	C
CD020	27000	T	4124	V	C
CD022	27000	T	4154	V	C
CD024	27000	T	4184	V	C
KU001	36000	R	13774	H	C
KU003	36000	R	13814	H	C
KU005	36000	R	13854	H	C
KU007	36000	R	13894	H	C
KU009	36000	R	13934	H	C
KU011	36000	R	13974	H	C
KU013	36000	R	14024	H	C
KU015	36000	R	14064	H	C
KU017	36000	R	14104	H	C

CC005	136.4	CU006	LVUL	CD005	LHDL
CC007	136.4	CU008	LVUL	CD007	LHDL
K0001	129.9	KU001	SHUL	KD001	SVDL
K0003	129.9	KU003	SHUL	KD003	SVDL
K0005	129.9	KU005	SHUL	KD005	SVDL
K0007	129.9	KU007	SHUL	KD007	SVDL
K0009	129.9	KU009	SHUL	KD009	SVDL
K0011	129.9	KU011	SHUL	KD011	SVDL
K0013	129.9	KU013	SHUL	KD013	SVDL
K0015	129.9	KU015	SHUL	KD015	SVDL
K0017	129.9	KU017	SHUL	KD017	SVDL
K0019	129.9	KU019	SHUL	KD019	SVDL
K0021	129.9	KU021	SHUL	KD021	SVDL
K0023	129.9	KU023	SHUL	KD023	SVDL
K0002	129.9	KU002	SVUL	KD002	SHDL
K0004	129.9	KU004	SVUL	KD004	SHDL
K0006	129.9	KU006	SVUL	KD006	SHDL
K0008	129.9	KU008	SVUL	KD008	SHDL
K0010	129.9	KU010	SVUL	KD010	SHDL
K0012	129.9	KU012	SVUL	KD012	SHDL
K0014	129.9	KU014	SVUL	KD014	SHDL
K0016	129.9	KU016	SVUL	KD016	SHDL
K0018	129.9	KU018	SVUL	KD018	SHDL
K0020	129.9	KU020	SVUL	KD020	SHDL
K0022	129.9	KU022	SVUL	KD022	SHDL
K0024	129.9	KU024	SVUL	KD024	SHDL
K0025	132.1	KU025	AHUL	KD025	AVDL
K0027	132.1	KU027	AHUL	KD027	AVDL
K0029	132.1	KU029	AHUL	KD029	AVDL
K0031	132.1	KU031	AHUL	KD031	AVDL
K0033	132.1	KU033	AHUL	KD033	AVDL
K0035	132.1	KU035	AHUL	KD035	AVDL
K0026	132.2	KU026	AVUL	KD026	AHDL
K0028	132.2	KU028	AVUL	KD028	AHDL
K0030	132.2	KU030	AVUL	KD030	AHDL
K0032	132.2	KU032	AVUL	KD032	AHDL
K0034	132.2	KU034	AVUL	KD034	AHDL
K0036	132.2	KU036	AVUL	KD036	AHDL
K0037	132.9	KU037	EHUL	KD037	EVDL

KU019	36000	R	14144	H	C
KU021	36000	R	14184	H	C
KU023	36000	R	14224	H	C
KU025	36000	R	14270	H	C
KU027	36000	R	14310	H	C
KU029	36000	R	14350	H	C
KU031	36000	R	14390	H	C
KU033	36000	R	14430	H	C
KU035	36000	R	14470	H	C
KU037	72000	R	13794	H	C
KU039	72000	R	13874	H	C
KU041	72000	R	13954	H	C
KU043	36000	R	14024	H	C
KU045	36000	R	14064	H	C
KU047	36000	R	14104	H	C
KU049	36000	R	14144	H	C
KU051	36000	R	14184	H	C
KU053	36000	R	14224	H	C
KU002	36000	R	13774	V	C
KU004	36000	R	13814	V	C
KU006	36000	R	13854	V	C
KU008	36000	R	13894	V	C
KU010	36000	R	13934	V	C
KU012	36000	R	13974	V	C
KU014	36000	R	14024	V	C
KU016	36000	R	14064	V	C
KU018	36000	R	14104	V	C
KU020	36000	R	14144	V	C
KU022	36000	R	14184	V	C
KU024	36000	R	14224	V	C
KU026	36000	R	14270	V	C
KU028	36000	R	14310	V	C
KU030	36000	R	14350	V	C
KU032	36000	R	14390	V	C
KU034	36000	R	14430	V	C
KU036	36000	R	14470	V	C
KU038	72000	R	13794	V	C
KU040	72000	R	13874	V	C
KU042	72000	R	13954	V	C

K0039	132.9	KU039	EHUL	KD039	EVDL
K0041	132.9	KU041	EHUL	KD041	EVDL
K0043	132.9	KU043	EHUL	KD043	EVDL
K0045	132.9	KU045	EHUL	KD045	EVDL
K0047	132.9	KU047	EHUL	KD047	EVDL
K0049	132.9	KU049	EHUL	KD049	EVDL
K0051	132.9	KU051	EHUL	KD051	EVDL
K0053	132.9	KU053	EHUL	KD053	EVDL
K0038	133.1	KU038	EVUL	KD038	EHDL
K0040	133.1	KU040	EVUL	KD040	EHDL
K0042	133.1	KU042	EVUL	KD042	EHDL
K0044	133.1	KU044	EVUL	KD044	EHDL
K0046	133.1	KU046	EVUL	KD046	EHDL
K0048	133.1	KU048	EVUL	KD048	EHDL
K0050	133.1	KU050	EVUL	KD050	EHDL
K0052	133.1	KU052	EVUL	KD052	EHDL
K0054	133.1	KU054	EVUL	KD054	EHDL
EE043	133	KU044	EVUL	KD043	EVDL
EE045	133	KU046	EVUL	KD045	EVDL
EE047	133	KU048	EVUL	KD047	EVDL
EE049	133	KU050	EVUL	KD049	EVDL
EE051	133	KU052	EVUL	KD051	EVDL
EE053	133	KU054	EVUL	KD053	EVDL
EE044	133	KU043	EHUL	KD044	EHDL
EE046	133	KU045	EHUL	KD046	EHDL
EE048	133	KU047	EHUL	KD048	EHDL
EE050	133	KU049	EHUL	KD050	EHDL
EE052	133	KU051	EHUL	KD052	EHDL
EE054	133	KU053	EHUL	KD054	EHDL
ER037	133.1	KU037	EHUL	KD037	RVDL
ER039	133.1	KU039	EHUL	KD039	RVDL
ER041	133.1	KU041	EHUL	KD041	RVDL
ER038	133.2	KU038	EVUL	KD038	RHDL
ER040	133.2	KU040	EVUL	KD040	RHDL
ER042	133.2	KU042	EVUL	KD042	RHDL
RR037	129.8	KU037	RHUL	KD037	RVDL
RR039	129.8	KU039	RHUL	KD039	RVDL
RR041	129.8	KU041	RHUL	KD041	RVDL
RR038	129.7	KU038	RVUL	KD038	RHDL

KU044	36000	R	14024	V	C
KU046	36000	R	14064	V	C
KU048	36000	R	14104	V	C
KU050	36000	R	14144	V	C
KU052	36000	R	14184	V	C
KU054	36000	R	14224	V	C
KD001	36000	T	10970	V	C
KD003	36000	T	11010	V	C
KD005	36000	T	11050	V	C
KD007	36000	T	11090	V	C
KD009	36000	T	11130	V	C
KD011	36000	T	11170	V	C
KD013	36000	T	11474	V	C
KD015	36000	T	11514	V	C
KD017	36000	T	11554	V	C
KD019	36000	T	11594	V	C
KD021	36000	T	11634	V	C
KD023	36000	T	11674	V	C
KD025	36000	T	12522	V	C
KD027	36000	T	12562	V	C
KD029	36000	T	12602	V	C
KD031	36000	T	12642	V	C
KD033	36000	T	12682	V	C
KD035	36000	T	12722	V	C
KD037	72000	T	10990	V	C
KD039	72000	T	11070	V	C
KD041	72000	T	11150	V	C
KD043	36000	T	11474	V	C
KD045	36000	T	11514	V	C
KD047	36000	T	11554	V	C
KD049	36000	T	11594	V	C
KD051	36000	T	11634	V	C
KD053	36000	T	11674	V	C
KD002	36000	T	10970	H	C
KD004	36000	T	11010	H	C
KD006	36000	T	11050	H	C
KD008	36000	T	11090	H	C
KD010	36000	T	11130	H	C
KD012	36000	T	11170	H	C

RR040	129.7	KU040	RVUL	KD040	RHDL
RR042	129.7	KU042	RVUL	KD042	RHDL
RE037	129.6	KU037	RHUL	KD037	EVDL
RE039	129.6	KU039	RHUL	KD039	EVDL
RE041	129.6	KU041	RHUL	KD041	EVDL
RE038	129.6	KU038	RVUL	KD038	EHDL
RE040	129.6	KU040	RVUL	KD040	EHDL
RE042	129.6	KU042	RVUL	KD042	EHDL
A0001	122.8	AU001	KRUL	AD001	KLDL
A0002	122.8	AU002	KLUL	AD002	KRDL
A0011	122.8	AU001	KRUL	AD002	KRDL
A0022	122.8	AU002	KLUL	AD001	KLDL
LS002	135.8	CU026	LVUL	KD002	SHDL
LS004	135.8	CU028	LVUL	KD004	SHDL
LS006	135.8	CU030	LVUL	KD006	SHDL
LS008	135.8	CU032	LVUL	KD008	SHDL
LS010	135.8	CU034	LVUL	KD010	SHDL
LS012	135.8	CU036	LVUL	KD012	SHDL
LS001	135.9	CU025	LHUL	KD001	SVDL
LS003	135.9	CU027	LHUL	KD003	SVDL
LS005	135.9	CU029	LHUL	KD005	SVDL
LS007	135.9	CU031	LHUL	KD007	SVDL
LS009	135.9	CU033	LHUL	KD009	SVDL
LS011	135.9	CU035	LHUL	KD011	SVDL

KD014	36000	T	11474	H	C
KD016	36000	T	11514	H	C
KD018	36000	T	11554	H	C
KD020	36000	T	11594	H	C
KD022	36000	T	11634	H	C
KD024	36000	T	11674	H	C
KD026	36000	T	12522	H	C
KD028	36000	T	12562	H	C
KD030	36000	T	12602	H	C
KD032	36000	T	12642	H	C
KD034	36000	T	12682	H	C
KD036	36000	T	12722	H	C
KD038	72000	T	10990	H	C
KD040	72000	T	11070	H	C
KD042	72000	T	11150	H	C
KD044	36000	T	11474	H	C
KD046	36000	T	11514	H	C
KD048	36000	T	11554	H	C
KD050	36000	T	11594	H	C
KD052	36000	T	11634	H	C
KD054	36000	T	11674	H	C
AU001	500000	R	29750	R	C
AU002	500000	R	29750	L	C
AD001	500000	T	19950	L	C
AD002	500000	T	19950	R	C
BCN1	25	T	3694	R	T
BCN2	25	T	11198	R	T
BCN3	25	T	11699.5	R	T
BCN4	25	T	12749	R	T
CMD1	1000	R	13750.5	V	T
CMD2	1000	R	14498	V	T
CMD3	1000	R	13750.5	L	T
CMD4	1000	R	14498	L	T
TLM1	500	T	12746.5	V	T
TLM2	500	T	12747	V	T
TLM3	500	T	12748	V	T
TLM4	500	T	12748.5	V	T
TLM5	500	T	12746.5	L	T
TLM6	500	T	12747	L	T

TLM7	500	T	12748	L	T
TLM8	500	T	12748.5	L	T

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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	500MG7W	500000	4	341318	0.5		3.4	14.1
D2	72M0G7W	72000	4	49150	0.5		3.4	15.2
D3	60M0G7W	60000	4	40958	0.5		3.4	13.2
D4	36M0G7W	36000	4	24575	0.5		3.4	19.7
D5	10M3G7W	10300	4	6000	0.5		3.9	16.7
D6	100KG7W	100	4	64	0.5		3	16.1
D7	1M45G7W	1450	2	512	0.5		3.4	16
D8	400KG7W	400	2	128	0.5		3.4	13.8

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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	36M0F3F	36000	TV/FM	1					PAL	15.6	1.5		10	23.2
A2	30M0F3F	30000	TV/FM	1					PAL	15.6	1.5		10	16.6

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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.		
C0001	LS011		A2	2	30000	IS20 Schedule	4000	58.4	12.8	22.8	26.7	36.7	-155.4	33
C0001	LS011	D3		1	60000	NOTE.txt		58.4	13.5	23.5	30.9	40.9	-162.2	21
C0001	LS011	D5		4	10300	NOTE.txt		49.4	10.5	20.5	21.3	31.3	-163.1	23.6
C0001	LS011	D6		450	100	NOTE.txt		49.4	-9.9	0.1	0.8	10.8	-164.1	23.6
C0001	LS011		A1	1	36000	NOTE.txt	4000	58.9	13.6	23.6	44	50	-142.1	27.9
C0001	LS011	D4		1	36000	NOTE.txt		51.5	13.8	23.8	42.8	48.8	-152.1	21.6
C0001	LS011	D5		3	10300	NOTE.txt		49.9	10	20	36.2	42.2	-152.2	21.6
C0001	LS011	D6		360	100	NOTE.txt		49.9	-10.3	-0.3	15.9	21.9	-153	21.6
C0001	LS011		A1	1	36000	NOTE.txt	4000	56.7	13	19	44	50	-142.1	28.1
C0001	LS011	D4		1	36000	NOTE.txt		56.7	11.8	17.8	42.8	48.8	-152.1	21.8
C0001	LS011	D5		3	10300	NOTE.txt		56.7	0.4	6.4	36.2	42.2	-152.2	21.8
C0001	LS011	D6		360	100	NOTE.txt		56.7	-19.9	-13.9	15.9	21.9	-153	21.8
C0001	LS011	D7		24	1450	NOTE.txt		56.7	-7.9	-1.9	27.9	33.9	-153.1	21.8
C0001	LS011	D8		90	400	NOTE.txt		46.2	-6.5	-0.5	18.8	24.8	-156.2	32.6
C0001	LS011		A1	2	36000	NOTE.txt	4000	56.7	17.9	23.9	39.8	45.8	-146.3	32.4
C0001	LS011	D2		1	72000	NOTE.txt		56.7	16.9	22.9	44	50	-153.9	21.6
C0001	LS011	D5		4	10300	NOTE.txt		56.7	2.8	8.8	33.6	39.6	-154.8	24.3
C0001	LS011	D6		512	100	NOTE.txt		56.7	-17.4	-11.4	13.4	19.4	-155.5	24.3
C0001	LS011	D7		32	1450	NOTE.txt		56.7	-5.4	0.6	25.4	31.4	-155.6	24.3
C0001	LS011	D8		180	400	NOTE.txt		48.8	-8	-2	14.9	20.9	-160.1	32.4
C0001	LS011		A1	2	36000	NOTE.txt	4000	56.7	14.9	20.9	41.9	45.9	-146.2	30.3
C0001	LS011	D2		1	72000	NOTE.txt		56.7	17.9	23.9	46.1	50.1	-153.8	21.6
C0001	LS011	D5		5	10300	NOTE.txt		56.7	10.7	16.7	35.6	39.6	-154.8	21.6
C0001	LS011	D6		526	100	NOTE.txt		56.7	-9.5	-3.5	15.4	19.4	-155.5	21.6
C0001	LS011	D7		28	1450	NOTE.txt		56.7	3.1	9.1	26.5	30.5	-156.5	21.6
C0001	LS011	D8		180	400	NOTE.txt		46.2	-1.2	4.8	13.2	17.2	-163.8	32.4
C0001	LS011		A1	2	36000	NOTE.txt	4000	56.7	14.5	18.5	41.9	45.9	-146.2	30.3
C0001	LS011	D2		1	72000	NOTE.txt		56.7	17.5	21.5	46.1	50.1	-153.8	21.6
C0001	LS011	D5		5	10300	NOTE.txt		56.7	11.3	15.3	35.6	39.6	-154.8	21.6

C0001	LS011	D6		527	100	NOTE.txt		56.7	-8.9	-4.9	15.4	19.4	-155.5	21.6
C0001	LS011	D7		33	1450	NOTE.txt		56.7	3.1	7.1	27.4	31.4	-155.6	21.6
C0001	LS011	D8		180	400	NOTE.txt		46.2	-0.7	3.3	13.1	17.1	-163.9	32.4
C0001	LS011		A1	2	36000	NOTE.txt	4000	56.7	18.6	22.6	39.8	45.8	-146.3	32.4
C0001	LS011	D2		1	72000	NOTE.txt		56.7	19.6	23.6	44	50	-153.9	21.6
C0001	LS011	D5		5	10300	NOTE.txt		56.7	4.3	8.3	33.4	39.4	-155	24.3
C0001	LS011	D6		542	100	NOTE.txt		56.7	-15.9	-11.9	13.1	19.1	-155.8	24.3
C0001	LS011	D7		34	1450	NOTE.txt		56.7	-3.9	0.1	25.1	31.1	-155.9	24.3
C0001	LS011	D8		180	400	NOTE.txt		48.8	-7.1	-3.1	14.1	20.1	-160.9	32.4
C0001	LS011		A1	1	36000	NOTE.txt	4000	60.3	16.2	22.2	43	49	-143.1	27.2
C0001	LS011	D4		1	36000	NOTE.txt		57	15.1	21.1	42.8	48.8	-152.1	22.8
C0001	LS011	D5		2	10300	NOTE.txt		57	3.2	9.2	35.4	41.4	-153	22.8
C0001	LS011	D6		264	100	NOTE.txt		57	-16.9	-10.9	15.3	21.3	-153.6	22.8
C0001	LS011	D7		16	1450	NOTE.txt		57	-4.9	1.1	27.3	33.3	-153.7	22.8
C0001	LS011	D8		90	400	NOTE.txt		46.5	-4.5	1.5	17.2	23.2	-157.8	33.6
C0001	LS011	D1		1	500000	NOTE.txt		58.9	22.7	28.7	47.3	51.3	-161	31.8
C0001	LS011	D5		43	10300	NOTE.txt		58.9	5.3	11.3	30.9	34.9	-159.5	30.8
C0001	LS011	D6		4757	100	NOTE.txt		58.9	-15.1	-9.1	10.5	14.5	-160.3	30.9
C0001	LS011	D7		305	1450	NOTE.txt		57.5	-1.8	4.2	22.5	26.5	-160.5	31
C0001	LS011	D8		1250	400	NOTE.txt		56.9	-7.8	-1.8	15.8	19.8	-161.2	31.7

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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: 3400 INTERNATIONAL DRIVE, NW			
S14b. City: WASHINGTON DC	S14c. County:	S14d. State/Country DC	S14e. Zip Code: 20008
S14f. Telephone Number: 202-944-7701	S14g. Call Sign of Control Station (if appropriate):		

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a: Mass of spacecraft without fuel (kg): 3065	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 2635		
S15c. Mass of spacecraft and fuel at launch (kg): 5700	S15f. Length (m): 32.4	S15i. Payload: 0.83
S15d. Mass of fuel, in orbit, at beginning of life (kg): 229	S15g. Width (m): 8.1	S15j. Bus: 0.81
S15e. Deployed Area of Solar Array (square meters): 89.2	S15h. Height (m): 9.3	S15k. Total: 0.672

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): 13750	(f): 13750	(k): 13750	(p): 13750
Bus (Watts):	(b): 3262	(g): 1753	(l): 3262	(q): 1753
Total (Watts):	(c): 17012	(h): 15503	(m) 17012	(r): 15503
Solar Array (Watts):	(d): 18891	(i): 17048	(n): 18717	(s): 16891
Depth of Battery Discharge (%):	(e) 71.6 %	(j) %	(o) 74.4 %	(t) %

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?		**YES**		**NO**	X	**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.