

**S1. GENERAL INFORMATION** Complete for all satellite applications.

a. Space Station or Satellite Network Name: DIRECTV 12		e. Estimated Date of Placement into Service: 1/31/2010		i. Will the space station(s) operate on a Common Carrier Basis: N	
b. Construction Commencement Date: 9/1/2004		f. Estimated Lifetime of Satellite(s): 15 Years		j. Number of transponders offered on a common carrier basis: 0	
c. Construction Completion Date: 10/8/2009		g. Total Number of Transponders: 139		k. Total Common Carrier Transponder Bandwidth: 0 MHz	
d1. Est Launch Date Begin: 10/15/2009	d2. Est Launch Date End: 11/14/2009	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 5004 MHz		i. Orbit Type: Mark all boxes that apply: <input checked="" type="checkbox"/> GSO <input type="checkbox"/> 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)		
18.3	G	18.8	G	T	Direct to Home in the Fixed Fixed Satellite Service
28.35	G	28.6	G	R	Fixed Satellite Service
29.25	G	29.5	G	R	Fixed Satellite Service
18.3	G	18.8	G	T	Fixed Satellite Service
19.7	G	20.2	G	T	Direct to Home in the Fixed Fixed Satellite Service
19.7	G	20.2	G	T	Fixed Satellite Service
29.5	G	30.0	G	R	Fixed Satellite Service

**S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:**

a. Nominal Orbital Longitude (Degrees E/W): 102.765 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection:			
Longitudinal Tolerance or E/W Station-Keeping:		f. Inclination Excursion or N/S Station-Keeping Tolerance:				Range of orbital are in which adequate service can be provided (Optional): <u>      Degrees      </u> <u>      E/W      </u>	
d. Toward West:	0.025 Degrees	e. Toward East:					
i. Reason for service are selection (Optional):		0.05 Degrees					

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S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System:

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

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

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 initial 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.
CONUS+	S		CONUS + Alaska
CRBC	S		Area around Castle Rock, CO
LABC	S		Area around Los Angeles, CA
NWUF	S		Area around Moxee, WA
NEUF	S		Area around New Hampton, NH
MWUF	S		Area around Oakdale, MN
SWUF	S		Area around Tuscon, AZ
CMD	S		Colorado Springs, CO
CONUS	S		CONUS
HAWAII	S		Hawaii

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

(a) Beam ID	(b) T/R Mode	(c) Isotropic Antenna Gain		(e) Pointing Error (Degrees)	(f) Rotational Error (Degrees)	(g) Min. Cross- Polar Iso- lation (dB)	(h) Polar- ization Switch- able? (Y/N)	(i) Polarization Alignment Rel. Equatorial Plane (Degrees)	(j) Service Area ID	Transmit			Receive			Input Attenuator (dB)		
		(c) Peak (dBi)	(d) Edge (dBi)							(k) Input Losses (dB)	(l) Effective Output Power (W)	(m) Max. EIRP (dBW)	(n) System Noise Temp (k)	(o) G/T Max. Gain Pt. (db/K)	(p) Min. Saturation Flux Density (dBW/m2)	(q) Max. Value	(r) Step Size	
																		A1B7
A1B8	T	48.9	39.9	0.062		27	N		CONUS	4.2	11.5	59.5						
A1B9	T	49.1	40.1	0.062		27	N		CONUS	4.3	11.1	59.5						
A1BA	T	48.9	39.9	0.062		27	N		CONUS	4.2	11.4	59.5						
A1BB	T	48.8	39.8	0.062		27	N		CONUS	4.1	11.8	59.5						
A1BC	T	48.5	39.5	0.062		27	N		CONUS	3.8	12.6	59.5						
A2B1	T	48.5	39.5	0.062		27	N		CONUS	3.7	12.7	59.5						
A2B2	T	48.4	39.4	0.062		27	N		CONUS	3.7	12.8	59.5						
A2B3	T	48.4	39.4	0.062		27	N		CONUS	3.7	12.8	59.5						
A2B4	T	48.5	39.5	0.062		27	N		CONUS	3.7	12.7	59.5						
A2B5	T	48.5	39.5	0.062		27	N		CONUS	3.7	12.7	59.5						
A2B6	T	48.4	39.4	0.062		27	N		CONUS	3.7	12.8	59.5						
A2B7	T	48.5	39.5	0.062		27	N		CONUS	3.8	12.5	59.5						
A2B8	T	48.5	39.5	0.062		27	N		CONUS	3.8	12.5	59.5						
A2B9	T	49	40	0.062		27	N		CONUS	4.3	11.2	59.5						
A2BA	T	48.8	39.8	0.062		27	N		CONUS	4.1	11.6	59.5						
A2BB	T	48.9	39.9	0.062		27	N		CONUS	4.1	11.6	59.5						
A2BC	T	48.6	39.6	0.062		27	N		CONUS	3.9	12.2	59.5						
A2BD	T	48.5	39.5	0.062		27	N		CONUS	3.8	12.6	59.5						
A3B1	T	48.5	39.5	0.062		27	N		CONUS	3.8	12.5	59.5						
A3B2	T	49.1	40.1	0.062		27	N		CONUS	4.3	11	59.5						
A3B3	T	48.8	39.8	0.062		27	N		CONUS	4	11.9	59.5						
A3B4	T	48.7	39.7	0.062		27	N		CONUS	3.9	12.1	59.5						
A3B5	T	48.7	39.7	0.062		27	N		CONUS	4	11.9	59.5						
A3B6	T	49.3	40.3	0.062		27	N		CONUS	4.6	10.5	59.5						
A3B7	T	49.2	40.2	0.062		27	N		CONUS	4.5	10.7	59.5						
A3B8	T	49.1	40.1	0.062		27	N		CONUS	4.3	11.1	59.5						
A3B9	T	49.1	40.1	0.062		27	N		CONUS	4.4	10.9	59.5						
A3BA	T	48.9	39.9	0.062		27	N		CONUS	4.2	11.5	59.5						

A3BB	T	47.6	38.6	0.062		27	N		HAWAII	2.9	15.5	59.5					
A4B1	T	48.7	39.7	0.062		27	N		CONUS	3.9	12.1	59.5					
A4B2	T	49.1	40.1	0.062		27	N		CONUS	4.4	11	59.5					
A4B3	T	48.7	39.7	0.062		27	N		CONUS	4	11.9	59.5					
A4B4	T	48.9	39.8	0.062		27	N		CONUS	4.2	11.5	59.5					
A4B5	T	48.9	39.9	0.062		27	N		CONUS	4.1	11.6	59.5					
A4B6	T	48.9	39.9	0.062		27	N		CONUS	4.2	11.4	59.5					
A4B7	T	49.4	40.4	0.062		27	N		CONUS	4.7	10.3	59.5					
A4B8	T	49.2	40.2	0.062		27	N		CONUS	4.5	10.7	59.5					
A4B9	T	49.4	40.4	0.062		27	N		CONUS	4.7	10.1	59.5					
A4BA	T	49.1	40.1	0.062		27	N		CONUS	4.4	10.8	59.5					
A4BB	T	49	40	0.062		27	N		CONUS	4.3	11.1	59.5					
A4BC	T	48.8	39.8	0.062		27	N		CONUS	4.1	11.6	59.5					
A4BD	T	48.6	39.6	0.062		27	N		CONUS	3.9	12.2	59.5					
TLM	T	24	22	0.1		27	N		CONUS	2	14.4	35.6					
UL1	R	50.8	48.8	0.1		27	N		LABC				1000	20.8	-105	19	1
UL2	R	51.2	49.2	0.1		27	N		CRBC				1000	21.2	-105	19	1
DL1	T	36.3	28.3	0.1		27	N		CONUS+	1	2.2	58.3					
CMD	R	38.5	37.5	0.1		27	N		CMD				17783	-4			
UL3	R	51	49	0.1		27	N		SWUF				1000	21	-105	19	1
UL4	R	50.8	48.8	0.1		27	N		NWUF				1000	20.8	-105	19	1
UL5	R	49.7	47.7	0.1		27	N		NEUF				1000	19.7	-105	19	1
UL6	R	50.9	48.9	0.1		27	N		MWUF				1000	20.9	-105	19	1
A1B1	T	48.5	39.5	0.062		27	N		CONUS	3.8	12.5	59.5					
A1B2	T	48.8	39.8	0.062		27	N		CONUS	4.1	11.7	59.5					
A1B3	T	48.6	39.6	0.062		27	N		CONUS	3.9	12.2	59.5					
A1B4	T	49.1	40.1	0.062		27	N		CONUS	4.4	10.9	59.5					
A1B5	T	48.6	39.6	0.062		27	N		CONUS	3.9	12.2	59.5					
A1B6	T	48.8	39.8	0.062		27	N		CONUS	4	11.9	59.5					



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S9. SPACE STATION CHANNELS For each frequency channel provide: S10. SPACE STATION TRANSPONDERS For each transponder 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)
TC09	36000	T	19890	R	C
TC10	36000	T	19890	L	C
TC11	36000	T	19930	R	C
TC12	36000	T	19930	L	C
TC13	36000	T	19970	R	C
TC14	36000	T	19970	L	C
TC15	36000	T	20010	R	C
TC16	36000	T	20010	L	C
TC17	36000	T	20050	R	C
TC18	36000	T	20050	L	C
TC19	36000	T	20090	R	C
TC20	36000	T	20090	L	C
TC21	36000	T	20130	R	C
TC22	36000	T	20130	L	C
TC23	36000	T	20170	R	C
TC24	36000	T	20170	L	C
TS15	36000	T	18604	R	C
TS16	36000	T	18604	L	C
TS17	36000	T	18648	R	C
TS18	36000	T	18648	L	C
TS19	36000	T	18692	R	C
TS20	36000	T	18692	L	C
TS21	36000	T	18732	R	C
TS22	36000	T	18732	L	C
TS23	36000	T	18776	R	C
TS24	36000	T	18776	L	C
RS21	36000	R	29437	R	C
RS22	36000	R	29437	L	C
RS23	36000	R	29481	R	C
RS24	36000	R	29481	L	C

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
NAT9	114	RC09	UL1	TC09	DL1
NAT10	114	RC10	UL1	TC10	DL1
NAT11	114	RC11	UL1	TC11	DL1
NAT12	114	RC12	UL1	TC12	DL1
NAT13	114	RC13	UL1	TC13	DL1
NAT14	114	RC14	UL1	TC14	DL1
NAT15	114	RC15	UL1	TC15	DL1
NAT16	114	RC16	UL1	TC16	DL1
NAT17	114	RC17	UL1	TC17	DL1
NAT18	114	RC18	UL1	TC18	DL1
NAT19	114	RC19	UL1	TC19	DL1
NAT20	114	RC20	UL1	TC20	DL1
NAT21	114	RC21	UL1	TC21	DL1
NAT22	114	RC22	UL1	TC22	DL1
NAT23	114	RC23	UL1	TC23	DL1
NAT24	114	RC24	UL1	TC24	DL1
CMD1		CMD1	CMD		
CMD2		CMD2	CMD		
SP11	102	RS16L	UL5	TS16	A1B1
SP12	102	RS19L	UL5	TS19	A1B1
SP13	102	RS20L	UL5	TS20	A1B1
SP21	102	RS16U	UL3	TS16	A1B2
SP22	102	RS19U	UL5	TS19	A1B2
SP23	102	RS20U	UL3	TS20	A1B2
SP31	102	RS16U	UL5	TS16	A1B3
SP32	102	RS19U	UL6	TS19	A1B3
SP33	102	RS20U	UL5	TS20	A1B3
SP41	102	RS16L	UL6	TS16	A1B4
SP42	102	RS19L	UL6	TS19	A1B4
SP43	102	RS20L	UL6	TS20	A1B4

RC09	36000	R	29690	R	C
RC10	36000	R	29690	L	C
RC11	36000	R	29730	R	C
RC12	36000	R	29730	L	C
RC13	36000	R	29770	R	C
RC14	36000	R	29770	L	C
RC15	36000	R	29810	R	C
RC16	36000	R	29810	L	C
RC17	36000	R	29850	R	C
RC18	36000	R	29850	L	C
RC19	36000	R	29890	R	C
RC20	36000	R	29890	L	C
RC21	36000	R	29930	R	C
RC22	36000	R	29930	L	C
RC23	36000	R	29970	R	C
RC24	36000	R	29970	L	C
CMD1	1300	R	29255	L	T
CMD2	1300	R	29495	L	T
TLM1	106	T	18302.25	R	T
TLM1B	106	T	18302.25	L	T
TLM2	106	T	18302.75	L	T
RS15L	36000	R	28389	R	C
RS16L	36000	R	28389	L	C
RS17L	36000	R	28433	R	C
RS18L	36000	R	28433	L	C
RS19L	36000	R	28477	R	C
RS20L	36000	R	28477	L	C
RS21L	36000	R	28517	R	C
RS22L	36000	R	28517	L	C
RS23L	36000	R	28561	R	C
RS24L	36000	R	28561	L	C
RS15U	36000	R	29285	R	C
RS16U	36000	R	29285	L	C
RS17U	36000	R	29329	R	C
RS18U	36000	R	29329	L	C
RS19U	36000	R	29373	R	C
RS20U	36000	R	29373	L	C
RS21U	36000	R	29413	R	C
RS22U	36000	R	29413	L	C

SP51	102	RS16L	UL3	TS16	A1B5
SP52	102	RS19U	UL2	TS19	A1B5
SP53	102	RS20L	UL3	TS20	A1B5
SP61	102	RS16U	UL2	TS16	A1B6
SP62	102	RS19L	UL3	TS19	A1B6
SP71	102	RS16U	UL6	TS16	A1B7
SP72	102	RS19U	UL4	TS19	A1B7
SP73	102	RS20U	UL6	TS20	A1B7
SP81	102	RS16U	UL3	TS16	A1B8
SP82	102	RS19U	UL5	TS19	A1B8
SP83	102	RS20U	UL3	TS20	A1B8
TLM1				TLM1	TLM
TLM2				TLM2	TLM
SP91	102	RS16L	UL2	TS16	A1B9
SP92	102	RS19L	UL2	TS19	A1B9
SP93	102	RS20L	UL2	TS20	A1B9
SP101	102	RS16U	UL4	TS16	A1BA
SP102	102	RS19U	UL3	TS19	A1BA
SP103	102	RS20U	UL4	TS20	A1BA
SP111	102	RS16	UL1	TS16	A1BB
SP112	102	RS19	UL1	TS19	A1BB
SP131	102	RS15L	UL5	TS15	A2B1
SP132	102	RS23L	UL5	TS23	A2B1
SP133	102	RS24L	UL5	TS24	A2B1
SP141	102	RS15U	UL5	TS15	A2B2
SP142	102	RS23U	UL5	TS23	A2B2
SP143	102	RS24U	UL5	TS24	A2B2
SP161	102	RS15L	UL6	TS15	A2B4
SP162	102	RS23L	UL6	TS23	A2B4
SP163	102	RS24L	UL6	TS24	A2B4
SP171	102	RS15U	UL6	TS15	A2B5
SP172	102	RS23U	UL6	TS23	A2B5
SP173	102	RS24L	UL3	TS24	A2B5
SP181	102	RS15U	UL2	TS15	A2B6
SP182	102	RS23U	UL2	TS23	A2B6
SP183	102	RS24U	UL2	TS24	A2B6
SP201	102	RS15L	UL3	TS15	A2B8
SP202	102	RS23L	UL3	TS23	A2B8
SP203	102	RS24U	UL6	TS24	A2B8



RS23U	36000	R	29457	R	C
RS24U	36000	R	29457	L	C
RS15	36000	R	29309	R	C
RS16	36000	R	29309	L	C
RS17	36000	R	29353	R	C
RS18	36000	R	29353	L	C
RS19	36000	R	29397	R	C
RS20	36000	R	29397	L	C

SP211	102	RS15U	UL4	TS15	A2B9
SP212	102	RS23U	UL4	TS23	A2B9
SP213	102	RS24L	UL2	TS24	A2B9
SP221	102	RS15L	UL2	TS15	A2BA
SP222	102	RS23L	UL2	TS23	A2BA
SP223	102	RS24	UL1	TS24	A2BA
SP231	102	RS15U	UL3	TS15	A2BB
SP232	102	RS23U	UL3	TS23	A2BB
SP233	102	RS24U	UL3	TS24	A2BB
SP241	102	RS15L	UL4	TS15	A2BC
SP242	102	RS23L	UL4	TS23	A2BC
SP251	102	RS15	UL1	TS15	A2BD
SP252	102	RS23	UL1	TS23	A2BD
SP253	102	RS24U	UL4	TS24	A2BD
SP261	102	RS17L	UL5	TS17	A3B1
SP262	102	RS18U	UL5	TS18	A3B1
SP271	102	RS17U	UL5	TS17	A3B2
SP272	102	RS18L	UL5	TS18	A3B2
SP281	102	RS17L	UL6	TS17	A3B3
SP282	102	RS18L	UL6	TS18	A3B3
SP291	102	RS17L	UL2	TS17	A3B4
SP292	102	RS18L	UL2	TS18	A3B4
SP301	102	RS17U	UL6	TS17	A3B5
SP302	102	RS18U	UL6	TS18	A3B5
SP311	102	RS17U	UL2	TS17	A3B6
SP312	102	RS18U	UL2	TS18	A3B6
SP321	102	RS17U	UL3	TS17	A3B7
SP322	102	RS18U	UL3	TS18	A3B7
SP331	102	RS17L	UL4	TS17	A3B8
SP332	102	RS18L	UL4	TS18	A3B8
SP341	102	RS17	UL1	TS17	A3B9
SP342	102	RS18	UL1	TS18	A3B9
SP351	102	RS17U	UL4	TS17	A3BA
SP352	102	RS18U	UL4	TS18	A3BA
SP371	102	RS21U	UL5	TS21	A4B1
SP372	102	RS22L	UL5	TS22	A4B1
SP381	102	RS21L	UL5	TS21	A4B2
SP382	102	RS22U	UL5	TS22	A4B2
SP391	102	RS21L	UL6	TS21	A4B3

SP392	102	RS22L	UL6	TS22	A4B3
SP401	102	RS21L	UL2	TS21	A4B4
SP402	102	RS22L	UL2	TS22	A4B4
SP411	102	RS21U	UL6	TS21	A4B5
SP412	102	RS22U	UL6	TS22	A4B5
SP421	102	RS21U	UL2	TS21	A4B6
SP422	102	RS22U	UL2	TS22	A4B6
SP431	102	RS21U	UL3	TS21	A4B7
SP432	102	RS22U	UL3	TS22	A4B7
SP441	102	RS21L	UL4	TS21	A4B8
SP442	102	RS22L	UL4	TS22	A4B8
SP451	102	RS21L	UL3	TS21	A4B9
SP452	102	RS22L	UL3	TS22	A4B9
SP461	102	RS21L	UL3	TS21	A4BA
SP462	102	RS22L	UL3	TS22	A4BA
SP471	102	RS21	UL1	TS21	A4BB
SP472	102	RS22	UL1	TS22	A4BB
SP481	102	RS21U	UL4	TS21	A4BC
SP482	102	RS22U	UL4	TS22	A4BC
SP63	102	RS20U	UL2	TS20	A1B6
SP113	102	RS20	UL1	TS20	A1BB
SP121	102	RS16L	UL4	TS16	A1BC
SP122	102	RS19L	UL4	TS19	A1BC
SP123	102	RS20L	UL4	TS20	A1BC
SP151	102	RS15U	UL5	TS15	A2B3
SP152	102	RS23U	UL5	TS23	A2B3
SP153	102	RS24U	UL5	TS24	A2B3
SP191	102	RS15U	UL6	TS15	A2B7
SP192	102	RS23U	UL6	TS23	A2B7
SP193	102	RS24L	UL3	TS24	A2B7
SP243	102	RS24L	UL4	TS24	A2BC
SP361	102	RS17L	UL3	TS17	A3BB
SP362	102	RS18L	UL3	TS18	A3BB
SP491	102	RS21U	UL4	TS21	A4BD
SP492	102	RS22U	UL4	TS22	A4BD
TLM1B				TLM1B	TLM

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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)
M2	36M0G7W	36000	4	34.8	0.58		3.8	16
M3	36M0G7W	36000	4	38720	0.6453		4.7	16.9

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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						
CMD	1M30F9D	1300		1								9.5	21.7	
TLM	106KG9D	106		1								5.5	17.7	

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

Associated Transponder ID Range (a) Start    (b) End		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)			
		(c) Digital (Table S11)	(d) Analog (Table S12)					(i) Assoc. Stn. Max. Antenna Gain (dBi)	Assoc. Station Transmit Power (dBW) (j) Min.    (k) Max.		EIRP (dBW) (l) Min.    (m) Max.		(n) Max. Power Flux Density (dBW/m <sup>2</sup> /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
NAT9	NAT24	M3		1				66.3	7.6	13.6	52.3	58.3	-119.2	18.4
SP11	SP492	M2		1				66.3	7.6	13.6	53.5	59.5	-118	18.4
CMD1	CMD2		CMD	1				66.3	23.7	23.7	90	90		
TLM1	TLM2		TLM	1				24	-5.9	11.6	18.1	35.6	-126.4	31

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Page 10: TT and C

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: 1600 Forbes Way			
S14b. City: Long Beach	S14c. County: Los Angeles	S14d. State/Country CA	S14e. Zip Code: 90810
S14f. Telephone Number: 310 525 5590		S14g. Call Sign of Control Station (if appropriate):	

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 3556	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 2440		
S15c. Mass of spacecraft and fuel at launch (kg): 5996	S15f. Length (m): 47.9	S15i. Payload: 0.6
S15d. Mass of fuel, in orbit, at beginning of life (kg): 266	S15g. Width (m): 8.2	S15j. Bus: 0.85
S15e. Deployed Area of Solar Array (square meters): 77	S15h. Height (m): 7.3	S15k. Total: 0.51

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): 14330	(f): 14330	(k): 14330	(p): 14330
Bus (Watts):	(b): 1800	(g): 700	(l): 1800	(q): 700
Total (Watts):	(c): 16130	(h): 15030	(m): 16130	(r): 15030
Solar Array (Watts):	(d): 20050	(i): 17900	(n): 16900	(s): 15700
Depth of Battery Discharge (%):	(e) 79.5 %	(j) 0 %	(o) 79.5 %	(t) 0 %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> 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?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> 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?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> 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.**