

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: SES-1		e. Estimated Date of Placement into Service: 4/20/2010		i. Will the space station(s) operate on a Common Carrier Basis: N	
b. Construction Commencement Date: 2/1/2007		f. Estimated Lifetime of Satellite(s): 15 Years		j. Number of transponders offered on a common carrier basis: 0	
c. Construction Completion Date: 2/10/2010		g. Total Number of Transponders: 48		k. Total Common Carrier Transponder Bandwidth: 0 MHz	
d1. Est Launch Date Begin: 3/15/2010	d2. Est Launch Date End: 4/15/2010	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 1728 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)		
14.00	G	14.50	G	R	Fixed Satellite Service
11.70	G	12.20	G	T	Fixed Satellite Service
14.00	G	14.50	G	R	Direct to Home in the Fixed Fixed Satellite Service
11.70	G	12.20	G	T	Direct to Home in the Fixed Fixed Satellite Service
5.925	G	6.425	G	R	Fixed Satellite Service
3.70	G	4.20	G	T	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 101 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: Nominal orbital location is that of AMC-2 which will be replaced by SES-1			
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:	0.05 Degrees	e. Toward East:				g. Westernmost: h. Easternmost:	
i. Reason for service are selection (Optional):		0.05 Degrees					

**FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)**

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

**FEDERAL COMMUNICATIONS COMMISSION
 SATELLITE SPACE STATION AUTHORIZATIONS
 FCC Form 312 - Schedule S: (Technical and Operational Description)**

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.
K-DL	E		CONUS, Alaska, Hawaii, and parts of Caribbean.
K-UL	E		CONUS, Alaska, Hawaii and parts of Caribbean
C-DL	E		CONUS, Alaska, Hawaii, Mexico, and parts of Caribbean
C-UL	E		CONUS, Alaska, Hawaii, Mexico, and parts of Caribbean

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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 Iso- lation (dB)	(h) Polar- ization Switch- able? (Y/N)	(i) Polarization Alignment Rel. Equatorial Plane (Degrees)	(j) Service Area ID	Transmit			Receive				
										(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)	Input Attenuator (dB)	
		(q) Max. Value	(r) Step Size														
CRH	R	32.2	22.2	0.15	0	30	Y	0	C-UL				540	4.9	-100.2	21	1
CRV	R	32.5	22.5	0.15	0	30	Y	90	C-UL				590	4.8	-100.1	21	1
KRH	R	33.9	23.9	0.15	0	30	Y	0	K-UL				490	7	-100	21	1
KRV	R	33.6	23.6	0.15	0	30	Y	90	K-UL				470	6.9	-100	21	1
CTH	T	31.2	21.2	0.15	0	30	Y	0	C-DL	2.5	11	41.7					
CTV	T	31.1	21.1	0.15	0	30	Y	90	C-DL	2.5	11	41.6					
KTH	T	35.4	25.4	0.15	0	30	Y	0	K-DL	2.5	65	53.6					
KTV	T	34.4	24.4	0.15	0	30	Y	90	K-DL	2.5	50	52.3					

**FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)**

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
CRH	R	C	-101		CRH.gxt					
CRV	R	C	-101		CRV.gxt					
KRH	R	C	-101		KRH.gxt					
KRV	R	C	-101		KRV.gxt					
CTH	T	C	-101		CTH.gxt	-156.2	-155.6	-154.8	-153.7	-152.5
CTV	T	C	-101		CTV.gxt	-156.3	-155.7	-154.9	-153.8	-152.6
KTH	T	C	-101		KTH.gxt					
KTV	T	C	-101		KTV.gxt					

**FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)**

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)
KR01	36000	R	14020	H	C
KR02	36000	R	14040	V	C
KR03	36000	R	14060	H	C
KR04	36000	R	14080	V	C
KR05	36000	R	14100	H	C
KR06	36000	R	14120	V	C
KR07	36000	R	14140	H	C
KR08	36000	R	14160	V	C
KR09	36000	R	14180	H	C
KR10	36000	R	14200	V	C
KR11	36000	R	14220	H	C
KR12	36000	R	14240	V	C
KR13	36000	R	14260	H	C
KR14	36000	R	14280	V	C
KR15	36000	R	14300	H	C
KR16	36000	R	14320	V	C
KR17	36000	R	14340	H	C
KR18	36000	R	14360	V	C
KR19	36000	R	14380	H	C
KR20	36000	R	14400	V	C
KR21	36000	R	14420	H	C
KR22	36000	R	14440	V	C
KR23	36000	R	14460	H	C
KR24	36000	R	14480	V	C
KT01	36000	T	11720	V	C
KT02	36000	T	11740	H	C
KT03	36000	T	11760	V	C
KT04	36000	T	11780	H	C
KT05	36000	T	11800	V	C
KT06	36000	T	11820	H	C

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
K01	119.5	KR01	KRH	KT01	KTV
K03	119.5	KR03	KRH	KT03	KTV
K05	119.5	KR05	KRH	KT05	KTV
K07	119.5	KR07	KRH	KT07	KTV
K09	119.5	KR09	KRH	KT09	KTV
K11	119.5	KR11	KRH	KT11	KTV
K13	119.5	KR13	KRH	KT13	KTV
K15	119.5	KR15	KRH	KT15	KTV
K17	119.5	KR17	KRH	KT17	KTV
K19	119.5	KR19	KRH	KT19	KTV
K21	119.5	KR21	KRH	KT21	KTV
K23	119.5	KR23	KRH	KT23	KTV
K02	119.5	KR02	KRV	KT02	KTH
K04	119.5	KR04	KRV	KT04	KTH
K06	119.5	KR06	KRV	KT06	KTH
K08	119.5	KR08	KRV	KT08	KTH
K10	119.5	KR10	KRV	KT10	KTH
K12	119.5	KR12	KRV	KT12	KTH
K14	119.5	KR14	KRV	KT14	KTH
K16	119.5	KR16	KRV	KT16	KTH
K18	119.5	KR18	KRV	KT18	KTH
K20	119.5	KR20	KRV	KT20	KTH
K22	119.5	KR22	KRV	KT22	KTH
K24	119.5	KR24	KRV	KT24	KTH
C01	105.5	CR01	CRH	CT01	CTV
C03	105.5	CR03	CRH	CT03	CTV
C05	105.5	CR05	CRH	CT05	CTV
C07	105.5	CR07	CRH	CT07	CTV
C09	105.5	CR09	CRH	CT09	CTV
C11	105.5	CR11	CRH	CT11	CTV

KT07	36000	T	11840	V	C
KT08	36000	T	11860	H	C
KT09	36000	T	11880	V	C
KT10	36000	T	11900	H	C
KT11	36000	T	11920	V	C
KT12	36000	T	11940	H	C
KT13	36000	T	11960	V	C
KT14	36000	T	11980	H	C
KT15	36000	T	12000	V	C
KT16	36000	T	12020	H	C
KT17	36000	T	12040	V	C
KT18	36000	T	12060	H	C
KT19	36000	T	12080	V	C
KT20	36000	T	12100	H	C
KT21	36000	T	12120	V	C
KT22	36000	T	12140	H	C
KT23	36000	T	12160	V	C
KT24	36000	T	12180	H	C
CR01	36000	R	5945	H	C
CR02	36000	R	5965	V	C
CR03	36000	R	5985	H	C
CR04	36000	R	6005	V	C
CR05	36000	R	6025	H	C
CR06	36000	R	6045	V	C
CR07	36000	R	6065	H	C
CR08	36000	R	6085	V	C
CR09	36000	R	6105	H	C
CR10	36000	R	6125	V	C
CR11	36000	R	6145	H	C
CR12	36000	R	6165	V	C
CR13	36000	R	6185	H	C
CR14	36000	R	6205	V	C
CR15	36000	R	6225	H	C
CR16	36000	R	6245	V	C
CR17	36000	R	6265	H	C
CR18	36000	R	6285	V	C
CR19	36000	R	6305	H	C
CR20	36000	R	6325	V	C
CR21	36000	R	6345	H	C

C13	105.5	CR13	CRH	CT13	CTV
C15	105.5	CR15	CRH	CT15	CTV
C17	105.5	CR17	CRH	CT17	CTV
C19	105.5	CR19	CRH	CT19	CTV
C21	105.5	CR21	CRH	CT21	CTV
C23	105.5	CR23	CRH	CT23	CTV
C02	105.5	CR02	CRV	CT02	CTH
C04	105.5	CR04	CRV	CT04	CTH
C06	105.5	CR06	CRV	CT06	CTH
C08	105.5	CR08	CRV	CT08	CTH
C10	105.5	CR10	CRV	CT10	CTH
C12	105.5	CR12	CRV	CT12	CTH
C14	105.5	CR14	CRV	CT14	CTH
C16	105.5	CR16	CRV	CT16	CTH
C18	105.5	CR18	CRV	CT18	CTH
C20	105.5	CR20	CRV	CT20	CTH
C22	105.5	CR22	CRV	CT22	CTH
C24	105.5	CR24	CRH	CT24	CTH
X01	112.5	KR14	KRV	CT14	CTH
X02	112.5	KR16	KRV	CT16	CTH
X03	112.5	KR18	KRV	CT18	CTH
X04	112.5	KR20	KRV	CT20	CTH
X05	112.5	KR22	KRV	CT22	CTH
X06	112.5	KR24	KRV	CT24	CTH
X07	111	CR14	CRV	KT14	KTH
X08	111	CR16	CRV	KT16	KTH
X09	111	CR18	CRV	KT18	KTH
X10	111	CR20	CRV	KT20	KTH
X11	111	CR22	CRV	KT22	KTH
X12	111	CR24	CRV	KT24	KTH
TCC		CC1	CRH		
TCK		KUC1	KRV		
TBC1				CBCN1	CTH
TBC2				CBCN2	CTV
TBK1				KBCN1	KTV
TBK2				KBCN2	KTH

CR22	36000	R	6365	V	C
CR23	36000	R	6385	H	C
CR24	36000	R	6405	V	C
CT01	36000	T	3720	V	C
CT02	36000	T	3740	H	C
CT03	36000	T	3760	V	C
CT04	36000	T	3780	H	C
CT05	36000	T	3800	V	C
CT06	36000	T	3820	H	C
CT07	36000	T	3840	V	C
CT08	36000	T	3860	H	C
CT09	36000	T	3880	V	C
CT10	36000	T	3900	H	C
CT11	36000	T	3920	V	C
CT12	36000	T	3940	H	C
CT13	36000	T	3960	V	C
CT14	36000	T	3980	H	C
CT15	36000	T	4000	V	C
CT16	36000	T	4020	H	C
CT17	36000	T	4040	V	C
CT18	36000	T	4060	H	C
CT19	36000	T	4080	V	C
CT20	36000	T	4100	H	C
CT21	36000	T	4120	V	C
CT22	36000	T	4140	H	C
CT23	36000	T	4160	V	C
CT24	36000	T	4180	H	C
CC1	800	R	6423.5	H	T
KUC1	800	R	14499	V	T
CBCN1	400	T	3700.5	H	T
CBCN2	400	T	4199.5	V	T
KBCN1	400	T	11701	V	T
KBCN2	400	T	12199	H	T

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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)
K_A	36M0G7W	36000	4	40000	0.69		6.4	19
K_B	27M0G7W	27000	4	32000	0.69		6.4	19
K_C	6M95G1W	6950	4	8000	0.69		6.4	19
K_D	5M00G1W	5000	4	6000	0.69		6.4	19
K_E	100KG1W	100	4	56	0.69		6.4	19
K_F	1M60G1W	1600	4	1544	0.69		6.4	19
K_G	36M0G7W	36000	8	50000	0.61		9.9	20
C_A	36M0G7W	36000	4	40000	0.69		6.4	19
C_B	27M0G7W	27000	4	32000	0.69		6.4	19
C_C	6M95G1W	6950	4	8000	0.69		6.4	19
C_D	5M00G1W	5000	4	6000	0.69		6.4	19
C_E	100KG1W	100	4	56	0.69		6.4	19
C_F	1M60G1W	1600	4	1544	0.69		6.4	19
C_G	36M0G7W	36000	8	50000	0.61		9.9	20

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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 ² /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
K01	K24	K_A		1		Link budgets.xl		57.2	20	25	47.4	51.8	-149.9	17.1
K01	K24	K_B		1		Link budgets.xl		57.2	20	25	47.4	51.8	-148.6	17.1
K01	K24	K_C		5	6950	Link budgets.xl		52.9	8.9	14	33.7	36.7	-157.8	25.6
K01	K24	K_D		6	5000	Link budgets.xl		52.9	8.9	14	32.3	35.3	-157.8	25.6
K01	K24	K_E		250	100	Link budgets.xl		46.6	-2	3	16.5	19.5	-156.6	19.6
K01	K24	K_F		20	1544	Link budgets.xl		46.6	8	13	26.5	29.5	-158.6	25.6
K01	K24	K_G		1		Link budgets.xl		57.2	20	25	47.4	51.8	-149.9	25.6
C01	C24	C_A		1		Link budgets.xl		53.2	25.1	30	35	41.7	-160	21.8
C01	C24	C_B		1		Link budgets.xl		53.2	20	25	35	41.7	-158.7	21.8
C01	C24	C_C		5	6950	Link budgets.xl		53.2	9.6	14	23.8	30.8	-163.7	21.8
C01	C24	C_D		6	5000	Link budgets.xl		53.2	12	17	23.8	30.8	-162.3	21.8
C01	C24	C_E		250	100	Link budgets.xl		47.2	-3.4	1.6	4.8	11	-165.1	21.8
C01	C24	C_F		20	1544	Link budgets.xl		47.2	11.8	16	20	27	-161.1	21.8
C01	C24	C_G		1		Link budgets.xl		53.2	25.1	30	35	41.7	-160	21.8
K01	K24		K_H	1		Link budgets.xl	2000	57.2	21	25	47.4	51.8	-137	19.6
C01	C24		C_H	1		Link budgets.xl	2000	53.2	23	27	35	41.7	-147.4	21.8
TCK	TCK		K_TC	1		Link budgets.xl		59.5	10	15				
TCC	TCC		C_TC	1		Link budgets.xl		56	10	15				
TBK1	TBK2		K_TM	1		Link budgets.xl					17	27	-155.1	33.2
TBC1	TBC2		C_TM	1		Link budgets.xl					12	22	-160.1	23

**FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)**

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): #Error

Remote Control (TT C) Location(s):

S14a: Street Address: Woodbine TT&C			
S14b. City: Mt. Airy	S14c. County:	S14d. State/Country MD	S14e. Zip Code: 21771
S14f. Telephone Number: 410-549-4300		S14g. Call Sign of Control Station (if appropriate): E7169	

Remote Control (TT C) Location(s):

S14a: Street Address: Vernon Valley Spacecraft Operations			
S14b. City: Sussex	S14c. County:	S14d. State/Country NJ	S14e. Zip Code: 07461
S14f. Telephone Number: 973-823-6000		S14g. Call Sign of Control Station (if appropriate): WB81	

**FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)**

Page 11:
Characteristics and
Certifications

S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 1378	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 1822		
S15c. Mass of spacecraft and fuel at launch (kg): 3200	S15f. Length (m): 23.5	S15i. Payload: 0.94
S15d. Mass of fuel, in orbit, at beginning of life (kg): 619	S15g. Width (m): 7.7	S15j. Bus: 0.88
S15e. Deployed Area of Solar Array (square meters): 39	S15h. Height (m): 3.9	S15k. Total: 0.83

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): 4916	(f): 4916	(k): 4916	(p): 4916
Bus (Watts):	(b): 429	(g): 361	(l): 467	(q): 375
Total (Watts):	(c): 5345	(h): 5277	(m): 5383	(r): 5291
Solar Array (Watts):	(d): 7312	(i): 6561	(n): 6265	(s): 5720
Depth of Battery Discharge (%):	(e) 15 %	(j) 12.6 %	(o) 10.9 %	(t) 19.1 %

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.