

FCC 312 Schedule S	FEDERAL COMMUNICATIONS COMMISSION SATELLITE SPACE STATION AUTHORIZATIONS (Technical and Operational Description)	Page 1: General, Frequency Bands, and GSO Orbit
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S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: SES-11		e. Estimated Date of Placement into Service:		i. Will the space station(s) operate on a Common Carrier Basis: N	
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s): 15 Years		j. Number of transponders offered on a common carrier basis:	
c. Construction Completion Date:		g. Total Number of Transponders: 48		k. Total Common Carrier Transponder Bandwidth: MHz	
d1. Est Launch Date Begin:	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 1000 MHz		l. 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 operate. 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)		
3700	M	4200	M	T	Fixed Satellite Service
5925	M	6425	M	R	Fixed Satellite Service
11.7	G	12.2	G	T	Fixed Satellite Service
14.0	G	14.2	G	R	Fixed Satellite Service
14.2	G	14.47	G	R	Fixed Satellite Service
14.47	G	14.5	G	R	Fixed Satellite Service
18.3	G	18.6	G	T	Fixed Satellite Service
18.6	G	18.8	G	T	Fixed Satellite Service
18.8	G	19.3	G	T	Fixed Satellite Service
19.7	G	20.2	G	T	Fixed Satellite Service
28.35	G	29.1	G	R	Fixed Satellite Service
29.25	G	29.5	G	R	Fixed Satellite Service
29.5	G	30.0	G	R	Fixed Satellite Service
11.7	G	12.2	G	T	Direct to Home in the Fixed Fixed Satellite Service
3700	M	4200	M	T	Direct to Home in the Fixed Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees EMM):	b. Alternate Orbital Longitude (Degrees EMM):	c. Degrees for orbital location selection:
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a. Nominal Orbital Longitude (Degrees E/W): 105 W	b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection:
Longitudinal Tolerance or E/W Station-Keeping: d. Toward West: 0.025 Degrees e. Toward East: 0.025 Degrees	f. Inclination Excursion or N/S Station-Keeping Tolerance: 0.025 Degrees	Range of orbital arc in which adequate service can be provided (Optional): <u> </u> Degrees <u> </u> E/W g. Westernmost: h. Easternmost:	
i. Reason for service are selection (Optional):			

**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 intital 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.
TC	E		Global
C-U	E		CONUS, Hawaii and parts of Alaska, Canada, Mexico and parts of Central America
C-D	S		CONUS, Hawaii and parts of Alaska, Canada, Mexico and parts of Central America
KU-U	E		CONUS, Hawaii and parts of Alaska, Canada and Mexico
KU-D	S		CONUS, Hawaii and parts of Alaska, Canada and Mexico
KA-U	E		North America
KA-D	S		North America

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														
TCV	R	1	1	0.1		30	N	90	TC				1	-8.95	-93.1	1	1
CTH	T	1	1	0.1		27	N	0	C-D	1	1	42.4					
CRH	R	1	1	0.1		27	N	0	C-U				1	3.1	-105.1	1	1
CTV	T	1	1	0.1		27	N	90	C-D	1	1	42.4					
CRV	R	1	1	0.1		27	N	90	C-U				1	3.1	-105.1	1	1
KUTV	T	1	1	0.1		30	N	90	KU-D	1	1	53.68					
KUR	R	1	1	0.1		30	N	90	KU-U				1	7.09	-109.1	1	1
KUTH	T	1	1	0.1		30	N	0	KU-D	1	1	53.69					
KUR	R	1	1	0.1		30	N	0	KU-U				1	7.06	-109.1	1	1
CTM	T	1	1	0.1		30	N	0	C-D	1	1	14.1					
CTM	T	1	1	0.1		30	N	90	C-D	1	1	14.1					
KCM	R	1	1	0.1		30	Y		TC				1	-14.6	-110.5	1	1
KTM	T	1	1	0.1		30	Y		TC	1	1	12					
KARL	R	1	1	0.1		28	Y		KA-U				1	-2.568	-92.5	1	1
KATR	T	1	1	0.1		27	Y		KA-D	1	1	41.7					

**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)
1CR	36000	R	5945	H	C
2CR	36000	R	5965	V	C
3CR	36000	R	5985	H	C
4CR	36000	R	6005	V	C
5CR	36000	R	6025	H	C
6CR	36000	R	6045	V	C
7CR	36000	R	6065	H	C
8CR	36000	R	6085	V	C
9CR	36000	R	6105	H	C
10CR	36000	R	6125	V	C
11CR	36000	R	6145	H	C
12CR	36000	R	6165	V	C
13CR	36000	R	6185	H	C
14CR	36000	R	6205	V	C
15CR	36000	R	6225	H	C
16CR	36000	R	6245	V	C
17CR	36000	R	6265	H	C
18CR	36000	R	6285	V	C
19CR	36000	R	6305	H	C
20CR	36000	R	6325	V	C
21CR	36000	R	6345	H	C
22CR	36000	R	6365	V	C
23CR	36000	R	6385	H	C
24CR	36000	R	6405	V	C
1CT	36000	T	3720	V	C
2CT	36000	T	3740	H	C
3CT	36000	T	3760	V	C
4CT	36000	T	3780	H	C
5CT	36000	T	3800	V	C
6CT	36000	T	3820	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
C1	1	1CR	CRH	1CT	CTV
C2	1	2CR	CRV	2CT	CTH
C3	1	3CR	CRH	3CT	CTV
C4	1	4CR	CRV	4CT	CTH
C5	1	5CR	CRH	5CT	CTV
C6	1	6CR	CRV	6CT	CTH
C7	1	7CR	CRH	7CT	CTV
C8	1	8CR	CRV	8CT	CTH
C9	1	9CR	CRH	9CT	CTV
C10	1	10CR	CRV	10CT	CTH
C11	1	11CR	CRH	11CT	CTV
C12	1	12CR	CRV	12CT	CTH
C13	1	13CR	CRH	13CT	CTV
C14	1	14CR	CRV	14CT	CTH
C15	1	15CR	CRH	15CT	CTV
C16	1	16CR	CRV	16CT	CTH
C17	1	17CR	CRH	17CT	CTV
C18	1	18CR	CRV	18CT	CTH
C19	1	19CR	CRH	19CT	CTV
C20	1	20CR	CRV	20CT	CTH
C21	1	21CR	CRH	21CT	CTV
C22	1	22CR	CRV	22CT	CTH
C23	1	23CR	CRH	23CT	CTV
C24	1	24CR	CRV	24CT	CTH
K1	1	1KR	KURH	1KT	KUTV
K2	1	2KR	KURV	2KT	KUTH
K3	1	3KR	KURH	3KT	KUTV
K4	1	4KR	KURV	4KT	KUTH
K5	1	5KR	KURH	5KT	KUTV
K6	1	6KR	KURV	6KT	KUTH

7CT	36000	T	3840	V	C
8CT	36000	T	3860	H	C
9CT	36000	T	3880	V	C
10CT	36000	T	3900	H	C
11CT	36000	T	3920	V	C
12CT	36000	T	3940	H	C
13CT	36000	T	3960	V	C
14CT	36000	T	3980	H	C
15CT	36000	T	4000	V	C
16CT	36000	T	4020	H	C
17CT	36000	T	4040	V	C
18CT	36000	T	4060	H	C
19CT	36000	T	4080	V	C
20CT	36000	T	4100	H	C
21CT	36000	T	4120	V	C
22CT	36000	T	4140	H	C
23CT	36000	T	4160	V	C
24CT	36000	T	4180	H	C
1KR	36000	R	14020	H	C
2KR	36000	R	14040	V	C
3KR	36000	R	14060	H	C
4KR	36000	R	14080	V	C
5KR	36000	R	14100	H	C
6KR	36000	R	14120	V	C
7KR	36000	R	14140	H	C
8KR	36000	R	14160	V	C
9KR	36000	R	14180	H	C
10KR	36000	R	14200	V	C
11KR	36000	R	14220	H	C
12KR	36000	R	14240	V	C
13KR	36000	R	14260	H	C
14KR	36000	R	14280	V	C
15KR	36000	R	14300	H	C
16KR	36000	R	14320	V	C
17KR	36000	R	14340	H	C
18KR	36000	R	14360	V	C
19KR	36000	R	14380	H	C
20KR	36000	R	14400	V	C
21KR	36000	R	14420	H	C

K7	1	7KR	KURH	7KT	KUTV
K8	1	8KR	KURV	8KT	KUTH
K9	1	9KR	KURH	9KT	KUTV
K10	1	10KR	KURV	10KT	KUTH
K11	1	11KR	KURH	11KT	KUTV
K12	1	12KR	KURV	12KT	KUTH
K13	1	13KR	KURH	13KT	KUTV
K14	1	14KR	KURV	14KT	KUTH
K15	1	15KR	KURH	15KT	KUTV
K16	1	16KR	KURV	16KT	KUTH
K17	1	17KR	KURH	17KT	KUTV
K18	1	18KR	KURV	18KT	KUTH
K19	1	19KR	KURH	19KT	KUTV
K20	1	20KR	KURV	20KT	KUTH
K21	1	21KR	KURH	21KT	KUTV
K22	1	22KR	KURV	22KT	KUTH
K23	1	23KR	KURH	23KT	KUTV
K24	1	24KR	KURV	24KT	KUTH
CTC5		FTC5	TCV		
CTC6		FTC6	TCV		
CTB3				TB3	CTMH
CTB4				TB4	CTMV
KA1LR	1	KARL1	KARL	KATR1	KATR
KA2LR	1	KARL2	KARL	KATR2	KATR
KA3LR	1	KARL3	KARL	KATR3	KATR
KTB1				TB1	KTM
KTB2				TB2	KTM
KTC1		FTC1	KCM		
KTC2		FTC2	KCM		
KTC3		FTC3	KCM		
KTC4		FTC4	KCM		

22KR	36000	R	14440	V	C
23KR	36000	R	14460	H	C
24KR	36000	R	14480	V	C
1KT	36000	T	11720	V	C
2KT	36000	T	11740	H	C
3KT	36000	T	11760	V	C
4KT	36000	T	11780	H	C
5KT	36000	T	11800	V	C
6KT	36000	T	11820	H	C
7KT	36000	T	11840	V	C
8KT	36000	T	11860	H	C
9KT	36000	T	11880	V	C
10KT	36000	T	11900	H	C
11KT	36000	T	11920	V	C
12KT	36000	T	11940	H	C
13KT	36000	T	11960	V	C
14KT	36000	T	11980	H	C
15KT	36000	T	12000	V	C
16KT	36000	T	12020	H	C
17KT	36000	T	12040	V	C
18KT	36000	T	12060	H	C
19KT	36000	T	12080	V	C
20KT	36000	T	12100	H	C
21KT	36000	T	12120	V	C
22KT	36000	T	12140	H	C
23KT	36000	T	12160	V	C
24KT	36000	T	12180	H	C
FTC1	856	R	14000.5	V	T
FTC2	856	R	14003.5	V	T
FTC3	856	R	14499.5	H	T
FTC4	856	R	14497.5	H	T
FTC5	856	R	5926	V	T
FTC6	856	R	5927	V	T
TB1	275	T	12198.5	V	T
TB2	275	T	11703	H	T
TB3	275	T	3701.5	V	T
TB4	275	T	4199.9	H	T
KARL1	750000	R	28725	L	C
KARL2	250000	R	29375	L	C

KARL3	500000	R	29750	L	C
KATR1	750000	T	18925	R	C
KATR2	250000	T	18425	R	C
KATR3	500000	T	19950	R	C

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)
C1	36M0G7W	35400	4	35100	0.6		3.3	
C2	18M0G7W	18000	4	17100	0.6		3.5	
C3	9M00G7W	9000	4	8600	0.6		3.5	
C4	6M00G7W	6000	4	5700	0.6		3.5	
C5	1M00G7W	1000	4	1000	0.6		3.5	
K1	36M0G7W	30000	8	42900	0.6667		7.6	
K2	5M00G1W	3617	4	3500	0.75		5.5	
K3	100KG1D	37	4	56	0.75		4.5	
K4	1M40G1D	1675	4	711	0.75		1.7	
K5	2M00G7W	910	8	1500	0.75		10.5	
K6	8M00G7W	6006	4	5300	0.6667		4.6	
KA1	250MG1W	249600	4	99500	0.25		-0.8	
KA2	11M3G1W	11250	4	4400	0.25		-0.9	
KA3	5M63G1W	5625	4	2200	0.25		-0.9	

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)
C1	C1	C1									41.7		
C1	C1	C2									34.8		
C1	C1	C3									31.8		
C1	C1	C4									30		
C1	C1	C5									22.3		
K1	K1	K1									44.3		
K1	K1	K2									31.9		
K1	K1	K3									11.1		
K1	K1	K4									27.2		
K1	K1	K5									30.8		
K1	K1	K6									33.3		
CTC5	CTC5		T1										
CTB3	CTB3		T2								14.1		
KA1LR	KA1LR	KA1									40.4		
KA1LR	KA1LR	KA2									25.1		
KA1LR	KA1LR	KA3									22.1		
KTC1	KTC1		T1										
KTB1	KTB1		T2								17.3		

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

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): #Error

**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:

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?:	<input 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 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 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.						

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