

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: INTELSAT 709		e. Estimated Date of Placement into Service:		i. Will the space station(s) operate on a Common Carrier Basis:	
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s): Years		j. Number of transponders offered on a common carrier basis:	
c. Construction Completion Date:		g. Total Number of Transponders:		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) 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)		
14000	M	14250	M	R	Fixed Satellite Service
11700	M	11950	M	T	Fixed Satellite Service
6170	M	6180	M	R	Fixed Satellite Service
3947.5	M	3952.5	M	T	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 85.15 E		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: The INTELSAT 709 at the location 85.15 carries the band 11700-11950 MHz which can be paired with 14000-14250 MHz in the uplink and used to provide VSAT services in certain regions	
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): Degrees E/W	
d. Toward West:	0.05 Degrees	e. Toward East:		g. Westernmost:	h. Easternmost:
		0.05 Degrees			
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:

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.
1	S	SPOT SERVICE AREA.	Steerable over Region 1 and 3
2	S	709TM.GXT	GLOBAL TELEMETRY
3	E	709TC-OBEAM.GXT	GLOBAL TELECOMMAND

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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 Iso- lation (dB)	(h) Polar- ization Switch- able? (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 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	
S1ER	T	35.1	29.6	0.1	0.4	30	N	0	1	2	15	50.1						
S1R	R	36.7	28.9	0.1	0.4	30	N		0				508	9.6	-94.8	14	2	
S2ER	T	34.1	27.6	0.1	0.4	30	N		0	2	15	49.1						
S2R	R	35.7	27.5	0.1	0.4	30	N		0				701	7.2	-95.2	14	2	
S3ER	T	35.5	29.5	0.1	0.4	30	Y		0	2	15	50.5						
S3R	R	37.1	29	0.1	0.4	30	Y		0				520	9.9	-95.1	14	2	
O	R	4.3	3	0.1	0.4	30	N		0						-90			
HTM	T	12.7	10.7	0.1	0.4	30	N		0	1.9	0.3	5.8						

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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
S1ER	T	C	85.15		s1_trco.gxt	-124.3	-124.2	-124	-123.9	-123.8
S1R	R	C	85.15		s1_reco.gxt					
S2ER	T	C	85.15		s2_trco.gxt	-124.3	-124.2	-124	-123.9	-123.8
S2R	R	C	85.15		s2_reco.gxt					
S3ER	T	C	85.15		s3_trco.gxt	-124.3	-124.2	-124	-123.9	-123.8
S3R	R	C	85.15		s3_reco.gxt					
O	R	C	85.15		709TC-gain.GXT					
HTM	T	C	85.15		709TM.GXT	-152.9	-152.8	-152.6	-152.5	-152.4

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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)
261	77000	T	11747.5	H	C
262	72000	T	11830	H	C
263A	36000	T	11891	H	C
263B	36000	T	11929	H	C
271	77000	T	11747.5	V	C
272	72000	T	11830	V	C
273A	36000	T	11891	V	C
273B	36000	T	11929	V	C
211	77000	T	11747.5	H	C
212	72000	T	11830	H	C
213A	36000	T	11891	H	C
213B	36000	T	11929	H	C
61	77000	R	14042.5	V	C
62	72000	R	14125	V	C
63A	36000	R	14186	V	C
63B	36000	R	14224	V	C
71	77000	R	14042.5	H	C
72	72000	R	14125	H	C
73A	36000	R	14186	H	C
73B	36000	R	14224	H	C
111	77000	R	14042.5	V	C
112	72000	R	14125	V	C
113A	36000	R	14186	V	C
113B	36000	R	14224	V	C

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
S11	118.71	71	S1RR	271	S1ER
S12	118.71	72	S1RR	272	S1ER
S13	118.71	73A	S1RR	273A	S1ER
S14	118.71	73B	S1RR	273B	S1ER
S21	120.11	61	S2RR	261	S2ER
S22	120.11	62	S2RR	262	S2ER
S23	120.11	63A	S2RR	263A	S2ER
S24	120.11	63B	S2RR	263B	S2ER
S31	118.61	111	S3RR	211	S3ER
S32	118.61	112	S3RR	212	S3ER
S33	118.61	113A	S3RR	213A	S3ER
S34	118.61	113B	S3RR	213B	S3ER

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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)
1	97K6G7W	97.6	4	64	0.5		6.6	18.8
2	6M48G7W	6480	4	6312	0.75		9.1	21.3
3	25M6G7W	25651	4	32064	0.875		8.9	21.1
4	27M8G7W	27834	4	32064	0.875		10.5	22.7

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Page 8: Analog Modulation

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						
1	30M0F3F	30000	TV/FM	1					NTSC	2.5	2.4		12	26

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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)		EIRP (dBW)		(n) Max. Power Flux Density (dBW/m ² /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
(j) Min.	(k) Max.			(l) Min.	(m) Max.									
S11	S14		1	1		IS709-TVFMLB	4000	58.4	5.8	13.6	39.5	45	-124	35.2
S21	S24		1	1		IS709-TVFMLB	4000	58.4	6.8	15	38.5	45	-124	35.2
S31	S34		1	1		IS709-TVFMLB	4000	58.4	6	14.1	39	45	-124	35.2
S11	S14	1	1	737	97.58	IS709-S1DIG.d	69.7	58.4	-20	-13.7	15.4	20.9	-130.3	19.3
S11	S14		1	737	97.58	IS709-S1DIG.d	69.7	43.1	-14.1	-6.3	7.4	12.9	-138.3	35.2
S11	S14		1	737	97.58	IS709-S1DIG.d	69.7	58.4	-7.7	0.1	15.1	20.6	-130.6	19.3
S11	S14		1	737	97.58	IS709-S1DIG.d	69.7	43.1	-4.8	3	2.8	8.3	-142.9	35.2
S11	S14		2	7	6480.2	IS709-S1DIG.d	4628.8	58.4	-0.7	7.1	36.1	41.6	-127.8	19.3
S11	S14		2	11	6480.2	IS709-S1DIG.d	4628.8	43.1	6.6	14.4	28.2	33.7	-135.8	35.2
S11	S14		2	7	6480.2	IS709-S1DIG.d	4628.8	58.4	13	20.8	35.9	41.4	-128.1	19.3
S11	S14		2	11	6480.2	IS709-S1DIG.d	4628.8	43.1	16	23.8	23.5	29	-140.4	35.2
S11	S14		3	2	25651.22	IS709-S1DIG.d		58.4	5	12.8	41.9	47.4	-128	19.3
S11	S14		3	3	25651.22	IS709-S1DIG.d		43.1	12.4	20.2	34	39.5	-136	35.2
S11	S14		3	2	25651.22	IS709-S1DIG.d		58.4	18.8	26.6	41.6	47.1	-128.3	19.3
S11	S14		3	3	25651.22	IS709-S1DIG.d		43.1	21.7	29.5	29.3	34.8	-140.6	35.2
S11	S14		4	1		IS709-S1DIG.d		58.4	7	14.8	43.9	49.4	-126.4	19.3
S11	S14		4	2	27834.24	IS709-S1DIG.d		43.1	14.4	22.2	35.9	41.4	-134.3	35.2
S11	S14		4	1		IS709-S1DIG.d		58.4	20.8	2.6	43.6	49.1	-126.6	19.3
S11	S14		4	2	27834.24	IS709-S1DIG.d		43.1	23.6	31.4	31.2	36.7	-139.1	35.2
S21	S24		1	521	97.58	IS709-S2DIG.d		58.4	-19.8	-11.6	15.4	21.9	-129.3	19.3
S21	S24		1	738	97.58	IS709-S2DIG.d		43.1	-12.4	-4.2	7.6	14.1	-137.1	35.2
S21	S24		1	559	97.58	IS709-S2DIG.d		58.4	-6.1	2.1	15.1	21.6	-129.6	19.3
S21	S24		1	738	97.58	IS709-S2DIG.d		43.1	-3.1	5.1	2.8	9.3	-141.9	35.2
S21	S24		2	4	6480.2	IS709-S2DIG.d		58.4	0.9	9.1	36.2	42.7	-126.8	19.3
S21	S24		2	11	6480.2	IS709-S2DIG.d		43.1	8.4	16.6	28.4	34.9	-134.6	35.2
S21	S24		2	5	6480.2	IS709-S2DIG.d		58.4	14.6	22.8	35.9	42.4	-127.1	19.3
S21	S24		2	11	6480.2	IS709-S2DIG.d		43.1	17.6	25.8	23.6	30.1	-139.4	35.2
S21	S24		3	1	25651.22	IS709-S2DIG.d		58.4	6.7	14.9	42	48.5	-127	19.3
S21	S24		3	3	25651.22	IS709-S2DIG.d		43.1	14.2	22.4	34.1	40.6	-134.8	35.2

S21	S24		3	1	25651.22	IS709-S2DIG.d		58.4	20.4	28.6	41.6	48.1	-127.3	19.3
S21	S24		3	3	25651.22	IS709-S2DIG.d		43.1	23.4	31.6	29.3	35.8	-139.6	35.2
S21	S24		4	1		IS709-S2DIG.d		58.4	7.3	15.5	42.6	49.1	-126.7	19.3
S21	S24		4	2	27834.24	IS709-S2DIG.d		43.1	16.1	24.3	36.1	42.6	-133.2	35.2
S21	S24		4	1		IS709-S2DIG.d		58.4	21.3	29.5	42.6	49.1	-126.7	19.3
S21	S24		4	2	27834.24	IS709-S2DIG.d		43.1	25.2	33.4	31.2	37.7	-138	35.2
S31	S34		1	738	97.58	IS709-S3DIG.d		58.4	-20	-13.5	15.5	21.5	-129.7	19.3
S31	S34		1	738	97.58	IS709-S3DIG.d		43.1	-13.9	-5.8	7.9	13.9	-137.3	35.2
S31	S34		1	738	97.58	IS709-S3DIG.d		58.4	-7.9	0.2	15.1	21.1	-130.1	19.3
S31	S34		1	738	97.58	IS709-S3DIG.d		43.1	-4.9	3.2	2.9	8.9	-142.4	35.2
S31	S34		2	7	6480.2	IS709-S3DIG.d		58.4	-0.8	7.3	36.2	42.2	-127.2	19.3
S31	S34		2	11	6480.2	IS709-S3DIG.d		43.1	6.9	15	28.7	34.7	-134.8	35.2
S31	S34		2	7	6480.2	IS709-S3DIG.d		58.4	12.8	20.9	35.9	4.9	-127.6	19.3
S31	S34		2	11	6480.2	IS709-S3DIG.d		43.1	15.8	23.9	23.6	29.6	-139.8	35.2
S31	S34		3	2	25651.22	IS709-S3DIG.d		58.4	4.9	13	42	48	-127.4	19.3
S31	S34		3	2	25651.22	IS709-S3DIG.d		43.1	12.6	20.7	34.4	40.4	-135	35.2
S31	S34		3	2	25651.22	IS709-S3DIG.d		58.4	18.6	26.7	41.6	47.6	-127.8	19.3
S31	S34		3	2	25651.22	IS709-S3DIG.d		43.1	21.6	29.7	29.4	35.4	-140	35.2
S31	S34		4	1		IS709-S3DIG.d		58.4	6.9	15	44	50	-125.8	19.3
S31	S34		4	3	27834.24	IS709-S3DIG.d		43.1	14.6	22.7	36.4	42.4	-133.4	35.2
S31	S34		4	1		IS709-S3DIG.d		58.4	20.6	28.7	43.6	49.6	-126.1	19.3
S31	S34		4	3	27834.24	IS709-S3DIG.d		43.1	23.5	31.6	31.3	37.3	-138.5	35.2

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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): #Error

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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.								