

**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: INTELSAT 16		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: 24		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) 864 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 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)		
13750	M	14500	M	R	Fixed Satellite Service
11700	M	12200	M	T	Fixed Satellite Service
12750	M	13250	M	R	Fixed Satellite Service
10700	M	11450	M	T	Fixed Satellite Service

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

a. Nominal Orbital Longitude (Degrees E/W): 58.1 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): Degrees    E/W	
d. Toward West:      0.05 Degrees	e. Toward East:      0.05 Degrees		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:

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		Eastern Brazil
2	S		Mexico, Central America, the Caribbean, Puerto Rico
3	S		Mexico, Central America
4	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 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)	
										(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
		(c) Peak (dBi)	(d) Edge (dBi)														
BHUL	R	38.4	32.4	0.12	0.11	30	N	0	1					11.3	-108.3	1	1
BVUL	R	38.4	32.4	0.12	0.11	30	N	90	1					11.3	-108.3	1	1
BHDL	T	36.9	32.9	0.12	0.11	30	N	0	1			54.5					
BVDL	T	36.9	32.9	0.12	0.11	30	N	90	1			54.5					
MHU	R	38.6	30.6	0.12	0.11	30	N	0	2					11.5	-108.5	1	1
MVU	R	38.6	30.6	0.12	0.11	30	N	90	2					11.5	-108.5	1	1
MHD	T	36.6	32.6	0.12	0.11	30	N	0	2			54.2					
MVD	T	36.6	32.6	0.12	0.11	30	N	90	2			54.2					
M2DL	T	39.6	33.6	0.12	0.11	30	N	90	3			57.2					
CMD	R	20.3	17.3	0.12	0.11	30	N	0	4					-13.3	-112		
CMD	R	20.3	17.3	0.12	0.11	30	N	90	4					-13.3	-112		
CMD	R	3	0	0.12	0.11		N		4					-34.5	-90.8		
CMD	R	13	6	0.12	0.11		N		4					-30.3	-94.9		
TLMH	T	21.3	18.3	0.12	0.11		N	0	4			13.1					
TLM	T	3	0	0.12	0.11		N		4			6.4					
TLM	T	13	6	0.12	0.11		N		4			13.4					
UPC	T	21	17	0.12	0.11		N	0	4			15.6					
UPC	T	21	17	0.12	0.11		N	90	4			15.6					

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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
BHUL	R	C	-58.1							
BVUL	R	C	-58.1							
BHDL	T	C	-58.1			-150	-149.9	-149.8	-149.7	-149.6
BVDL	T	C	-58.1			-150	-149.9	-149.8	-149.7	-149.6
MHU	R	C	-58.1							
MVU	R	C	-58.1							
MHD	T	C	-58.1			-150	-149.9	-149.8	-149.7	-149.6
MVD	T	C	-58.1			-150	-149.9	-149.8	-149.7	-149.6
M2DL	T	C	-58.1			-150	-149.9	-149.8	-149.7	-149.6

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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)
BU1	36000	R	12772	H	C
BU2	36000	R	12812	H	C
BU3	36000	R	12852	H	C
BU5	36000	R	12932	H	C
BU7	36000	R	13022	H	C
BU9	36000	R	13102	H	C
BU10	36000	R	13142	H	C
BU11	36000	R	13182	H	C
BU13	36000	R	12772	V	C
BU15	36000	R	12852	V	C
BU16	36000	R	12892	V	C
BU17	36000	R	12932	V	C
BU19	36000	R	13022	V	C
BU20	36000	R	13062	V	C
BU21	36000	R	13102	V	C
BU23	36000	R	13182	V	C
BU25	36000	R	13774	H	C
BU26	36000	R	13814	H	C
BU27	36000	R	13854	H	C
BU29	36000	R	13934	H	C
BU31	36000	R	13774	V	C
BU33	36000	R	13854	V	C
BU34	36000	R	13894	V	C
BU35	36000	R	13934	V	C
BD1	36000	T	10722	V	C
BD2	36000	T	10762	V	C
BD3	36000	T	10802	V	C
BD5	36000	T	10882	V	C
BD7	36000	T	11222	V	C
BD9	36000	T	11302	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
B1		BU1	BHUL	BD1	BVDL
B2		BU2	BHUL	BD2	BVDL
B3		BU3	BHUL	BD3	BVDL
B5		BU5	BHUL	BD5	BVDL
B7		BU7	BHUL	BD7	BVDL
B9		BU9	BHUL	BD9	BVDL
B10		BU10	BHUL	BD10	BVDL
B11		BU11	BHUL	BD11	BVDL
B13		BU13	BVUL	BD13	BHDL
B15		BU15	BVUL	BD15	BHDL
B16		BU16	BVUL	BD16	BHDL
B17		BU17	BVUL	BD17	BHDL
B19		BU19	BVUL	BD19	BHDL
B20		BU20	BVUL	BD20	BHDL
B21		BU21	BVUL	BD21	BHDL
B23		BU23	BVUL	BD23	BHDL
B25		BU25	BHUL	BD25	BVDL
B26		BU26	BHUL	BD26	BVDL
B27		BU27	BHUL	BD26	BVDL
B29		BU29	BHUL	BD29	BVDL
B31		BU31	BVUL	BD31	BHDL
B33		BU33	BVUL	BD33	BHDL
B34		BU34	BVUL	BD34	BHDL
B35		BU35	BVUL	BD35	BHDL
M0001		MU001	MVUL	MD001	MHDL
M0003		MU003	MVUL	MD003	MHDL
M0005		MU005	MVUL	MD005	MHDL
M0007		MU007	MVUL	MD007	MHDL
M0009		MU009	MVUL	MD009	MHDL
M0011		MU011	MVUL	MD011	MHDL

BD10	36000	T	11342	V	C
BD11	36000	T	11382	V	C
BD13	36000	T	10722	H	C
BD15	36000	T	10802	H	C
BD16	36000	T	10842	H	C
BD17	36000	T	10882	H	C
BD19	36000	T	11222	H	C
BD20	36000	T	11262	H	C
BD21	36000	T	11302	H	C
BD23	36000	T	11382	H	C
BD25	36000	T	10970	V	C
BD26	36000	T	11010	V	C
BD27	36000	T	11050	V	C
BD29	36000	T	11130	V	C
BD31	36000	T	10970	H	C
BD33	36000	T	11050	H	C
BD34	36000	T	11090	H	C
BD35	36000	T	11130	H	C
EU001	36000	R	13770	V	C
EU003	36000	R	13810	V	C
EU005	36000	R	13850	V	C
EU007	36000	R	13890	V	C
EU009	36000	R	13930	V	C
EU011	36000	R	13970	V	C
MU001	36000	R	14020	V	C
MU003	36000	R	14060	V	C
MU005	36000	R	14100	V	C
MU007	36000	R	14140	V	C
MU009	36000	R	14180	V	C
MU011	36000	R	14220	V	C
MU013	36000	R	14260	V	C
MU015	36000	R	14300	V	C
MU017	36000	R	14340	V	C
MU019	36000	R	14380	V	C
MU021	36000	R	14420	V	C
MU023	36000	R	14460	V	C
MU002	36000	R	14040	H	C
MU004	36000	R	14080	H	C
MU006	36000	R	14120	H	C

M0013		MU013	MVUL	MD013	MHDL
M0015		MU015	MVUL	MD015	MHDL
M0017		MU017	MVUL	MD017	MHDL
M0019		MU019	MVUL	MD019	MHDL
M0021		MU021	MVUL	MD021	MHDL
M0023		MU023	MVUL	MD023	MHDL
M0002		MU002	MHUL	MD002	MVDL
M0004		MU004	MHUL	MD004	MVDL
M0006		MU006	MHUL	MD006	MVDL
M0008		MU008	MHUL	MD008	MVDL
M0010		MU010	MHUL	MD010	MVDL
M0012		MU012	MHUL	MD012	MVDL
M0014		MU014	MHUL	MD014	MVDL
M0016		MU016	MHUL	MD016	MVDL
M0018		MU018	MHUL	MD018	MVDL
M0020		MU020	MHUL	MD020	MVDL
M0022		MU022	MHUL	MD022	MVDL
M0024		MU024	MHUL	MD024	MVDL
ME001		EU001	MVUL	MD001	MHDL
ME003		EU003	MVUL	MD003	MHDL
ME005		EU005	MVUL	MD005	MHDL
ME007		EU007	MVUL	MD007	MHDL
ME009		EU009	MVUL	MD009	MHDL
ME011		EU011	MVUL	MD011	MHDL
MH002		MU002	MHUL	MD002	M2DL
MH004		MU004	MHUL	MD004	M2DL
MH006		MU006	MHUL	MD006	M2DL
MH008		MU008	MHUL	MD008	M2DL
MH010		MU010	MHUL	MD010	M2DL
MH012		MU012	MHUL	MD012	M2DL

MU008	36000	R	14160	H	C
MU010	36000	R	14200	H	C
MU012	36000	R	14240	H	C
MU014	36000	R	14280	H	C
MU016	36000	R	14320	H	C
MU018	36000	R	14360	H	C
MU020	36000	R	14400	H	C
MU022	36000	R	14440	H	C
MU024	36000	R	14480	H	C
MD001	36000	T	11720	H	C
MD003	36000	T	11760	H	C
MD005	36000	T	11800	H	C
MD007	36000	T	11840	H	C
MD009	36000	T	11880	H	C
MD011	36000	T	11920	H	C
MD013	36000	T	11960	H	C
MD015	36000	T	12000	H	C
MD017	36000	T	12040	H	C
MD019	36000	T	12080	H	C
MD021	36000	T	12120	H	C
MD023	36000	T	12160	H	C
MD002	36000	T	11740	V	C
MD004	36000	T	11780	V	C
MD006	36000	T	11820	V	C
MD008	36000	T	11860	V	C
MD010	36000	T	11900	V	C
MD012	36000	T	11940	V	C
MD014	36000	T	11980	V	C
MD016	36000	T	12020	V	C
MD018	36000	T	12060	V	C
MD020	36000	T	12100	V	C
MD022	36000	T	12140	V	C
MD024	36000	T	12180	V	C
CMD1	1000	R	13997.5	H	T
CMD2	1000	R	14499.5	V	T
CMD3	1000	R	13997.5	L	T
CMD4	1000	R	14499.5	L	T
CMD5	1000	R	13997.5	L	T
CMD6	1000	R	14499.5	L	T



TLM1	500	T	12198.25	H	T
TLM2	500	T	12198.75	H	T
TLM3	500	T	12198.25	R	T
TLM4	500	T	12198.75	R	T
TLM5	500	T	12198.25	R	T
TLM6	500	T	12198.75	R	T
UPC1	25	T	11701.25	V	T
UPC2	25	T	12199.75	H	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	36M0G7W	36000						
D2	8M25G7W	8250						
D3	1M74G7W	1733						
D4	382KG7W	382						





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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: 7900 Tysons One Place			
S14b. City: McLean	S14c. County: Fairfax	S14d. State/Country VA	S14e. Zip Code: 22102
S14f. Telephone Number: 703-559-7701		S14g. Call Sign of Control Station (if appropriate):	

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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 checked="" 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
<b>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.</b>						

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