

**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 8		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): 3 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) 1728 MHz	l. Orbit Type: Mark all boxes that apply: ☒ GSO ☐ NGSO

S2. OPERATING FREQUENCY BANDS Identify the frequency range and transmit/receive mode for all frequency bands in which this station will opera
Also indicate the nature of service(s) for each frequency band.

Frequency Band Limits				e. T/R Mode	Nature of Service(s): List all that apply to this band	f.
Lower Frequency (_Hz)		Upper Frequency (_Hz)				
a. Numeric	b. Unit (K/M/G)	c. Numeric	d. Unit (K/M/G)			
5925	M	6425	M	R	Fixed Satellite Service	
3700	M	4200	M	T	Fixed Satellite Service	
13997	M	14500	M	R	Fixed Satellite Service	
12250	M	12750	M	T	Fixed Satellite Service	

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 168.9 E	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:		
d. Toward West: 0.05 Degrees	0.05 Degrees		
e. Toward East: 0.05 Degrees		Range of orbital are in which adequate service can be provided (Optional): Degrees E/W g. Westernmost: h. Easternmost:	
i. Reason for service are selection (Optional):			

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Page 2: NGSO Orbits

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)
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NO NGSO DATA FILED

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Page 3: Service Areas

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		EAST ASIA, AUSTRALIA AND WESTERN UNITED STATES
2	S		EAST ASIA, AUSTRALIA, NEW ZEALAND AND WESTERN UNITED STATES
3	S		AUSTRALIA (AND WESTERN UNITED STATES)
4	S		NORTHEAST ASIA
5	S		PHILIPPINES, INDONESIA, AND MALAYSIA
6	S		GLOBAL

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Page 4: Antenna Beams

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
PCH	R	29.6	19.6	0.1	0.2	30	N	0	1					1.6	-95.6	21	1
PCV	R	30.5	20.5	0.1	0.2	30	N	90	1					2.6	-96.6	21	1
PKH	R	28.7	20.7	0.1	0.2	30	N	0	2					0.4	-98.4	21	1
PKVU	R	28.5	20.5	0.1	0.2	30	N	90	2					0.5	-98.5	21	1
PCH	T	27.2	19.2	0.1	0.2	30	N	0	1			40.4					
PCV	T	26.6	18.6	0.1	0.2	30	N	90	1			40.4					
AKH	T	34	26	0.1	0.2	30	N	0	3			52.7					
NKH	T	37.1	31.1	0.1	0.2	30	N	0	4			56.1					
SKVD	T	38.8	30.8	0.1	0.2	30	N	90	5			56.7					
CMD	R	2	1	0.1	0.2				6					-30.6	-93.7		
TMG	T	22.8	20.2	0.1	0.2			90	6			17.1					
TMG	T	22.8	20.2	0.1	0.2			0	6			17.1					
TMP	T	-2	-3	0.1	0.2				6			8.3					
BNC	T	22.8	20.2	0.1	0.2			0	6			15.5					

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Page 5: Beam Diagrams

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
PCH	R	C	168.9		pchu.gxt					
PCV	R	C	168.9		pcvu.gxt					
PKH	R	C	168.9		pkhu.gxt					
PKVU	R	C	168.9		pkvu.gxt					
PCH	T	C	168.9		pchd.gxt	-152.9	-152.8	-152.6	-152.5	-152.4
PCV	T	C	168.9		pcvd.gxt	-152.9	-152.8	-152.6	-152.5	-152.4
AKH	T	C	168.9		akhd.gxt	-148	-145.5	-143	-140.5	-140.1
NKH	T	C	168.9		nkhd.gxt	-148	-145.5	-143	-140.5	-138
SKVD	T	C	168.9		skvd.gxt	-148	-145.5	-143	-140.5	-138
CMD	R	C	168.9							
TMG	T	C	168.9			-164.1	-164	-163.9	-163.8	-163.7
TMG	T	C	168.9			-164.1	-164	-163.9	-163.8	-163.7
TMP	T	C	168.9			-172.9	-172.8	-172.7	-172.6	-172.5
BNC	T	C	168.9			-155.7	-155.6	-155.5	-155.4	-155.3

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Page 6: Channels and Transponders

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)
CU001	36000	R	5945	H	C
CU003	36000	R	5985	H	C
CU005	36000	R	6025	H	C
CU007	36000	R	6065	H	C
CU009	36000	R	6105	H	C
CU011	36000	R	6145	H	C
CU013	36000	R	6185	H	C
CU015	36000	R	6225	H	C
CU017	36000	R	6265	H	C
CU019	36000	R	6305	H	C
CU021	36000	R	6345	H	C
CU023	36000	R	6385	H	C
CU002	36000	R	5965	V	C
CU004	36000	R	6005	V	C
CU006	36000	R	6045	V	C
CU008	36000	R	6085	V	C
CU010	36000	R	6125	V	C
CU012	36000	R	6165	V	C
CU014	36000	R	6205	V	C
CU016	36000	R	6245	V	C
CU018	36000	R	6285	V	C
CU020	36000	R	6325	V	C
CU022	36000	R	6365	V	C
CU024	36000	R	6405	V	C
CD001	36000	T	3720	V	C
CD003	36000	T	3760	V	C
CD005	36000	T	3800	V	C
CD007	36000	T	3840	V	C
CD009	36000	T	3880	V	C
CD011	36000	T	3920	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
C0001	117.1	CU001	PCHU	CD001	PCVD
C0003	117.1	CU003	PCHU	CD003	PCVD
C0005	117.1	CU005	PCHU	CD005	PCVD
C0007	117.1	CU007	PCHU	CD007	PCVD
C0009	117.1	CU009	PCHU	CD009	PCVD
C0011	117.1	CU011	PCHU	CD011	PCVD
C0013	117.1	CU013	PCHU	CD013	PCVD
C0015	117.1	CU015	PCHU	CD015	PCVD
C0017	117.1	CU017	PCHU	CD017	PCVD
C0019	117.1	CU019	PCHU	CD019	PCVD
C0021	117.1	CU021	PCHU	CD021	PCVD
C0023	117.1	CU023	PCHU	CD023	PCVD
C0002	116.6	CU002	PCVU	CD002	PCHD
C0004	116.6	CU004	PCVU	CD004	PCHD
C0006	116.6	CU006	PCVU	CD006	PCHD
C0008	116.6	CU008	PCVU	CD008	PCHD
C0010	116.6	CU010	PCVU	CD010	PCHD
C0012	116.6	CU012	PCVU	CD012	PCHD
C0014	116.6	CU014	PCVU	CD014	PCHD
C0016	116.6	CU016	PCVU	CD016	PCHD
C0018	116.6	CU018	PCVU	CD018	PCHD
C0020	116.6	CU020	PCVU	CD020	PCHD
C0022	116.6	CU022	PCVU	CD022	PCHD
C0024	116.6	CU024	PCVU	CD024	PCHD
K0001	132.1	KU001	PKHU	KD001	SKVD
K0002	132.1	KU002	PKHU	KD002	SKVD
K0003	132.1	KU003	PKHU	KD003	SKVD
K0004	132.1	KU004	PKHU	KD004	SKVD
K0005	132.1	KU005	PKHU	KD005	SKVD
K0006	132.1	KU006	PKHU	KD006	SKVD

CD013	36000	T	3960	V	C
CD015	36000	T	4000	V	C
CD017	36000	T	4040	V	C
CD019	36000	T	4080	V	C
CD021	36000	T	4120	V	C
CD023	36000	T	4160	V	C
CD002	36000	T	3740	H	C
CD004	36000	T	3780	H	C
CD006	36000	T	3820	H	C
CD008	36000	T	3860	H	C
CD010	36000	T	3900	H	C
CD012	36000	T	3940	H	C
CD014	36000	T	3980	H	C
CD016	36000	T	4020	H	C
CD018	36000	T	4060	H	C
CD020	36000	T	4100	H	C
CD022	36000	T	4140	H	C
CD024	36000	T	4180	H	C
KU001	36000	R	14036	H	C
KU002	36000	R	14076	H	C
KU003	36000	R	14116	H	C
KU004	36000	R	14156	H	C
KU005	36000	R	14196	H	C
KU006	36000	R	14236	H	C
KU007	36000	R	14276	H	C
KU008	36000	R	14316	H	C
KU009	36000	R	14356	H	C
KU010	36000	R	14396	H	C
KU011	36000	R	14436	H	C
KU012	36000	R	14476	H	C
KU013	36000	R	14036	V	C
KU014	36000	R	14076	V	C
KU015	36000	R	14116	V	C
KU016	36000	R	14156	V	C
KU017	36000	R	14196	V	C
KU018	36000	R	14236	V	C
KU019	36000	R	14276	V	C
KU020	36000	R	14316	V	C
KU021	36000	R	14356	V	C

K0007	132.1	KU007	PKHU	KD007	SKVD
K0008	132.1	KU008	PKHU	KD008	SKVD
K0009	132.1	KU009	PKHU	KD009	SKVD
K0010	132.1	KU010	PKHU	KD010	SKVD
K0011	132.1	KU011	PKHU	KD011	SKVD
K0012	132.1	KU012	PKHU	KD012	SKVD
KA013	133.2	KU013	PKVU	KD013	AKHD
KA014	133.2	KU014	PKVU	KD014	AKHD
KA015	133.2	KU015	PKVU	KD015	AKHD
KA016	133.2	KU016	PKVU	KD016	AKHD
KA017	133.2	KU017	PKVU	KD017	AKHD
KA018	133.2	KU018	PKVU	KD018	AKHD
KA019	133.2	KU019	PKVU	KD019	AKHD
KA020	133.2	KU020	PKVU	KD020	AKHD
KA021	133.2	KU021	PKVU	KD021	AKHD
KA022	133.2	KU022	PKVU	KD022	AKHD
KA023	133.2	KU023	PKVU	KD023	AKHD
KA024	133.2	KU024	PKVU	KD024	AKHD
K0013	133.5	KU013	PKVU	KD013	NKHD
K0014	133.5	KU014	PKVU	KD014	NKHD
K0015	133.5	KU015	PKVU	KD015	NKHD
K0016	133.5	KU016	PKVU	KD016	NKHD
K0017	133.5	KU017	PKVU	KD017	NKHD
K0018	133.5	KU018	PKVU	KD018	NKHD
K0019	133.5	KU019	PKVU	KD019	NKHD
K0020	133.5	KU020	PKVU	KD020	NKHD
K0021	133.5	KU021	PKVU	KD021	NKHD
K0022	133.5	KU022	PKVU	KD022	NKHD
K0023	133.5	KU023	PKVU	KD023	NKHD
K0024	133.5	KU024	PKVU	KD024	NKHD

KU022	36000	R	14396	V	C
KU023	36000	R	14436	V	C
KU024	36000	R	14476	V	C
KD001	36000	T	12286	V	C
KD002	36000	T	12326	V	C
KD003	36000	T	12366	V	C
KD004	36000	T	12406	V	C
KD005	36000	T	12446	V	C
KD006	36000	T	12486	V	C
KD007	36000	T	12526	V	C
KD008	36000	T	12566	V	C
KD009	36000	T	12606	V	C
KD010	36000	T	12646	V	C
KD011	36000	T	12686	V	C
KD012	36000	T	12726	V	C
KD013	36000	T	12286	H	C
KD014	36000	T	12326	H	C
KD015	36000	T	12366	H	C
KD016	36000	T	12406	H	C
KD017	36000	T	12446	H	C
KD018	36000	T	12486	H	C
KD019	36000	T	12526	H	C
KD020	36000	T	12566	H	C
KD021	36000	T	12606	H	C
KD022	36000	T	12646	H	C
KD023	36000	T	12686	H	C
KD024	36000	T	12726	H	C
CMD	1000	R	13998	R	T
TLM1	500	T	12747	H	T
TLM2	500	T	12748	V	T
TLM3	500	T	12747	L	T
TLM4	500	T	12748	L	T
ULPC	25	T	3702	H	T

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Page 7: Digital Modulation

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	4	24575	0.5		3.4	21
D2	10M3G7W	10300	4	6000	0.5		3.9	24.7
D3	100KG7W	100	4	64	0.5		3	23.6
D4	1M45G7W	1450	2	512	0.5		3.4	20.6
D5	400KG7W	400	2	128	0.5		3.4	23.8

Page 8: Analog Modulation

(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 Componder, Preemphasis, and Noise Weighting (dB)	(n) Total C/N Performance Objective (dB)	(o) Single Entry C/ Objective (dB)
					(f) Ave. Companded Talker Level (dBm0)	(g) Bottom Baseband Freq. (MHz)	(h) Top Baseband Freq. (MHz)	(i) RMS Modulation Index						

Page 9: Typical Emissions

[illegible]

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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: 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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**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?	☒	YES	☐	NO	☐	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?	☐	YES	☐	NO	☒	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?	☒	YES	☐	NO	☐	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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