

**FEDERAL COMMUNICATIONS COMMISSION  
SATELLITE SPACE STATION AUTHORIZATIONS  
(Technical and Operational Description)**

**S1. GENERAL INFORMATION** Complete for all satellite applications.

a. Space Station or Satellite Network Name: INTELSAT 5		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): 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		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)		
5925	M	6425	M	R	Fixed Satellite Service
3700	M	4200	M	T	Fixed Satellite Service
14000	M	14250	M	R	Fixed Satellite Service
11450	M	11700	M	T	Fixed Satellite Service

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

a. Nominal Orbital Longitude (Degrees E/W): 157 E		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: PROVIDE C- AND KU-BAND SERVICE TO ASIA, AUSTRALIA, AND THE PACIFIC			
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):							

**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.
1	E		Asia, Pacific
2	E		Asia, Australia, Pacific
3	E		Indonesia, Malaysia, Phillipines
4	E		GLOBAL

**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														
PCH	R	28	20					0	1					0.6	-96.6	15	0.5
PCV	R	27.4	19.4					90	1					0.2	-96.2	15	0.5
PKH	R	28.3	20.3					0	2					2.9	-91.9	15	1
PCH	T	25.8	19.8					0	1		41.6						
PCV	T	25.5	19.5					90	1		41						
SKV	T	32.9	28.9					90	3		48.6						
CMD	R	22	17.9					0	4				-12.6	-104.8			
CMD	R	5	3.6						4				-25.3	-92.5			
CMD	R	2.1	-0.9					0	4				-22.4	-95			
TLM	T	20.4	17.8					0	4		9.2						
TLMP	T	5.8	5.2						4		10.2						
TLMB	T	1.6	-1.4					90	4		9						
UPC	T	18.6	15.6						4		11.4						
UPCL	T	18.6	15.6						4		11.4						

**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
PCH	R	C	157		pchu.gxt					
PKH	R	C	157		pkhu.gxt					
PCH	T	C	157		pchd.gxt	-161.3	-161.2	-161.1	-161	-160.9
PCV	T	C	157		pcvd.gxt	-161.9	-161.8	-161.7	-161.6	-161.5
SKV	T	C	157		skvd.gxt	-154.3	-154.2	-154.1	-154	-153.9
CMD	R	C	157		cmdg.gxt					
CMD	R	C	157		cmdp.gxt					
CMD	R	C	157	cmdb.pdf						
TLM	T	C	157		tlmg.gxt	-172	-171.9	-171.8	-171.7	-171.6
TLMP	T	C	157		tlmp.gxt	-171	-170.9	-170.8	-170.7	-170.6
TLMB	T	C	157	tlmb.pdf		-172.2	-172.1	-172	-171.9	-171.8
UPC	T	C	157	upcr.pdf		-159.8	-159.7	-159.6	-159.5	-159.4
UPCL	T	C	157	upcl.pdf		-159.8	-159.7	-159.6	-159.5	-159.4
PCV	R	C	157		pcvu.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)
CU001	36000	R	5945	V	C
CU003	36000	R	5985	V	C
CU005	36000	R	6025	V	C
CU007	36000	R	6065	V	C
CU009	36000	R	6105	V	C
CU011	36000	R	6145	V	C
CU013	36000	R	6185	V	C
CU015	36000	R	6225	V	C
CU017	36000	R	6265	V	C
CU019	36000	R	6305	V	C
CU021	36000	R	6345	V	C
CU023	36000	R	6385	V	C
CU002	36000	R	5945	H	C
CU004	36000	R	5985	H	C
CU006	36000	R	6025	H	C
CU008	36000	R	6065	H	C
CU010	36000	R	6105	H	C
CU012	36000	R	6145	H	C
CU014	36000	R	6185	H	C
CU016	36000	R	6225	H	C
CU018	36000	R	6265	H	C
CU020	36000	R	6305	H	C
CU022	36000	R	6345	H	C
CU024	36000	R	6385	H	C
CD001	36000	T	3720	H	C
CD003	36000	T	3760	H	C
CD005	36000	T	3800	H	C
CD007	36000	T	3840	H	C
CD009	36000	T	3880	H	C
CD011	36000	T	3920	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
C0001	121.9	CU001	PCVU	CD001	PCHD
C0003	121.9	CU003	PCVU	CD003	PCHD
C0005	121.9	CU005	PCVU	CD005	PCHD
C0007	121.9	CU007	PCVU	CD007	PCHD
C0009	121.9	CU009	PCVU	CD009	PCHD
C0011	121.9	CU011	PCVU	CD011	PCHD
C0013	121.9	CU013	PCVU	CD013	PCHD
C0015	121.9	CU015	PCVU	CD015	PCHD
C0017	121.9	CU017	PCVU	CD017	PCHD
C0019	121.9	CU019	PCVU	CD019	PCHD
C0021	121.9	CU021	PCVU	CD021	PCHD
C0023	121.9	CU023	PCVU	CD023	PCHD
C0002	121.4	CU002	PCHU	CD002	PCVD
C0004	121.4	CU004	PCHU	CD004	PCVD
C0006	121.4	CU006	PCHU	CD006	PCVD
C0008	121.4	CU008	PCHU	CD008	PCVD
C0010	121.4	CU010	PCHU	CD010	PCVD
C0012	121.4	CU012	PCHU	CD012	PCVD
C0014	121.4	CU014	PCHU	CD014	PCVD
C0016	121.4	CU016	PCHU	CD016	PCVD
C0018	121.4	CU018	PCHU	CD018	PCVD
C0020	121.4	CU020	PCHU	CD020	PCVD
C0022	121.4	CU022	PCHU	CD022	PCVD
C0024	121.4	CU024	PCHU	CD024	PCVD
K0013	123.7	KU013	PKHU	KD013	SKVD
K0014	123.7	KU014	PKHU	KD014	SKVD
K0015	123.7	KU015	PKHU	KD015	SKVD
K0016	123.7	KU016	PKHU	KD016	SKVD
K0017	123.7	KU017	PKHU	KD017	SKVD
K0018	123.7	KU018	PKHU	KD018	SKVD

CD013	36000	T	3960	H	C
CD015	36000	T	4000	H	C
CD017	36000	T	4040	H	C
CD019	36000	T	4080	H	C
CD021	36000	T	4120	H	C
CD023	36000	T	4160	H	C
CD002	36000	T	3720	V	C
CD004	36000	T	3760	V	C
CD006	36000	T	3800	V	C
CD008	36000	T	3840	V	C
CD010	36000	T	3880	V	C
CD012	36000	T	3920	V	C
CD014	36000	T	3960	V	C
CD016	36000	T	4000	V	C
CD018	36000	T	4040	V	C
CD020	36000	T	4080	V	C
CD022	36000	T	4120	V	C
CD024	36000	T	4160	V	C
KU013	36000	R	14019	H	C
KU014	36000	R	14060	H	C
KU015	36000	R	14101	H	C
KU016	36000	R	14142	H	C
KU017	36000	R	14183	H	C
KU018	36000	R	14224	H	C
KD013	36000	T	11476	V	C
KD014	36000	T	11517	V	C
KD015	36000	T	11558	V	C
KD016	36000	T	11599	V	C
KD017	36000	T	11640	V	C
KD018	36000	T	11681	V	C
KD019	36000	T	11219	V	C
CMD1	1000	R	14498	H	T
CMD2	1000	R	13999	R	T
CMD3	1000	R	14498	H	T
TLM1	500	T	11451	H	T
TLM2	500	T	11452	H	T
TLM3	500	T	11451	R	T
TLM4	500	T	11452	R	T
TLM5	500	T	11451	V	T

TLM6	500	T	11452	V	T
UPC1	25	T	11454	R	C
UPC2	25	T	11454	L	C



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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	4	36860	0.75		7.3	19.5
D2	9M00G7W	9000	4	9681	0.75		5	17.2
D3	1M43G7W	1434	4	1024	0.5		3.7	15.9
D4	222KG7W	222	4	256	0.75		5.6	17.8



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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 <sup>2</sup> /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
						(j) Min.	(k) Max.		(l) Min.	(m) Max.				
C0001	C0024	D1		1	36000	IS-5 Link Budge		54.5	18.3	24.3	35	41	-159.3	22.1
C0001	C0024	D2		4	9000	IS-5 Link Budge		45.1	17.7	23.7	26.1	32.1	-162.2	22.7
C0001	C0024	D3		25	1434	IS-5 Link Budge		41.4	13.6	19.6	18.1	24.1	-162	22.1
K0013	K0018	D1		1	36000	IS-5 Link Budge		48.7	17.2	23.3	41.5	47.6	-144.5	23.3
K0013	K0018	D2		4	9000	IS-5 Link Budge		48.7	11.8	17.9	32	38.1	-156.2	25
K0013	K0018	D3		25	1434	IS-5 Link Budge		48.7	3.5	9.6	23.5	29.6	-156.5	23.3
K0013	K0018	D4		162	222	IS-5 Link Budge		48.7	-4	2.1	15.9	22	-156.7	25
C0001	C0024	D4		162	222	IS-5 Link Budge		41.4	5.6	11.6	10	16	-162.7	22.7

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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: 11-15 Aruma St Regency Park			
S14b. City: Adelaide	S14c. County:	S14d. State/Country SA	S14e. Zip Code: 5010
S14f. Telephone Number: 61-8-84685214		S14g. Call Sign of Control Station (if appropriate):	

**Remote Control (TT C) Location(s):**

S14a: Street Address: 259-1 Yangjeon-ri, Gumseong-myeon, Gumsan-goon			
S14b. City: Chungnam	S14c. County:	S14d. State/Country	S14e. Zip Code: 312-700
S14f. Telephone Number: 82-41-752-1830		S14g. Call Sign of Control Station (if appropriate):	

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

S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

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
<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>						