

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: ATCONTACT83		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: 0	
c. Construction Completion Date:		g. Total Number of Transponders: 45		k. Total Common Carrier Transponder Bandwidth: 0 MHz	
d1. Est Launch Date Begin:	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 11250 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)		
28.35	G	28.6	G	R	Fixed Satellite Service
29.25	G	30.0	G	R	Fixed Satellite Service
18.3	G	18.8	G	T	Fixed Satellite Service
19.7	G	20.2	G	T	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 83 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): <u> </u> Degrees <u> </u> 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 initial 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	S		AAB

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			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)														
KTR	T	48	45	0.05		30	Y		1	2	31.6	63					
KRR	R	46.5	43.5	0.05		30	Y		1				504	19.5	-116.2		
KTB	T	18.5	15.5	0.1		30	N		1	2	31.6	33.5					
KRB	R	18.5	15.5	0.1		30	N		1				504	-8.5	-116.2		
TLM	T	48	45	0.05		30	N		1	2	0.25	42					
CMD	R	46.5	43.5	0.05		30	N		1				504	19.5	-116.2		
TLM	T	-3	-3	0.05		30	N		1	3	1	-3					
CMD	R	-2	-2	0.05		30	N		1				1154	-32.6	-116.2		

**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
KTR	T	C	-83	NTACT83e KTR T Co		-119	-118	-117	-117	-117
KTR	T	X	-83	NTACT83e KTR T Xp						
KRR	R	C	-83	NTACT83e KRR R Co						
KRR	R	X	-83	NTACT83e KRR R Xp						
KTB	T	C	-83	NTACT83e Beacon co		-119	-119	-118	-118	-118
KTB	T	X	-83	NTACT83e Beacon Xp						
KRB	R	C	-83	NTACT83e Beacon co						
KRB	R	X	-83	NTACT83e Beacon Xp						
TLM	T	C	-83	GSO T C.pdf		-120	-119	-118	-118	-118
TLM	T	X	-83	GSO T X.pdf						
CMD	R	C	-83	GSO R C.pdf						
CMD	R	X	-83	GSO R X.pdf						
TLM	T	C	-83	OMNI.pdf						
TLM	T	X	-83	OMNI.pdf						
CMD	R	C	-83	OMNI.pdf						
CMD	R	X	-83	OMNI.pdf						

**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)
KR001	125000	R	28412.5	L	C
KR002	125000	R	28537.5	L	C
KR003	125000	R	29312.5	L	C
KR004	125000	R	29437.5	L	C
KR005	125000	R	29562.5	L	C
KR006	125000	R	29687.5	L	C
KR007	125000	R	29812.5	L	C
KR008	125000	R	29937.5	L	C
KR009	125000	R	28412.5	R	C
KR010	125000	R	28537.5	R	C
KR011	125000	R	29312.5	R	C
KR012	125000	R	29437.5	R	C
KR013	125000	R	29562.5	R	C
KR014	125000	R	29687.5	R	C
KR015	125000	R	29812.5	R	C
KR016	125000	R	29937.5	R	C
KT001	250000	T	18425	L	C
KT002	250000	T	18675	L	C
KT003	250000	T	19825	L	C
KT004	250000	T	20075	L	C
KT005	250000	T	18425	R	C
KT006	250000	T	18675	R	C
KT007	250000	T	19825	R	C
KT008	250000	T	20075	R	C
BR1	2000	R	29996	R	T
BT1	2000	T	20196	L	T
SOS1	2000	R	29998	R	T
SOS2	2000	T	20198	L	T

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
CR01		KR001	KRR		
CR02		KR002	KRR		
CR03		KR003	KRR		
CR04		KR004	KRR		
CR05		KR005	KRR		
CR06		KR006	KRR		
CR07		KR007	KRR		
CR08		KR008	KRR		
CR09		KR009	KRR		
CR10		KR010	KRR		
CR11		KR011	KRR		
CR12		KR012	KRR		
CR13		KR013	KRR		
CR14		KR014	KRR		
CR15		KR015	KRR		
CR16		KR016	KRR		
CT01				KT001	KTR
CT02				KT002	KTR
CT03				KT003	KTR
CT04				KT004	KTR
CT05				KT005	KTR
CT06				KT006	KTR
CT07				KT007	KTR
CT08				KT008	KTR
SOS1		SOS1	CMD		
TO1		SOS1	CMDO		
SOS2				SOS2	TLM
TO2				SOS2	TLMO
BR1		BR1	KRB		
BT1				BT1	KTB

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)
COMT1	250MG7W	250000	4	224000	0.67		5.4	17.6
COMR1	3M50G7W	3500	4	2520	0.4		7.1	19.1
BT1	334KG7D	334	4	200	0.4		4.2	16.2
BR1	8K00G7D	8	4	5	0.4		4.2	16.2
SOST1	2M00G7D	2000	2	1000	1		15	27
SOSR1	1M00G7D	1000	2	500	1		15	27

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)	(o) Assoc. Stn Rec. G/T (dB/K)
CT01	CT08	COMT1		1				41			63	63		16
CR01	CR16	COMR1		34	3600			44.6	2.8	2.8	47.4	47.4		
SOS1	SOS1	SOSR1						59	17	17	77	77		
SOS2	SOS2	SOST1						55.5			42	42		28.9
TO1	TO1		SOS3					68.9	21.1	21.1	90	90		
TO2	TO2		SOS3					65.3			-3	-3		39.7

**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): Yes

**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:

S15a. Mass of spacecraft without fuel (kg): 2508	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 0		
S15c. Mass of spacecraft and fuel at launch (kg): 3154	S15f. Length (m): 4.8	S15i. Payload: 0.78
S15d. Mass of fuel, in orbit, at beginning of life (kg): 646	S15g. Width (m): 2.5	S15j. Bus: 0.93
S15e. Deployed Area of Solar Array (square meters): 38	S15h. Height (m): 2.5	S15k. Total: 0.72

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

Spacecraft Subsystem	Electrical Power (Watts) At Beginning of Life		Electrical Power (Watts) At End of Life	
	At Equinox	At Solstice	At Equinox	At Solstice
Payload (Watts):	(a): 8600	(f): 8170	(k): 7050	(p): 6696
Bus (Watts):	(b): 2100	(g): 2000	(l): 1720	(q): 1639
Total (Watts):	(c): 10700	(h): 10170	(m): 8770	(r): 8335
Solar Array (Watts):	(d): 11200	(i): 10670	(n): 9180	(s): 8745
Depth of Battery Discharge (%):	(e) 70 %	(j) 70 %	(o) 70 %	(t) 70 %

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 checked="" 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 checked="" 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.