

**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: USASAT 30A		e. Estimated Date of Placement into Service: 1/3/2008		i. Will the space station(s) operate on a Common Carrier Basis: N	
b. Construction Commencement Date: 8/1/2003		f. Estimated Lifetime of Satellite(s): 7 Years		j. Number of transponders offered on a common carrier basis: 0	
c. Construction Completion Date: 7/20/2007		g. Total Number of Transponders: 0		k. Total Common Carrier Transponder Bandwidth: 0 MHz	
d1. Est Launch Date Begin: 9/18/2007	d2. Est Launch Date End: 9/18/2007	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 0 MHz		i. Orbit Type: Mark all boxes that apply: <input type="checkbox"/> GSO <input checked="" 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)		
8025	M	8400	M	T	Earth Exploration Satellite Service
2025	M	2110	M	R	Earth Exploration Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

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S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System: 3 S4c. Celestial Reference Body (Earth, Sun, Moon, etc.): E
 S4b. Total Number of Orbital Planes in Network or System: 3 S4d. Orbit Epoch Date: 3/1/2014

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
1	1	97.36	5670	521	506	135.035	90			

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)
1	1	0

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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.
0	E	not applicable.gxt	N/A

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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				
										(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														
WB-L	T	29	28	1	0	30	Y			7	2.4	31.8					
WB-	T	29	28	1	0	30	Y			7	2.4	31.8					
NB	T	7	-9	0	0		N			2	3	11.8					
CMD	R	4	-10	0	0		N						580	-23.6			

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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)
WB-L	375000	T	8185	L	C
WB-R	375000	T	8185	R	C
NB-I	2695	T	8380	L	T
NB-Q	5800	T	8380	L	T
CMD	1316	R	2085.6875	R	T

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID

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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)
WB-L	375MG7D	375000	4	348387.2	0.871	0	19.9	32.5
WB-R	375MG7D	375000	4	348387.2	0.871	0	19.9	32.5
NB-I	2M70G7D	2695	2	32.768	0.5	0	19.9	32.5
NB-Q	5M80G7D	5800	2	524.288	0.5	0	11.2	32.5
CMD	1M32G1D	1316	2	64	1	0	18.8	

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S13. TYPICAL EMISSIONS For each planned type of emission provide:

Associated Transponder ID Range		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)
(a) Start	(b) End						(j) Min.	(k) Max.	(l) Min.	(m) Max.			

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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: 1601 Dry Creek Dr.			
S14b. City: Longmont	S14c. County: Boulder	S14d. State/Country CO	S14e. Zip Code: 80503
S14f. Telephone Number: 303-684-4589		S14g. Call Sign of Control Station (if appropriate):	

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 2050	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 383		
S15c. Mass of spacecraft and fuel at launch (kg): 2433	S15f. Length (m): 2.54	S15i. Payload: 0.9735
S15d. Mass of fuel, in orbit, at beginning of life (kg): 383	S15g. Width (m): 2.54	S15j. Bus: 0.866
S15e. Deployed Area of Solar Array (square meters): 13.1	S15h. Height (m): 3.94	S15k. Total: 0.8435

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): 56	(f): 56	(k): 56	(p): 56
Bus (Watts):	(b): 1954	(g): 1954	(l): 1954	(q): 1954
Total (Watts):	(c): 2010	(h): 2010	(m): 2010	(r): 2010
Solar Array (Watts):	(d): 3574	(i): 3440	(n): 2929	(s): 2819
Depth of Battery Discharge (%):	(e) 35 %	(j) 35 %	(o) 35 %	(t) 35 %

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

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.