FCC 312	
Schedule	S

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

Page 1: General, Frequency Bands, and GSO Orbit

a. Space Station or Satellite No USASAT30A (WV60+110)	etwork Name:	e. Estimated Date of Placement into Service: 3/31/2009		i Will the space station(s) operate on a Common Carrier Basis:			
b. Construction Commenceme 10/1/2006	nt Date:	f. Estimated Lifetime of Satellite(s): 7	Years	j. Number of transponders offered on a common carrier basis: 0			
c. Construction Completion Date: 10/1/2008		g. Total Number of Transponders: 0		k. Total Common Carrier Transponder Band 0	dwidth: MHz		
d1. Est Launch Date Begin: 10/31/2008	d2. Est Launch Date End: 12/1/2008	h. Total Transponder Bandwidth (no. transponders 0	x Bandwidth) MHz	I. Orbit Type: Mark all boxes that apply: GSO X	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.

Frequen	y Band Limits		
Lower Frequency (_Hz)	Lower Frequency (_Hz) a. Numeric b. Unit (K/M/G) Upper Frequency (_Hz) c. Numeric d. Unit (K/M/G)		f. Nature of Service(s): List all that apply to this band
a. Numeric b. Unit (K/M/G			

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

Page 2: NGSO Orbits

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S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System: 2 S4c. Celestial Reference Body (Earth, Sun, Moon, etc.): E

S4b. Total Number of Orbital Planes in Network or System: 2 S4d. Orbit Epoch Date: 3/21/2010

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.)	(I) Argument of Perigee (Degrees)	Active Se (m) Begin Angle	rvice Arc Rang (n) End Angle	e (Degrees) (o) Other
1	1	97.36	5670	521	496	156.763	90			
2	1	98.45	6013	795	780	156.251	90			

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)
1	1	0
2	1	0

Page 3: Service Areas

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S6. SERVICE AREA CHARACTERISTICS for each service area provide:

	ostal codes or ITU 3-ltr codes), satellites or Figure No. of
ID Station (Earth or File Name (GXT File) Service Area Diagram.	
Space)	

Page 4: Antenna Beams

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S7. SPACE STATION ANTENNA BEAM CHARACTERISTICS For each antenna beam provide:

(a)	(b)	Isotropic	Antenna	(e)	(f)	(g) Min.	(h) Polar-	(i) Polarization	(j) Service		Transmit				Receive		
Beam	T/R	Ga	ain	0	Rotational	Cross-	ization	Alignment Rel.	Area ID	(k)	(I) Effective	(m)	(n)	(o) G/T	(p) Min.	Input Atten	uator (dB)
ID	Mode		(d) Edge	Error	Error	Polar Iso-	Switch-	Equatorial		Input	Output	Max.	System	Max.	Saturation	(q) Max.	(r) Step
		(dBi)	(dBi)	(Degrees)	(Degrees)	lation (dB)	able? (Y/N)	Plane (Degrees)		Losses	Power (W)	EIRP			Flux Density	Value	Size
							,			(dB)		,	Temp (k)	(UD/K)	(dBW/m2)		
WB-L	Т	29	28	1	0	30	Υ			7	2.4	31.8					
WB-	T	29	28	1	0	30	Υ			7	2.4	31.8					
NB	Т	7	-9	0	0		N			2	3	11.8					
CMD	R	4	-10	0	0		N						580	-23.6	0		

Page 5: Beam Diagrams

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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)	(b)	(c) Co-or	(d) GSO	(e) NGSO Antenna Gain	(f) GSO Antenna		Max. Power F	Flux Density (dB	W/M2/Hz)	
Beam	T/R	Cross	Ref.	Contour Description	Gain Contour Data	At Angle of	Arrival above ho	orizontal (for em	ission with high	hest PFD)
ID	Mode	Polar Mode ("C"	Orbital Longitude	(Figure/Table/ Exhibit)	(GXT File)	(g) 5 Deg	(h) 10 Deg	(i) 15 Deg	(j) 20 Deg	(k) 25 Deg
		or" X")	(Deg. E/W)							

Page 6: Channels and Transponders

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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-RI	375000	Т	8185.0	R	С
WB-RQ	375000	Т	8185.0	R	С
WB-LI	375000	Т	8185.0	L	С
WB-LQ	375000	Т	8185.0	L	С
NB-I	65.5	Т	8380.0	L	Т
NB-Q	1048.6	Т	8380.0	L	Т
CMD	128	R	2085.6875	R	Т

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

Page 7: Digital Modulation

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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-RI	375MG7D	375000	2	348387.1	0.871	0	19.7	32.5
WB-RQ	375MG7D	375000	2	348387.1	0.871	0	19.7	32.5
WB-LI	375MG7D	375000	2	348387.1	0.871	0	19.7	32.5
WB-LQ	375MG7D	375000	2	348387.1	0.871	0	19.7	32.5
NB-I	2MG7D	65.5	2	32.768	0.5	0	19.7	32.5
NB-Q	2MG7D	1048.6	2	524.288	0.5	0	19.7	32.5
CMD	128KG1D	128	2	64	1			

Page 8: Analog Modulation

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S12. ANALOG MODULATION PARAMETERS For each analog emission provide:

(a)	(b) Emission	(c)	(d) Signal	(e)	Multi-channel Telephony			(j) Video	(k) Video	(I) Video	(m) SCPC/FM	(n) Total C/N	(o) Single	
Analo Mod.		Assigned Bandwidth (kHz)	Туре	Channels per Carrier	(f) Ave. Companded Talker Level (dBm0)	(g) Bottom Baseband Freq. (MHz)		(i) RMS Modulation Index	Standard NTSC, PAL, etc.	- 3 - 3	and SCPC/FM Modulation Index	Compander, Preemphasis, and Noise Weighting (dB)	Performance Objective (dB)	Entry C/I Objective (dB)

Page 9: Typical Emissions

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

	ciated			(e) Carriers	()	() - 3)	Receive Band (Assoc. Transmit Stn)			Transmit Band (This Space Station)			tion)	
(a) Start	er ID Range (b) End	(C) Digital (Table	(d) Analog (Table S12)	per Transponder	Spacing (kHz)	Reference (Table No.)	Dispersal Bandwidth (kHz)	(i)Assoc. Stn. Max.	Assoc. Stati Power		EIRP	(dBW)	Power Flux	(o)Assoc. Stn Rec. G/T
		S11)	, ,	Antenna Gain (dBi)	(j) Min.	(k) Max.	(I) Min.	(m) Max.	Density (dBW/m2/Hz)	(dB/K)				

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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): #Error

Remote Control (TT C) Location(s):

S14a: Street Address: DigitalGlobe MCC						
S14b. City: S14c. County: Longmont Boulder			S14d. State/Country CO	S14e. Zip Code: 80503		
Longmont	Douldel	_	00	80303		
S14f. Telephone Number:		S14g. Call Sign of Control Station (if appropriate):				
303-684-4857		RC E040264				

Page 10: TT and C

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Page 11: Characteristics and Certifications

S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a: Mass of spacecraft without fuel (kg): 2274	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): 2657	S15f. Length (m): 2.54	S15i. Payload: 0.93		
S15d. Mass of fuel, in orbit, at beginning of life (kg): 383	S15g. Width (m): 2.54	S15j. Bus: 0.843		
S15e. Deployed Area of Solar Array (square meters): 13.1	S15h. Height (m): 5.45	S15k. Total: 0.784		

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

Spacecraft Subsystem	Electrical Pov Beginnir	ver (Watts) At ng of Life	Electrical Power (Watts) At End of Life				
	At Equinox	At Solstice	At Equinox	At Solstice			
Payload (Watts):	^{(a):} 143	^{(f):} 143	^{(k):} 143	^{(p):} 143			
Bus (Watts):	^{(b):} 2210	^{(g):} 2210	^{(l):} 2210	^{(q):} 2210			
Total (Watts):	^{(c):} 2353	^{(h):} 2353	^(m) 2353	^{(r):} 2353			
Solar Array (Watts):	^{(d):} 3574	^{(i):} 3440	^{(n):} 3358	^{(s):} 3232			
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?:	YES	NO	X 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	X 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?	X 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.