

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

a. Space Station or Satellite Network Name: ORBVIEW-5		e. Estimated Date of Placement into Service: 4/1/2007		i. Will the space station(s) operate on a Common Carrier Basis: N	
b. Construction Commencement Date: 9/29/2004		f. Estimated Lifetime of Satellite(s): 7 Years		j. Number of transponders offered on a common carrier basis:	
c. Construction Completion Date: 1/3/2007		g. Total Number of Transponders: 4		k. Total Common Carrier Transponder Bandwidth: MHz	
d1. Est Launch Date Begin: 2/15/2007	d2. Est Launch Date End: 4/15/2007	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 370 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	8175	M	T	Earth Exploration Satellite Service
8175	M	8215	M	T	Earth Exploration Satellite Service
8215	M	8400	M	T	Earth Exploration Satellite Service
2025	M	2110	M	R	Earth Exploration Satellite Service

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

**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: 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: 2/15/2007

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	97.2785	5640	470	470	122.03	0	0	0	
2	1	98.1271	5906	684	684	124.1	0	0	0	

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
2	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.
DULLES	E		VA
BARROW	E		AK

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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			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)														
B1	T	26	3	1		21	N		DULLES	9	10	26.7					
B2	T	26	3	1		21	N		DULLES	9	10	26.7					
B3	T	5	-7	0		19	N		DULLES	10	1	-4.5					
B4	R	5	-7	0		19	N		DULLES				290	-40	-50.1		

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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) 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
B1	T	C				-161	-159.4	-157.9	-156.5	-155.3
B2	T	C				-157.1	-155.5	-154	-152.6	-151.4
B3	T	C				-154.6	-153	-151.5	-150.1	-148.9

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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)
CH1	370000	T	8210	R	C
CH2	150000	T	8210	R	C
CH3	59.7	T	8394	R	T
CH4	128	R	2092.6	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
T1				CH1	B1
T2				CH3	B3
R1		CH4	B4		

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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)
DM1	370MG1D	370000	4	370000				9.8
DM2	150MG1D	150000	4	150000				9.8
DM3	59K7G1D	59.7	4	59.7				9.8
DM4	128KG1D	128	2	128				9.8





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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) (j) Min.    (k) Max.		EIRP (dBW) (l) Min.    (m) Max.		(n) Max. Power Flux Density (dBW/m <sup>2</sup> /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
T1	T1	DM1		1							26.7	26.7	-149.2	29
T2	T2	DM3		1							-20	-4.5	-142.8	29

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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: 21700 Atlantic Blvd.			
S14b. City: Dulles	S14c. County: Loudon	S14d. State/Country VA	S14e. Zip Code: 20166
S14f. Telephone Number: 703-480-7500		S14g. Call Sign of Control Station (if appropriate): E980375	

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

S14a: Street Address:			
S14b. City: Barrow	S14c. County:	S14d. State/Country AK	S14e. Zip Code:
S14f. Telephone Number: 703-480-7500		S14g. Call Sign of Control Station (if appropriate): E980376	

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 1775	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 180		
S15c. Mass of spacecraft and fuel at launch (kg): 1955	S15f. Length (m): 6.15	S15i. Payload: 0.933
S15d. Mass of fuel, in orbit, at beginning of life (kg): 173.5	S15g. Width (m): 2.38	S15j. Bus: 0.769
S15e. Deployed Area of Solar Array (square meters): 18.2	S15h. Height (m): 4.09	S15k. Total: 0.717

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): 318	(f): 318	(k): 318	(p): 318
Bus (Watts):	(b): 1306	(g): 1306	(l): 1306	(q): 1306
Total (Watts):	(c): 1624	(h): 1624	(m): 1624	(r): 1624
Solar Array (Watts):	(d): 4559	(i): 4413	(n): 3911	(s): 3786
Depth of Battery Discharge (%):	(e) 27 %	(j) 27 %	(o) 27 %	(t) 27 %

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 type="checkbox"/> YES	<input type="checkbox"/> NO	<input checked="" 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.**