

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: VIASAT-77		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: 72	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) 100500 MHz	l. Orbit Type: Mark all boxes that apply: ☒ GSO ☐ 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)		
28.1	G	29.1	G	R	Fixed Satellite Service
29.5	G	30	G	R	Fixed Satellite Service
18.3	G	19.3	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): 77.3 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: The Commission has previously authorized ViaSat to use certain portions of the Ka-band spectrum at 77.3W.
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	0.05 Degrees	g. Westernmost: h. Easternmost:	
e. Toward East:	0.05 Degrees			
i. Reason for service are selection (Optional):				

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

Page 2: NGSO Orbits

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)
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NO NGSO DATA FILED

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

Page 3: Service Areas

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.
SA1			North America

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

Page 4: Antenna Beams

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				
		(c) Peak (dBi)	(d) Edge (dBi)							(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
G1U	R	53	52	0.05	0.05	26	N		SA1				1349	21.7	-100	20	1
G1UL	R	53	52	0.05	0.05	26	N		SA1				1349	21.7	-100	20	1
G2U	R	52.6	51.6	0.05	0.05	26	N		SA1				1349	21.3	-100	20	1
G2UL	R	52.6	51.6	0.05	0.05	26	N		SA1				1349	21.3	-100	20	1
G3U	R	53	52	0.05	0.05	26	N		SA1				1349	21.7	-100	20	1
G3UL	R	53	52	0.05	0.05	26	N		SA1				1349	21.7	-100	20	1
G4U	R	53.1	52.1	0.05	0.05	26	N		SA1				1349	21.8	-100	20	1
G4UL	R	53.1	52.1	0.05	0.05	26	N		SA1				1349	21.8	-100	20	1
G5U	R	52.9	51.9	0.05	0.05	26	N		SA1				1349	21.6	-100	20	1
G5UL	R	52.9	51.9	0.05	0.05	26	N		SA1				1349	21.6	-100	20	1
G6U	R	52.5	51.5	0.05	0.05	26	N		SA1				1349	21.2	-100	20	1
G6UL	R	52.5	51.5	0.05	0.05	26	N		SA1				1349	21.2	-100	20	1
G7U	R	52.1	51.1	0.05	0.05	26	N		SA1				1349	20.8	-100	20	1
G7UL	R	52.1	51.1	0.05	0.05	26	N		SA1				1349	20.8	-100	20	1
G8U	R	53.1	52.1	0.05	0.05	26	N		SA1				1349	21.8	-100	20	1
G8UL	R	53.1	52.1	0.05	0.05	26	N		SA1				1349	21.8	-100	20	1
G9U	R	51.8	50.8	0.05	0.05	26	N		SA1				1349	20.4	-100	20	1
G9UL	R	51.8	50.8	0.05	0.05	26	N		SA1				1349	20.4	-100	20	1
G10U	R	53.1	52.1	0.05	0.05	26	N		SA1				1349	21.8	-100	20	1
G10U	R	53.1	52.1	0.05	0.05	26	N		SA1				1349	21.8	-100	20	1
G11U	R	52.6	51.6	0.05	0.05	26	N		SA1				1349	21.3	-100	20	1
G11U	R	52.6	51.6	0.05	0.05	26	N		SA1				1349	21.3	-100	20	1
G12U	R	53	52	0.05	0.05	26	N		SA1				1349	21.6	-100	20	1
G12U	R	53	52	0.05	0.05	26	N		SA1				1349	21.6	-100	20	1
G13U	R	52.3	51.3	0.05	0.05	26	N		SA1				1349	21	-100	20	1
G13U	R	52.3	51.3	0.05	0.05	26	N		SA1				1349	21	-100	20	1
G14U	R	51.3	50.3	0.05	0.05	26	N		SA1				1349	20	-100	20	1
G14U	R	51.3	50.3	0.05	0.05	26	N		SA1				1349	20	-100	20	1
G15U	R	52.7	51.7	0.05	0.05	26	N		SA1				1349	21.4	-100	20	1

G15U	R	52.7	51.7	0.05	0.05	26	N		SA1				1349	21.4	-100	20	1
G16U	R	51.7	50.7	0.05	0.05	26	N		SA1				1349	20.4	-100	20	1
G16U	R	51.7	50.7	0.05	0.05	26	N		SA1				1349	20.4	-100	20	1
G17U	R	51	50	0.05	0.05	26	N		SA1				1349	19.7	-100	20	1
G17U	R	51	50	0.05	0.05	26	N		SA1				1349	19.7	-100	20	1
G18U	R	48.4	47.4	0.05	0.05	26	N		SA1				1349	17.1	-100	20	1
G19U	R	53.2	52.2	0.05	0.05	26	N		SA1				1349	21.9	-100	20	1
G19U	R	53.2	52.2	0.05	0.05	26	N		SA1				1349	21.9	-100	20	1
G20U	R	53	52	0.05	0.05	26	N		SA1				1349	21.7	-100	20	1
G20U	R	53	52	0.05	0.05	26	N		SA1				1349	21.7	-100	20	1
G1DL	T	52.3	51.3	0.05	0.05	30	N		SA1	4.5	9.3	62					
G1D	T	52.3	51.3	0.05	0.05	30	N		SA1	4.5	9.3	62					
G2DL	T	51.9	50.9	0.05	0.05	30	N		SA1	4.5	9.3	61.6					
G2D	T	51.9	50.9	0.05	0.05	30	N		SA1	4.5	9.3	61.6					
G3DL	T	52.3	51.3	0.05	0.05	30	N		SA1	4.5	9.3	62					
G3D	T	52.3	51.3	0.05	0.05	30	N		SA1	4.5	9.3	62					
G4DL	T	52.4	51.4	0.05	0.05	30	N		SA1	4.5	9.3	62.1					
G4D	T	52.4	51.4	0.05	0.05	30	N		SA1	4.5	9.3	62.1					
G5DL	T	52.3	51.3	0.05	0.05	30	N		SA1	4.5	9.3	62					
G5D	T	52.3	51.3	0.05	0.05	30	N		SA1	4.5	9.3	62					
G6DL	T	51.8	50.8	0.05	0.05	30	N		SA1	4.5	9.3	61.5					
G6D	T	51.8	50.8	0.05	0.05	30	N		SA1	4.5	9.3	61.5					
G7DL	T	51.5	50.5	0.05	0.05	30	N		SA1	4.5	9.3	61.2					
G7D	T	51.5	50.5	0.05	0.05	30	N		SA1	4.5	9.3	61.2					
G8DL	T	52.4	51.4	0.05	0.05	30	N		SA1	4.5	9.3	62.1					
G8D	T	52.4	51.4	0.05	0.05	30	N		SA1	4.5	9.3	62.1					
G9DL	T	51.2	50.2	0.05	0.05	30	N		SA1	4.5	9.3	60.9					
G9D	T	51.2	50.2	0.05	0.05	30	N		SA1	4.5	9.3	60.9					
G10D	T	52.4	51.4	0.05	0.05	30	N		SA1	4.5	9.3	62					
G10D	T	52.4	51.4	0.05	0.05	30	N		SA1	4.5	9.3	62					
G11D	T	52	51	0.05	0.05	30	N		SA1	4.5	9.3	61.7					
G11D	T	52	51	0.05	0.05	30	N		SA1	4.5	9.3	61.7					
G12D	T	52.3	51.3	0.05	0.05	30	N		SA1	4.5	9.3	62					
G12D	T	52.3	51.3	0.05	0.05	30	N		SA1	4.5	9.3	62					
G13D	T	51.7	50.7	0.05	0.05	30	N		SA1	4.5	9.3	61.4					
G13D	T	51.7	50.7	0.05	0.05	30	N		SA1	4.5	9.3	61.4					
G14D	T	50.8	49.8	0.05	0.05	30	N		SA1	4.5	9.3	60.5					
G15D	T	52	51	0.05	0.05	30	N		SA1	4.5	9.3	61.7					
G15D	T	52	51	0.05	0.05	30	N		SA1	4.5	9.3	61.7					

G16D	T	51.2	50.2	0.05	0.05	30	N		SA1	4.5	9.3	60.8					
G16D	T	51.2	50.2	0.05	0.05	30	N		SA1	4.5	9.3	60.8					
G17D	T	50.5	49.5	0.05	0.05	30	N		SA1	4.5	9.3	60.2					
G17D	T	50.5	49.5	0.05	0.05	30	N		SA1	4.5	9.3	60.2					
G18D	T	46.9	45.9	0.05	0.05	30	N		SA1	4.5	9.3	56.6					
G19D	T	52.5	51.5	0.05	0.05	30	N		SA1	4.5	9.3	62.2					
G14D	T	50.8	49.8	0.05	0.05	30	N		SA1	4.5	24.6	60.5					
G19D	T	52.5	51.5	0.05	0.05	30	N		SA1	4.5	9.3	62.2					
G20D	T	52.4	51.4	0.05	0.05	30	N		SA1	4.5	9.3	62					
G20D	T	52.4	51.4	0.05	0.05	30	N		SA1	4.5	9.3	62					
U1UL	R	53.4	48.4	0.05	0.05	26	N		SA1				1230	22.5	-100	20	1
U2UL	R	53.5	48.5	0.05	0.05	26	N		SA1				1230	22.6	-100	20	1
U3UL	R	53.5	48.5	0.05	0.05	26	N		SA1				1230	22.6	-100	20	1
U4UL	R	53.5	48.5	0.05	0.05	26	N		SA1				1230	22.6	-100	20	1
U5UL	R	53.4	48.4	0.05	0.05	26	N		SA1				1230	22.5	-100	20	1
U6UL	R	53.3	48.3	0.05	0.05	26	N		SA1				1230	22.4	-100	20	1
U7UL	R	53.2	48.2	0.05	0.05	26	N		SA1				1230	22.3	-100	20	1
U8U	R	53.5	48.5	0.05	0.05	26	N		SA1				1230	22.6	-100	20	1
U9U	R	53.5	48.5	0.05	0.05	26	N		SA1				1230	22.6	-100	20	1
U10U	R	53.6	48.6	0.05	0.05	26	N		SA1				1230	22.7	-100	20	1
U11U	R	53.6	48.6	0.05	0.05	26	N		SA1				1230	22.7	-100	20	1
U12U	R	53.5	48.5	0.05	0.05	26	N		SA1				1230	22.6	-100	20	1
U13U	R	53.4	48.4	0.05	0.05	26	N		SA1				1230	22.5	-100	20	1
U14U	R	53.3	48.3	0.05	0.05	26	N		SA1				1230	22.4	-100	20	1
U15U	R	53.5	48.5	0.05	0.05	26	N		SA1				1230	22.6	-100	20	1
U16U	R	53.5	48.5	0.05	0.05	26	N		SA1				1230	22.6	-100	20	1
U17U	R	53.6	48.6	0.05	0.05	26	N		SA1				1230	22.7	-100	20	1
U18U	R	53.6	48.6	0.05	0.05	26	N		SA1				1230	22.7	-100	20	1
U19U	R	53.6	48.6	0.05	0.05	26	N		SA1				1230	22.7	-100	20	1
U20U	R	53.5	48.5	0.05	0.05	26	N		SA1				1230	22.6	-100	20	1
U21U	R	53.4	48.4	0.05	0.05	26	N		SA1				1230	22.5	-100	20	1
U22U	R	53.4	48.4	0.05	0.05	26	N		SA1				1230	22.5	-100	20	1
U23U	R	53.5	48.5	0.05	0.05	26	N		SA1				1230	22.6	-100	20	1
U24U	R	53.6	48.6	0.05	0.05	26	N		SA1				1230	22.7	-100	20	1
U25U	R	53.6	48.6	0.05	0.05	26	N		SA1				1230	22.7	-100	20	1
U26U	R	53.6	48.6	0.05	0.05	26	N		SA1				1230	22.7	-100	20	1
U27U	R	53.6	48.6	0.05	0.05	26	N		SA1				1230	22.7	-100	20	1
U28U	R	53.5	48.5	0.05	0.05	26	N		SA1				1230	22.6	-100	20	1
U29U	R	53.3	48.3	0.05	0.05	26	N		SA1				1230	22.4	-100	20	1

U30U	R	53.3	48.3	0.05	0.05	26	N		SA1					1230	22.4	-100	20	1
U31U	R	53.4	48.4	0.05	0.05	26	N		SA1					1230	22.5	-100	20	1
U32U	R	53.5	48.5	0.05	0.05	26	N		SA1					1230	22.6	-100	20	1
U33U	R	53.6	48.6	0.05	0.05	26	N		SA1					1230	22.7	-100	20	1
U34U	R	53.6	48.6	0.05	0.05	26	N		SA1					1230	22.7	-100	20	1
U35U	R	53.6	48.6	0.05	0.05	26	N		SA1					1230	22.7	-100	20	1
U36U	R	53.5	48.5	0.05	0.05	26	N		SA1					1230	22.6	-100	20	1
U37U	R	53.3	48.3	0.05	0.05	26	N		SA1					1230	22.4	-100	20	1
U38U	R	53.4	48.4	0.05	0.05	26	N		SA1					1230	22.5	-100	20	1
U39U	R	53.5	48.5	0.05	0.05	26	N		SA1					1230	22.6	-100	20	1
U40U	R	53.5	48.5	0.05	0.05	26	N		SA1					1230	22.6	-100	20	1
U41U	R	53.5	48.5	0.05	0.05	26	N		SA1					1230	22.6	-100	20	1
U42U	R	53.5	48.5	0.05	0.05	26	N		SA1					1230	22.6	-100	20	1
U43U	R	53.4	48.4	0.05	0.05	26	N		SA1					1230	22.5	-100	20	1
U44U	R	53.5	48.5	0.05	0.05	26	N		SA1					1230	22.6	-100	20	1
U45U	R	53.5	48.5	0.05	0.05	26	N		SA1					1230	22.6	-100	20	1
U46U	R	53.4	48.4	0.05	0.05	26	N		SA1					1230	22.5	-100	20	1
U47U	R	53.3	48.3	0.05	0.05	26	N		SA1					1230	22.4	-100	20	1
U48U	R	53.3	48.3	0.05	0.05	26	N		SA1					1230	22.4	-100	20	1
U49U	R	53.2	48.2	0.05	0.05	26	N		SA1					1230	22.3	-100	20	1
U50U	R	53	48	0.05	0.05	26	N		SA1					1230	22.1	-100	20	1
U51U	R	49.1	45.1	0.05	0.05	26	N		SA1					1230	18.2	-100	20	1
U52U	R	53.1	48.1	0.05	0.05	26	N		SA1					1230	22.2	-100	20	1
U53U	R	53.4	48.4	0.05	0.05	26	N		SA1					1230	22.5	-100	20	1
U54U	R	52.5	47.5	0.05	0.05	26	N		SA1					1230	21.6	-100	20	1
U55U	R	52.3	47.3	0.05	0.05	26	N		SA1					1230	21.4	-100	20	1
U56U	R	52.1	47.1	0.05	0.05	26	N		SA1					1230	21.2	-100	20	1
U57U	R	51.8	46.8	0.05	0.05	26	N		SA1					1230	20.9	-100	20	1
U58U	R	51.5	46.5	0.05	0.05	26	N		SA1					1230	20.6	-100	20	1
U59U	R	51.2	46.2	0.05	0.05	26	N		SA1					1230	20.3	-100	20	1
U60U	R	50.6	45.6	0.05	0.05	26	N		SA1					1230	19.7	-100	20	1
U61U	R	50.3	45.3	0.05	0.05	26	N		SA1					1230	19.4	-100	20	1
U62U	R	49.9	44.9	0.05	0.05	26	N		SA1					1230	19	-100	20	1
U63U	R	49.5	44.5	0.05	0.05	26	N		SA1					1230	18.6	-100	20	1
U64U	R	49.1	44.1	0.05	0.05	26	N		SA1					1230	18.2	-100	20	1
U65U	R	52.4	47.4	0.05	0.05	26	N		SA1					1230	21.5	-100	20	1
U66U	R	52.4	47.4	0.05	0.05	26	N		SA1					1230	21.5	-100	20	1
U67U	R	52.4	47.4	0.05	0.05	26	N		SA1					1230	21.5	-100	20	1
U68U	R	52.1	47.1	0.05	0.05	26	N		SA1					1230	21.2	-100	20	1

U69U	R	52.2	47.2	0.05	0.05	26	N		SA1				1230	21.3	-100	20	1
U70U	R	52.1	47.1	0.05	0.05	26	N		SA1				1230	21.2	-100	20	1
U71U	R	51.9	46.9	0.05	0.05	26	N		SA1				1230	21	-100	20	1
U72U	R	51.8	46.8	0.05	0.05	26	N		SA1				1230	20.9	-100	20	1
U1D	T	52.9	47.9	0.05	0.05	30	N		SA1	4.5	24.6	66.8					
U2D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U3D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U4D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U5D	T	52.9	47.9	0.05	0.05	30	N		SA1	4.5	24.6	66.8					
U6D	T	52.8	47.8	0.05	0.05	30	N		SA1	4.5	24.6	66.7					
U7D	T	52.7	47.7	0.05	0.05	30	N		SA1	4.5	24.6	66.6					
U8DL	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U9DL	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U10D	T	53.1	48.1	0.05	0.05	30	N		SA1	4.5	24.6	67					
U11D	T	53.1	48.1	0.05	0.05	30	N		SA1	4.5	24.6	67					
U12D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U13D	T	52.9	47.9	0.05	0.05	30	N		SA1	4.5	24.6	66.8					
U14D	T	52.8	47.8	0.05	0.05	30	N		SA1	4.5	24.6	66.7					
U15D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U16D	T	53.1	48.1	0.05	0.05	30	N		SA1	4.5	24.6	67					
U17D	T	53.1	48.1	0.05	0.05	30	N		SA1	4.5	24.6	67					
U18D	T	53.1	48.1	0.05	0.05	30	N		SA1	4.5	24.6	67					
U19D	T	53.1	48.1	0.05	0.05	30	N		SA1	4.5	24.6	67					
U20D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U21D	T	52.9	47.9	0.05	0.05	30	N		SA1	4.5	24.6	66.8					
U22D	T	52.9	47.9	0.05	0.05	30	N		SA1	4.5	24.6	66.8					
U23D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U24D	T	53.1	48.1	0.05	0.05	30	N		SA1	4.5	24.6	67					
U25D	T	53.1	48.1	0.05	0.05	30	N		SA1	4.5	24.6	67					
U26D	T	53.1	48.1	0.05	0.05	30	N		SA1	4.5	24.6	67					
U27D	T	53.1	48.1	0.05	0.05	30	N		SA1	4.5	24.6	67					
U28D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U29D	T	52.9	47.9	0.05	0.05	30	N		SA1	4.5	24.6	66.8					
U30D	T	52.8	47.8	0.05	0.05	30	N		SA1	4.5	24.6	66.7					
U31D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U32D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U33D	T	53.1	48.1	0.05	0.05	30	N		SA1	4.5	24.6	67					
U34D	T	53.1	48.1	0.05	0.05	30	N		SA1	4.5	24.6	67					
U35D	T	53.1	48.1	0.05	0.05	30	N		SA1	4.5	24.6	67					

U36D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U37D	T	52.8	47.8	0.05	0.05	30	N		SA1	4.5	24.6	66.7					
U38D	T	52.9	47.9	0.05	0.05	30	N		SA1	4.5	24.6	66.8					
U39D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U40D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U41D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U42D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U43D	T	52.9	47.9	0.05	0.05	30	N		SA1	4.5	24.6	66.8					
U44D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U45D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U46D	T	53	48	0.05	0.05	30	N		SA1	4.5	24.6	66.9					
U47D	T	52.9	47.9	0.05	0.05	30	N		SA1	4.5	24.6	66.8					
U48D	T	52.9	47.9	0.05	0.05	30	N		SA1	4.5	24.6	66.8					
U49D	T	52.8	47.8	0.05	0.05	30	N		SA1	4.5	24.6	66.7					
U50D	T	52.6	47.6	0.05	0.05	30	N		SA1	4.5	24.6	66.5					
U51D	T	48.8	44.8	0.05	0.05	30	N		SA1	4.5	24.6	62.7					
U52D	T	52.7	47.7	0.05	0.05	30	N		SA1	4.5	24.6	66.6					
U53D	T	52.9	47.9	0.05	0.05	30	N		SA1	4.5	24.6	66.8					
U54D	T	52.2	47.2	0.05	0.05	30	N		SA1	4.5	24.6	66.1					
U55D	T	52	47	0.05	0.05	30	N		SA1	4.5	24.6	65.9					
U56D	T	51.8	46.8	0.05	0.05	30	N		SA1	4.5	24.6	65.7					
U57D	T	51.5	46.5	0.05	0.05	30	N		SA1	4.5	24.6	65.4					
U58D	T	51.3	46.3	0.05	0.05	30	N		SA1	4.5	24.6	65.2					
U59D	T	51	46	0.05	0.05	30	N		SA1	4.5	24.6	64.9					
U60D	T	50.4	45.4	0.05	0.05	30	N		SA1	4.5	24.6	64.3					
U61D	T	50.1	45.1	0.05	0.05	30	N		SA1	4.5	24.6	64					
U62U	T	49.8	44.8	0.05	0.05	30	N		SA1	4.5	24.6	63.7					
U63D	T	49.4	44.4	0.05	0.05	30	N		SA1	4.5	24.6	63.3					
U64D	T	49.1	45.1	0.05	0.05	30	N		SA1	4.5	24.6	63					
U65D	T	52	47	0.05	0.05	30	N		SA1	4.5	24.6	65.9					
U66D	T	52.1	47.1	0.05	0.05	30	N		SA1	4.5	24.6	66					
U67D	T	52.1	47.1	0.05	0.05	30	N		SA1	4.5	24.6	66					
U68D	T	51.8	46.8	0.05	0.05	30	N		SA1	4.5	24.6	65.7					
U69D	T	51.8	46.8	0.05	0.05	30	N		SA1	4.5	24.6	65.7					
U70D	T	51.8	46.8	0.05	0.05	30	N		SA1	4.5	24.6	65.7					
U71D	T	51.5	46.5	0.05	0.05	30	N		SA1	4.5	24.6	65.4					
U72D	T	51.5	46.5	0.05	0.05	30	N		SA1	4.5	24.6	65.4					

FEDERAL COMMUNICATIONS COMMISSION SATELLITE SPACE STATION AUTHORIZATIONS FCC Form 312 - Schedule S: (Technical and Operational Description)	Page 5: Beam Diagrams
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Page 5: Beam Diagrams

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

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

Page 6: Channels and Transponders

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)
UL01	500000	R	29750	R	C
UL02	500000	R	29750	L	C
UL03	1000000	R	28600	R	C
UL04	1000000	R	28600	L	C
DL01	500000	T	19950	L	C
DL02	500000	T	19950	R	C
DL03	1000000	T	18800	L	C
DL04	1000000	T	18800	R	C

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
FL01	111.9	UL03	G1UR	DL03	U53DL
FL02	111.9	UL04	G1UL	DL04	U2DR
FL03	112.4	UL01	G2UR	DL01	U69DL
FL04	112.4	UL02	G2UL	DL02	U66DR
FL05	112.4	UL03	G2UR	DL03	U68DL
FL06	112.4	UL04	G2UL	DL04	U65DR
FL07	112	UL01	G3UR	DL01	U64DL
FL08	112	UL02	G3UL	DL02	U71DR
FL09	112	UL03	G3UR	DL03	U70DL
FL10	112	UL04	G3UL	DL04	U67DR
FL11	111.8	UL01	G4UR	DL01	U8DL
FL12	111.8	UL02	G4UL	DL02	U1DR
FL13	111.8	UL03	G4UR	DL03	U9DL
FL14	111.8	UL04	G4UL	DL04	U72DR
FL15	112	UL01	G5UR	DL01	U10DL
FL16	112	UL04	G5UL	DL04	U4DR
FL17	112.5	UL01	G6UR	DL01	U12DL
FL18	112.5	UL02	G6UL	DL02	U3DR
FL19	112.5	UL03	G6UR	DL03	U11DL
FL20	112.5	UL04	G6UL	DL04	U6DR
FL21	112.8	UL01	G7UR	DL01	U14DL
FL22	112.8	UL02	G7UL	DL02	U5DR
FL23	112.8	UL03	G7UR	DL03	U13DL
FL24	112.8	UL04	G7UL	DL04	U15DR
FL25	111.8	UL01	G8UR	DL01	U23DL
FL26	111.8	UL02	G8UL	DL02	U7DR
FL27	111.8	UL03	G8UR	DL03	U22DL
FL28	111.8	UL04	G8UL	DL04	U17DR
FL29	113.2	UL01	G9UR	DL01	U25DL
FL30	113.2	UL02	G9UL	DL02	U16DR

FL31	113.2	UL03	G9UR	DL03	U24DL
FL32	113.2	UL04	G9UL	DL04	U19DR
FL33	111.9	UL01	G10UR	DL01	U27DL
FL34	111.9	UL03	G10UR	DL03	U26DL
FL35	111.9	UL04	G10UL	DL04	U31DR
FL36	112.3	UL01	G11UR	DL01	U29DL
FL37	112.3	UL02	G11UL	DL02	U18DR
FL38	112.3	UL03	G11UR	DL03	U28DL
FL39	112.3	UL04	G11UL	DL04	U21DR
FL40	112	UL01	G12UR	DL01	U38DL
FL41	112	UL02	G12UL	DL02	U20DR
FL42	112	UL03	G12UR	DL03	U37DL
FL43	112	UL04	G12UL	DL04	U33DR
FL44	112.7	UL01	G13UR	DL01	U40DL
FL45	112.7	UL02	G13UL	DL02	U30DR
FL46	112.7	UL03	G13UR	DL03	U39DL
FL47	112.7	UL04	G13UL	DL04	U35DR
FL48	113.7	UL01	G14UR	DL01	U42DL
FL49	113.7	UL02	G14UL	DL02	U32DR
FL50	113.7	UL03	G14UR	DL03	U41DL
FL51	113.7	UL04	G14UL	DL04	U44DR
FL52	112.2	UL01	G15UR	DL01	U47DL
FL53	112.2	UL02	G15UL	DL02	U34DR
FL54	112.2	UL03	G15UR	DL03	U48DL
FL55	112.2	UL04	G15UL	DL04	U46DR
FL56	113.2	UL01	G16UR	DL01	U50DL
FL57	113.2	UL02	G16UL	DL02	U36DR
FL58	113.2	UL03	G16UR	DL03	U52DL
FL59	113.2	UL04	G16UL	DL04	U49DR
FL60	114	UL02	G17UL	DL02	U43DR
FL61	114	UL03	G17UR	DL03	U54DL
FL62	114	UL04	G17UL	DL04	U55DR
FL63	116.5	UL02	G18UL	DL02	U45DR
FL64	116.5	UL04	G18UL	DL04	U62UR
FL65	111.7	UL01	G19UR	DL01	U51DL
FL66	111.7	UL02	G19UL	DL02	U57DR
FL67	111.7	UL03	G19UR	DL03	U58DL
FL68	111.7	UL04	G19UL	DL04	U59DR
FL69	111.9	UL01	G20UR	DL01	U56DL

FL70	111.9	UL02	G20UL	DL02	U61DR
FL71	111.9	UL03	G20UR	DL03	U63DL
FL72	111.9	UL04	G20UL	DL04	U60DR
RL01	107.4	UL03	U53UR	DL03	G1DL
RL02	107.2	UL04	U2UL	DL04	G1DR
RL03	108.5	UL01	U69UR	DL01	G2DL
RL04	108.3	UL02	U66UL	DL02	G2DR
RL05	108.6	UL03	U68UR	DL03	G2DL
RL06	108.3	UL04	U65UL	DL04	G2DR
RL07	111.6	UL01	U64UR	DL01	G3DL
RL08	108.9	UL02	U71UL	DL02	G3DR
RL09	108.6	UL03	U70UR	DL03	G3DL
RL10	108.3	UL04	U67UL	DL04	G3DR
RL11	107.2	UL01	U8UR	DL01	G4DL
RL12	107.3	UL02	U1UL	DL02	G4DR
RL13	107.2	UL03	U9UR	DL03	G4DL
RL14	108.9	UL04	U72UL	DL04	G4DR
RL15	107.1	UL01	U10UR	DL01	G5DL
RL16	107.2	UL04	U4UL	DL04	G5DR
RL17	107.2	UL01	U12UR	DL01	G6DL
RL18	107.2	UL02	U3UL	DL02	G6DR
RL19	107.1	UL03	U11UR	DL03	G6DL
RL20	107.4	UL04	U6UL	DL04	G6DR
RL21	107.4	UL01	U14UR	DL01	G7DL
RL22	107.3	UL02	U5UL	DL02	G7DR
RL23	107.3	UL03	U13UR	DL03	G7DL
RL24	107.3	UL04	U15UL	DL04	G7DR
RL25	107.2	UL01	U23UR	DL01	G8DL
RL26	107.5	UL02	U7UL	DL02	G8DR
RL27	107.3	UL03	U22UR	DL03	G8DL
RL28	107.1	UL04	U17UL	DL04	G8DR
RL29	107.1	UL01	U25UR	DL01	G9DL
RL30	107.2	UL02	U16UL	DL02	G9DR
RL31	107.1	UL03	U24UR	DL03	G9DL
RL32	107.1	UL04	U19UL	DL04	G9DR
RL33	107.2	UL01	U27UR	DL01	G10DL
RL34	107.1	UL03	U26UR	DL03	G10DL
RL35	107.3	UL04	U31UL	DL04	G10DR
RL36	107.4	UL01	U29UR	DL01	G11DL

RL37	107.1	UL02	U18UL	DL02	G11DR
RL38	107.2	UL03	U28UR	DL03	G11DL
RL39	107.3	UL04	U21UL	DL04	G11DR
RL40	107.3	UL01	U38UR	DL01	G12DL
RL41	107.2	UL02	U20UL	DL02	G12DR
RL42	107.4	UL03	U37UR	DL03	G12DL
RL43	107.1	UL04	U33UL	DL04	G12DR
RL44	107.2	UL01	U40UR	DL01	G13DL
RL45	107.4	UL02	U30UL	DL02	G13DR
RL46	107.2	UL03	U39UR	DL03	G13DL
RL47	107.1	UL04	U35UL	DL04	G13DR
RL48	107.2	UL01	U42UR	DL01	G14DL
RL49	107.2	UL02	U32UL	DL02	G14DR
RL50	107.2	UL03	U41UR	DL03	G14DL
RL51	107.3	UL04	U44UL	DL04	G14DR
RL52	107.4	UL01	U47UR	DL01	G15DL
RL53	107.1	UL02	U34UL	DL02	G15DR
RL54	107.4	UL03	U48UR	DL03	G15DL
RL55	107.3	UL04	U46UL	DL04	G15DR
RL56	107.7	UL01	U50UR	DL01	G16DL
RL57	107.2	UL02	U36UL	DL02	G16DR
RL58	107.6	UL03	U52UR	DL03	G16DL
RL59	107.5	UL04	U49UL	DL04	G16DR
RL60	107.3	UL02	U43UL	DL02	G17DR
RL61	108.2	UL03	U54UR	DL03	G17DL
RL62	108.4	UL04	U55UL	DL04	G17DR
RL63	107.3	UL02	U45UL	DL02	G18DR
RL64	110.8	UL04	U62UL	DL04	G18DR
RL65	111.6	UL01	U51UR	DL01	G19DL
RL66	108.9	UL02	U57UL	DL02	G19DR
RL67	109.2	UL03	U58UR	DL03	G19DL
RL68	109.5	UL04	U59UL	DL04	G19DR
RL69	108.6	UL01	U56UR	DL01	G20DL
RL70	110.4	UL02	U61UL	DL02	G20DR
RL71	111.2	UL03	U63UR	DL03	G20DL
RL72	110.1	UL04	U60UL	DL04	G20DR

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

Page 7: Digital Modulation

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	500MG7D	500000	16	1107000	0.6642		10.3	20.3
D2	500MG7D	500000	8	746300	0.597		3.6	13.6
D3	500MG7D	500000	4	205900	0.247		-2.8	7.2
D4	6M25G7D	6250	8	8750	0.5833		6.2	16.2
D5	3M13G7D	3125	4	3750	0.75		4.9	14.9
D6	1M57G7D	1562.5	4	937.5	0.375		-0.1	9.9
D7	782KG7D	781.25	2	312.5	0.5		-1.3	8.7
D8	25M0G7D	25000	8	50000	0.8333		10.8	20.8

Page 8: Analog Modulation

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

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

Page 9: Typical Emissions

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.		
FL01	FL72	D1		1		LB1.doc		64.6	4.6	10.4	57.7	67	-122.1	25.6
FL01	FL72	D2		1		LB2.doc		64.6	4.6	10.4	57.7	67	-122.1	17.2
FL01	FL72	D3		1		LB3.doc		64.6	4.6	10.4	57.7	67	-122.1	17.2
RL01	RL72	D4		80	6250	LB4.doc		44.1	4.5	4.5	38.2	39.2	-130.9	37.6
RL01	RL72	D5		160	3125	LB5.doc		44.1	4.5	4.5	35.2	36.2	-130.9	37.6
RL01	RL72	D6		320	1562.5	LB6.doc		44.1	4.5	4.5	32.1	33.1	-130.9	37.6
RL01	RL72	D7		640	781.25	LB7.doc		44.1	2.3	2.3	29.1	30.1	-130.9	37.6
RL01	RL72	D8		20	25000	LB8.doc		64.6	-6.8	2.7	44.2	45.2	-130.9	37.6

**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): 3168	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 3050		
S15c. Mass of spacecraft and fuel at launch (kg): 6218	S15f. Length (m): 9.35	S15i. Payload: 0.71
S15d. Mass of fuel, in orbit, at beginning of life (kg): 350	S15g. Width (m): 26.05	S15j. Bus: 0.77
S15e. Deployed Area of Solar Array (square meters): 74.2	S15h. Height (m): 8.4	S15k. Total: 0.55

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): 10292	(f): 10292	(k): 10292	(p): 10292
Bus (Watts):	(b): 2988	(g): 1320	(l): 2988	(q): 1320
Total (Watts):	(c): 13280	(h): 11612	(m): 13280	(r): 11612
Solar Array (Watts):	(d): 14375	(i): 13000	(n): 13666	(s): 12855
Depth of Battery Discharge (%):	(e) 74.5 %	(j) %	(o) 74.5 %	(t) %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?:	☒ YES	☐ NO	☐ 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	☒ 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?	☒ 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.