

**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-2		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: 0		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) 0 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)		
28.1	G	28.35	G	R	Fixed Satellite Service
28.35	G	28.6	G	R	Fixed Satellite Service
28.6	G	29.1	G	R	Fixed Satellite Service
29.5	G	30	G	R	Fixed Satellite Service
29.5	G	30	G	R	Mobile-Satellite Service
18.3	G	18.8	G	T	Fixed Satellite Service
18.8	G	19.3	G	T	Fixed Satellite Service
19.7	G	20.2	G	T	Fixed Satellite Service
19.7	G	20.2	G	T	Mobile-Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 69.9 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: The Commission has authorized ViaSat to operate a Ka-band satellite at 69.9 W.L.	
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):		
d. Toward West: 0.05 Degrees	e. Toward East: 0.05 Degrees		g. Westernmost: _____ E/W _____ h. Easternmost: _____		
i. Reason for service are selection (Optional):					

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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

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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.
SA1	E		See attached PDF document.
SA2	E		North America
SA3	E		Visible Earth

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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)														
RXA	R	61	52.4	0.05	0.05	24	N		SA1					30.9	-105	1	1
RXAL	R	61	52.4	0.05	0.05	24	N		SA1					30.9	-105	1	1
TXAR	T	59.3	49.9	0.05	0.05	24	N		SA1			72.7					
TXAL	T	59.3	49.9	0.05	0.05	24	N		SA1			72.7					
RXB	R	53.6	44.9	0.05	0.05	24	N		SA1				22.2	-105	1	1	
RXBL	R	53.6	44.9	0.05	0.05	24	N		SA1				22.2	-105	1	1	
TXBR	T	50.2	43.2	0.05	0.05	24	N		SA1			64.3					
TXBL	T	50.2	43.2	0.05	0.05	24	N		SA1			64.3					
UPAT	R	61	52.4	0.05	0.05	24	N		SA1				30.9	-117	1	1	
DNA	T	30.5	26.5	0.05	0.05	24	N	90	SA2			31					
CUR	R	61	52.4	0.05	0.05	24	N		SA1				30.9	-117	1	1	
TDR	T	59.3	49.9	0.05	0.05	24	N		SA1			40					
OMN	R	9	1	0.05	0.05	24	N		SA3				-25	-82	1	1	
OMN	T	9	1	0.05	0.05	24	N		SA3			7					

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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
RXA	R	C	-69.9							
RXAL	R	C	-69.9							
RXB	R	C	-69.9							
RXBL	R	C	-69.9							
UPAT	R	C	-69.9							
CUR	R	C	-69.9							
OMN	R	C	-69.9							
TXAR	T	C	-69.9			-118	-118	-118	-118	-118
TXAL	T	C	-69.9			-118	-118	-118	-118	-118
TXBR	T	C	-69.9			-118	-118	-118	-118	-118
TXBL	T	C	-69.9			-118	-118	-118	-118	-118
DNA	T	C	-69.9			-131.1	-131.1	-131.1	-131.1	-131.1
TDR	T	C	-69.9			-122.1	-122.1	-122.1	-122.1	-122.1
OMN	T	C	-69.9			-155.1	-155.1	-155.1	-155.1	-155.1

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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)
UL01	500000	R	28350	R	C
UL02	500000	R	28350	L	C
UL03	500000	R	28850	R	C
UL04	500000	R	28850	L	C
UL05	500000	R	29750	R	C
UL06	500000	R	29750	L	C
DL01	500000	T	18550	L	C
DL02	500000	T	18550	R	C
DL03	500000	T	19050	L	C
DL04	500000	T	19050	R	C
DL05	500000	T	19950	L	C
DL06	500000	T	19950	R	C
CMD1	1000	R	29501	R	T
CMD2	1000	R	29999	R	T
TLM1	1000	T	18301	R	T
TLM2	1000	T	18303	R	T
UPAT	1000	R	29501	R	T
DNAT1	400	T	18799.6	V	T
DNAT2	1	T	18799.6	V	T

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
T001		UL01	RXAR		
T002		UL02	RXAL		
T003		UL03	RXAR		
T004		UL04	RXAL		
T005		UL05	RXAR		
T006		UL06	RXAL		
T007		UL01	RXBR		
T008		UL02	RXBL		
T009		UL03	RXBR		
T010		UL04	RXBL		
T011		UL05	RXBR		
T012		UL06	RXBL		
T013				DL01	TXAL
T014				DL02	TXAR
T015				DL03	TXAL
T016				DL04	TXAR
T017				DL05	TXAL
T018				DL06	TXAR
T019				DL01	TXBL
T020				DL02	TXBR
T021				DL03	TXBL
T022				DL04	TXBR
T023				DL05	TXBL
T024				DL06	TXBR
CMD1		CMD1	CUR		
CMD2		CMD2	CUR		
TLM1				TLM1	TDR
TLM2				TLM2	TDR
UPAT		UPAT	UPAT		
DNAT1				DNAT1	DNAT

DNAT2				DNAT2	DNAT
CMD3		CMD1	OMNRR		
CMD4		CMD2	OMNRR		
TLM3				TLM1	OMNTR
TLM4				TLM2	OMNTR

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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)
D1	500MG7D	500000						
D2	6M25G7D	6250						
D3	3M13G7D	3125						
D4	1M57G7D	1562.5						
D5	782KG7D	781.25						
D6	3M88G7D	3874						

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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:			
S14b. City:	S14c. County:	S14d. State/Country	S14e. Zip Code:
S14f. Telephone Number:		S14g. Call Sign of Control Station (if appropriate):	

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

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 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.						