

**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: EHOSTAR-6		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): 12 Years		j. Number of transponders offered on a common carrier basis: 0	
c. Construction Completion Date:		g. Total Number of Transponders: 32		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) 768 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)		
17.3	G	17.8	G	R	Feeder Link for Broadcasting Satellite Service in FSS
12.2	G	12.7	G	T	Broadcasting Satellite Service - Video

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 96.2 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: The EHOSTAR-6 satellite will operate pursuant to an authorization from Bermuda's Department of Telecommunications. The ITU Region 2 BSS Plan has assigned the 96.2W.L. location to Bermuda.	
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	0.5 Degrees		g. Westernmost: h. Easternmost:	
e. Toward East:		0.05 Degrees			
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	S		-4 dB contour of beams RXLC and RXRC
SA2	S		Bermuda and parts of the Caribbean

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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														
RXLC	R	33.8	29.8	0.12		30	N		SA1				590	6.1	-94.7	1	20
RXR	R	33.8	29.8	0.12		30	N		SA1				590	6.1	-94.7	1	20
TXLC	T	35.5	30.5	0.12		30	N		SA2	1.8	83.2	54.7					
TXRC	T	35.5	30.5	0.12		30	N		SA2	1.8	83.2	54.7					

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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
RXLC	R	C	-96.2		RXLC.gxt					
RXR	R	C	-96.2		RXRC.gxt					
TXLC	T	C	-96.2		TXLC.gxt					
TXRC	T	C	-96.2		TXRC.gxt					

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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)
U0001	24000	R	17324	R	C
U0003	24000	R	17353.16	R	C
U0005	24000	R	17382.32	R	C
U0007	24000	R	17411.48	R	C
U0009	24000	R	17440.64	R	C
U0011	24000	R	17469.8	R	C
U0013	24000	R	17498.96	R	C
U0015	24000	R	17528.12	R	C
U0017	24000	R	17557.28	R	C
U0019	24000	R	17586.44	R	C
U0021	24000	R	17615.6	R	C
U0023	24000	R	17644.76	R	C
U0025	24000	R	17673.92	R	C
U0027	24000	R	17703.08	R	C
U0029	24000	R	17732.24	R	C
U0031	24000	R	17761.4	R	C
U0002	24000	R	17338.58	L	C
U0004	24000	R	17367.74	L	C
U0006	24000	R	17396.9	L	C
U0008	24000	R	17426.06	L	C
U0010	24000	R	17455.22	L	C
U0012	24000	R	17484.38	L	C
U0014	24000	R	17513.54	L	C
U0016	24000	R	17542.7	L	C
U0018	24000	R	17571.86	L	C
U0020	24000	R	17601.02	L	C
U0022	24000	R	17630.18	L	C
U0024	24000	R	17659.34	L	C
U0026	24000	R	17688.5	L	C
U0028	24000	R	17717.66	L	C

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
T0001	126.6	U0001	RXRC	D0001	TXRC
T0003	126.6	U0003	RXRC	D0003	TXRC
T0005	126.6	U0005	RXRC	D0005	TXRC
T0007	126.6	U0007	RXRC	D0007	TXRC
T0009	126.6	U0009	RXRC	D0009	TXRC
T0011	126.6	U0011	RXRC	D0011	TXRC
T0013	126.6	U0013	RXRC	D0013	TXRC
T0015	126.6	U0015	RXRC	D0015	TXRC
T0017	126.6	U0017	RXRC	D0017	TXRC
T0019	126.6	U0019	RXRC	D0019	TXRC
T0021	126.6	U0021	RXRC	D0021	TXRC
T0023	126.6	U0023	RXRC	D0023	TXRC
T0025	126.6	U0025	RXRC	D0025	TXRC
T0027	126.6	U0027	RXRC	D0027	TXRC
T0029	126.6	U0029	RXRC	D0029	TXRC
T0031	126.6	U0031	RXRC	D0031	TXRC
T0002	126.6	U0002	RXLC	D0002	TXLC
T0004	126.6	U0004	RXLC	D0004	TXLC
T0006	126.6	U0006	RXLC	D0006	TXLC
T0008	126.6	U0008	RXLC	D0008	TXLC
T0010	126.6	U0010	RXLC	D0010	TXLC
T0012	126.6	U0012	RXLC	D0012	TXLC
T0014	126.6	U0014	RXLC	D0014	TXLC
T0016	126.6	U0016	RXLC	D0016	TXLC
T0018	126.6	U0018	RXLC	D0018	TXLC
T0020	126.6	U0020	RXLC	D0020	TXLC
T0022	126.6	U0022	RXLC	D0022	TXLC
T0024	126.6	U0024	RXLC	D0024	TXLC
T0026	126.6	U0026	RXLC	D0026	TXLC
T0028	126.6	U0028	RXLC	D0028	TXLC

U0030	24000	R	17746.82	L	C
U0032	24000	R	17775.98	L	C
D0001	24000	T	12224	R	C
D0003	24000	T	12253.16	R	C
D0005	24000	T	12282.32	R	C
D0007	24000	T	12311.48	R	C
D0009	24000	T	12340.64	R	C
D0011	24000	T	12369.8	R	C
D0013	24000	T	12398.96	R	C
D0015	24000	T	12428.12	R	C
D0017	24000	T	12457.28	R	C
D0019	24000	T	12486.44	R	C
D0021	24000	T	12515.6	R	C
D0023	24000	T	12544.76	R	C
D0025	24000	T	12573.92	R	C
D0027	24000	T	12603.08	R	C
D0029	24000	T	12632.24	R	C
D0031	24000	T	12661.4	R	C
D0002	24000	T	12238.58	R	C
D0004	24000	T	12267.74	R	C
D0006	24000	T	12296.9	R	C
D0008	24000	T	12326.06	R	C
D0010	24000	T	12355.22	R	C
D0012	24000	T	12384.38	R	C
D0014	24000	T	12413.54	R	C
D0016	24000	T	12442.7	R	C
D0018	24000	T	12471.86	R	C
D0020	24000	T	12501.02	R	C
D0022	24000	T	12530.18	R	C
D0024	24000	T	12559.34	R	C
D0026	24000	T	12588.5	R	C
D0028	24000	T	12617.66	R	C
D0030	24000	T	12646.82	R	C
D0032	24000	T	12675.98	R	C
CMD01	1000	R	17305	L	T
TLM01	800	T	12203	L	T
TLM02	800	T	12204	L	T

T0030	126.6	U0030	RXLC	D0030	TXLC
T0032	126.6	U0032	RXLC	D0032	TXLC
CMD01		CMD01	RXLC		
TLM01				TLM01	TXLC
TLM02				TLM02	TXLC

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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	24M0G7W	24000	4	19218	0.48		1.7	13.9
D2	24M0G7W	24000	4	28828	0.721		4.8	17

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S12. ANALOG MODULATION PARAMETERS For each analog emission provide:

(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 Compander, Preemphasis, and Noise Weighting (dB)	(n) Total C/N Performance Objective (dB)	(o) Single Entry C/I Objective (dB)
					(f) Ave. Companded Talker Level (dBm0)	(g) Bottom Baseband Freq. (MHz)	(h) Top Baseband Freq. (MHz)	(i) RMS Modulation Index						
A1	1M00F2D	1000		1									9	21.2
A2	800KG2D	800		1									9	21.2

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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 ² /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
T0001	T0032	D1		1		LB1.doc		65.7	6.3	19.3	44.8	49.8		14.3
T0001	T0032	D2		1		LB2.doc		65.7	6.3	19.3	44.8	49.8		17.6
CMD01	CMD01		A1	1		CMD LB.doc		62.2	-7.7	12.3				
TLM01	TLM02		A2	1		TLM LB.doc					10	16		39.8

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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: 335 Dish Drive			
S14b. City: Quickburg	S14c. County: Shenandoah	S14d. State/Country VA	S14e. Zip Code: 22847
S14f. Telephone Number: 540-477-5004		S14g. Call Sign of Control Station (if appropriate):	

Remote Control (TT C) Location(s):

S14a: Street Address: 801 North Dish Drive			
S14b. City: Gilbert	S14c. County: Maricopa	S14d. State/Country AZ	S14e. Zip Code: 85233
S14f. Telephone Number: 480-558-2778		S14g. Call Sign of Control Station (if appropriate):	

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Characteristics and
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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 1480.6	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 2219.8		
S15c. Mass of spacecraft and fuel at launch (kg): 3700.4	S15f. Length (m): 31.1	S15i. Payload: 0.83
S15d. Mass of fuel, in orbit, at beginning of life (kg): 548.2	S15g. Width (m): 8	S15j. Bus: 0.84
S15e. Deployed Area of Solar Array (square meters): 68.9	S15h. Height (m): 8.8	S15k. Total: 0.7

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): 6807	(f): 6826	(k): 6807	(p): 6826
Bus (Watts):	(b): 2212	(g): 1222	(l): 2212	(q): 1222
Total (Watts):	(c): 9019	(h): 8048	(m): 9019	(r): 8048
Solar Array (Watts):	(d): 11274	(i): 10110	(n): 7865	(s): 7130
Depth of Battery Discharge (%):	(e) 74.9 %	(j) %	(o) 74.9 %	(t) %

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.