

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

a. Space Station or Satellite Network Name: EHOSTAR-3		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): 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): 86.4 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection:  The EHOSTAR-3 satellite will operate under the UK Administration's IOMSAT-S21 ITU network, which is filed at 86.45 W.L. The satellite will operate at 86.4 W.L. in order to avoid collision with an operational satellite at 86.5 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): <u>      Degrees      </u> <u>      E/W      </u>	
d. Toward West:	0.05 Degrees	e. Toward East:		g. Westernmost:	
	0.05 Degrees			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	S		Union of the territory of Chile and the -2 dB contour of beams RXR and RXL
SA2	S		Union of the territory of Chile and the -8 dB contour of beams TXR and TXL
SA3	S		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				
										(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														
RXR	R	34.3	32.3	0.1		30	N		SA1				716	5.75	-99	20	1
RXL	R	34.3	32.3	0.1		30	N		SA1				716	5.75	-99	20	1
TXR	T	36.4	28.4	0.1		30	N		SA2	2.3	60.3	54.2					
TXL	T	36.4	28.4	0.1		30	N		SA2	2.3	67.6	54.7					
OMN	R	11.3	-0.5	0.1		30	N	90	SA3				1000	-18.7	-80		
OMN	T	8.4	-0.5	0.1		30	N	90	SA3	13.2	0.3	3.2					

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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
RXR	R	C	-86.4		RXR.gxt					
RXL	R	C	-86.4		RXL.gxt					
TXR	T	C	-86.4		TXR.gxt					
TXL	T	C	-86.4		TXL.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	129.7	U0001	RXR	D0001	TXR
T0003	129.7	U0003	RXR	D0003	TXR
T0005	129.7	U0005	RXR	D0005	TXR
T0007	129.7	U0007	RXR	D0007	TXR
T0009	129.7	U0009	RXR	D0009	TXR
T0011	129.7	U0011	RXR	D0011	TXR
T0013	129.7	U0013	RXR	D0013	TXR
T0015	129.7	U0015	RXR	D0015	TXR
T0017	129.7	U0017	RXR	D0017	TXR
T0019	129.7	U0019	RXR	D0019	TXR
T0021	129.7	U0021	RXR	D0021	TXR
T0023	129.7	U0023	RXR	D0023	TXR
T0025	129.7	U0025	RXR	D0025	TXR
T0027	129.7	U0027	RXR	D0027	TXR
T0029	129.7	U0029	RXR	D0029	TXR
T0031	129.7	U0031	RXR	D0031	TXR
T0002	129.7	U0002	RXL	D0002	TXL
T0004	129.7	U0004	RXL	D0004	TXL
T0006	129.7	U0006	RXL	D0006	TXL
T0008	129.7	U0008	RXL	D0008	TXL
T0010	129.7	U0010	RXL	D0010	TXL
T0012	129.7	U0012	RXL	D0012	TXL
T0014	129.7	U0014	RXL	D0014	TXL
T0016	129.7	U0016	RXL	D0016	TXL
T0018	129.7	U0018	RXL	D0018	TXL
T0020	129.7	U0020	RXL	D0020	TXL
T0022	129.7	U0022	RXL	D0022	TXL
T0024	129.7	U0024	RXL	D0024	TXL
T0026	129.7	U0026	RXL	D0026	TXL
T0028	129.7	U0028	RXL	D0028	TXL

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	L	C
D0004	24000	T	12267.74	L	C
D0006	24000	T	12296.9	L	C
D0008	24000	T	12326.06	L	C
D0010	24000	T	12355.22	L	C
D0012	24000	T	12384.38	L	C
D0014	24000	T	12413.54	L	C
D0016	24000	T	12442.7	L	C
D0018	24000	T	12471.86	L	C
D0020	24000	T	12501.02	L	C
D0022	24000	T	12530.18	L	C
D0024	24000	T	12559.34	L	C
D0026	24000	T	12588.5	L	C
D0028	24000	T	12617.66	L	C
D0030	24000	T	12646.82	L	C
D0032	24000	T	12675.98	L	C
CMD1	1500	R	17301.5	V	T
TLM1	1000	T	12201	V	T
TLM2	1000	T	12203	V	T
TLM3	1000	T	12699	V	T

T0030	129.7	U0030	RXL	D0030	TXL
T0032	129.7	U0032	RXL	D0032	TXL
CMD1		CMD1	OMNRV		
TLM1				TLM1	OMNTV
TLM2				TLM2	OMNTV
TLM3				TLM3	OMNTV

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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	27647	0.691		5.7	12.9
D2	24M0G7W	24000	4	30719	0.768		6.6	18.8
D3	25M8G7W	25800	8	41200	0.639		7.5	19.7



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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						
CMD	1M50F2D	1500		1									10	22.2
TLM	1M00G2D	1000		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 <sup>2</sup> /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
T0001	T0032	D1		1		LB1.docx		65.8	6.8	13.2	46.2	54.7		13.2
T0001	T0032	D2		1		LB2.docx		65.8	6.8	13.2	46.2	54.7		13.2
T0001	T0032	D3		1		LB3.docx		65.8	6.8	13.2	46.2	54.7		13.2
CMD1	CMD1		CMD	1		CMD LB.docx		63.8	18.8	30				
TLM1	TLM3		TLM	1		TLM LB.docx					1.1	3.2		

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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: 530 Echostar Drive			
S14b. City: Cheyenne	S14c. County: Laramie	S14d. State/Country WY	S14e. Zip Code: 82007
S14f. Telephone Number: 307-633-5460		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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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 1603	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 2070		
S15c. Mass of spacecraft and fuel at launch (kg): 3673	S15f. Length (m): 3.16	S15i. Payload: 0.85
S15d. Mass of fuel, in orbit, at beginning of life (kg): 440	S15g. Width (m): 1.82	S15j. Bus: 0.89
S15e. Deployed Area of Solar Array (square meters): 70.5	S15h. Height (m): 5.8	S15k. Total: 0.76

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): 6811.5	(f): 6811.9	(k): 6811.5	(p): 6811.9
Bus (Watts):	(b): 613.7	(g): 508.6	(l): 617.3	(q): 508.6
Total (Watts):	(c): 7428.8	(h): 7320.5	(m): 7428.8	(r): 7320.5
Solar Array (Watts):	(d): 8809.8	(i): 8082.4	(n): 8746	(s): 8020
Depth of Battery Discharge (%):	(e) 75 %	(j) 75 %	(o) 79.8 %	(t) 79.8 %

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.**