

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: EHOSTAR-85W		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: 24		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) 864 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)		
5925	M	6425	M	R	Fixed Satellite Service
3700	M	4200	M	T	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 84.9 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: The nominal 85°W.L. location was selected because the C-band frequencies at the slot recently became available for re-assignment. The 84.9°W.L. locati on was selected in order to to avoid an overlap of the station-keeping volume of other satellites that operate nominally at 85°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> </u> Degrees <u> </u> E/W	
d. Toward West:	0.05 Degrees	0.05 Degrees		g. Westernmost:	
e. Toward East:	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		CONUS + portions of Canada and Mexico
SA2	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														
RXH	R	32.1	26.1	0.12	0.1	30	Y	0	SA1				615	4.2	-102	20	1
RXV	R	32.1	26.1	0.12	0.1	30	Y	90	SA1				615	4.2	-102	20	1
TXH	T	30.7	24.7	0.12	0.1	30	Y	0	SA1	2.2	15.1	42.5					
TXV	T	30.7	24.7	0.12	0.1	30	Y	90	SA1	2.2	15.1	42.5					
OMN	R	4	-2	0.12	0.1	30	Y	0	SA2				9250	-35.7			
OMN	R	4	-2	0.12	0.1	30	Y	90	SA2				9250	-35.7			
OMN	T	4	-2	0.12	0.1	30	Y	0	SA2	4.3	5	11					
OMN	T	4	-2	0.12	0.1	30	Y	90	SA2	4.3	5	11					

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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
RXH	R	C	-84.9		RXH.gxt					
RXV	R	C	-84.9		RXV.gxt					
TXH	T	C	-84.9		TXH.gxt	-165.1	-164.4	-163.5	-162.5	-161.4
TXV	T	C	-84.9		TXV.gxt	-165.1	-164.4	-163.5	-162.5	-161.4
OMN	T	C	-84.9			-169	-169	-169	-169	-169
OMN	T	C	-84.9			-169	-169	-169	-169	-169

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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	36000	R	5945	V	C
U0003	36000	R	5985	V	C
U0005	36000	R	6025	V	C
U0007	36000	R	6065	V	C
U0009	36000	R	6105	V	C
U0011	36000	R	6145	V	C
U0013	36000	R	6185	V	C
U0015	36000	R	6225	V	C
U0017	36000	R	6265	V	C
U0019	36000	R	6305	V	C
U0021	36000	R	6345	V	C
U0023	36000	R	6385	V	C
U0002	36000	R	5965	H	C
U0004	36000	R	6005	H	C
U0006	36000	R	6045	H	C
U0008	36000	R	6085	H	C
U0010	36000	R	6125	H	C
U0012	36000	R	6165	H	C
U0014	36000	R	6205	H	C
U0016	36000	R	6245	H	C
U0018	36000	R	6285	H	C
U0020	36000	R	6325	H	C
U0022	36000	R	6365	H	C
U0024	36000	R	6405	H	C
D0001	36000	T	3720	H	C
D0003	36000	T	3760	H	C
D0005	36000	T	3800	H	C
D0007	36000	T	3840	H	C
D0009	36000	T	3880	H	C
D0011	36000	T	3920	H	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	119	U0001	RXV	D0001	TXH
T0003	119	U0003	RXV	D0003	TXH
T0005	119	U0005	RXV	D0005	TXH
T0007	119	U0007	RXV	D0007	TXH
T0009	119	U0009	RXV	D0009	TXH
T0011	119	U0011	RXV	D0011	TXH
T0013	119	U0013	RXV	D0013	TXH
T0015	119	U0015	RXV	D0015	TXH
T0017	119	U0017	RXV	D0017	TXH
T0019	119	U0019	RXV	D0019	TXH
T0021	119	U0021	RXV	D0021	TXH
T0023	119	U0023	RXV	D0023	TXH
T0002	119	U0002	RXH	D0002	TXV
T0004	119	U0004	RXH	D0004	TXV
T0006	119	U0006	RXH	D0006	TXV
T0008	119	U0008	RXH	D0008	TXV
T0010	119	U0010	RXH	D0010	TXV
T0012	119	U0012	RXH	D0012	TXV
T0014	119	U0014	RXH	D0014	TXV
T0016	119	U0016	RXH	D0016	TXV
T0018	119	U0018	RXH	D0018	TXV
T0020	119	U0020	RXH	D0020	TXV
T0022	119	U0022	RXH	D0022	TXV
T0024	119	U0024	RXH	D0024	TXV
TC1		CMD1	RXH		
TC2		CMD2	RXV		
TC3		CMD1	OMNRH		
TC4		CMD2	OMNRV		
TM1				TLM1	TXV
TM2				TLM2	TXH

D0013	36000	T	3960	H	C
D0015	36000	T	4000	H	C
D0017	36000	T	4040	H	C
D0019	36000	T	4080	H	C
D0021	36000	T	4120	H	C
D0023	36000	T	4160	H	C
D0002	36000	T	3740	V	C
D0004	36000	T	3780	V	C
D0006	36000	T	3820	V	C
D0008	36000	T	3860	V	C
D0010	36000	T	3900	V	C
D0012	36000	T	3940	V	C
D0014	36000	T	3980	V	C
D0016	36000	T	4020	V	C
D0018	36000	T	4060	V	C
D0020	36000	T	4100	V	C
D0022	36000	T	4140	V	C
D0024	36000	T	4180	V	C
CMD1	1000	R	5926	H	T
CMD2	1000	R	6424	V	T
TLM1	300	T	3701	V	T
TLM2	300	T	4199	H	T

TM3				TLM1	OMNTV
TM4				TLM2	OMNTH

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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	445KG7W	445	4	512	0.691		5.7	17.9
D2	1M78G7W	1778	4	2048	0.691		5.7	17.9
D3	6M33G7W	6330	4	8448	0.801		5.8	18
D4	36M0G7W	36000	8	58200	0.641		7.5	19.7
D5	36M0G7W	36000	4	50400	0.841		6.5	18.7

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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						
A1	1M00F2D	1000		1									10	22.2
A2	300KG2D	300		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)		EIRP (dBW)		(n) Max. Power Flux Density (dBW/m ² /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
						(j) Min.	(k) Max.		(l) Min.	(m) Max.				
T0001	T0024	D1		72	500	LB1.doc		47.5	-0.6	5.4	14.5	20.5	-162.4	22.4
T0001	T0024	D2		18	2000	LB2.doc		51.3	0	6	19.2	25.2	-163.8	23.5
T0001	T0024	D3		5	7200	LB3.doc		47.5	6.7	12.7	22.2	28.2	-166.3	26.7
T0001	T0024	D4		1		LB4.doc		53.5	19.5	25.5	36.5	42.5	-159.5	22.4
T0001	T0024	D5		1		LB5.doc		53.5	19.5	25.5	36.5	42.5	-159.5	22.4
TC1	TC2		A1	1		CMD Refl.doc		53.5	-8.6	-2.6				
TC3	TC4		A1	1		CMD Omni.doc		53.5	20.9	26.9				
TM1	TM2		A2	1		TLM Refl.doc					11	17	-163.2	26.2
TM3	TM4		A2	1		TLM Omni.doc					5	11	-169	33.3

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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: 85223
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): 920	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 1160		
S15c. Mass of spacecraft and fuel at launch (kg): 2080	S15f. Length (m): 14.7	S15i. Payload: 0.87
S15d. Mass of fuel, in orbit, at beginning of life (kg): 365	S15g. Width (m): 1.8	S15j. Bus: 0.85
S15e. Deployed Area of Solar Array (square meters): 24	S15h. Height (m): 3.8	S15k. Total: 0.74

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): 1510	(f): 1510	(k): 1510	(p): 1510
Bus (Watts):	(b): 930	(g): 580	(l): 930	(q): 580
Total (Watts):	(c): 2440	(h): 2090	(m): 2440	(r): 2090
Solar Array (Watts):	(d): 3600	(i): 3045	(n): 2800	(s): 2490
Depth of Battery Discharge (%):	(e) 75 %	(j) 75 %	(o) 75 %	(t) 75 %

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.