

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

a. Space Station or Satellite Network Name: EHOSTAR-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): 12 Years		j. Number of transponders offered on a common carrier basis: 0	
c. Construction Completion Date:		g. Total Number of Transponders: 16		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) 384 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
5.920	G	5.925	G	R	Space Operations Service
3.69	G	3.7	G	T	Space Operations Service
6.425	G	6.430	G	R	Space Operations Service

**S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:**

a. Nominal Orbital Longitude (Degrees E/W): 77.15 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection:  This nominal orbital location is registered at the ITU by the Mexican administration.	
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):					

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

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**

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

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.
SAC	S		Partial CONUS
SAM	S		Mexico
SAGBL	S		Visible Earth
SARX	S		Partial CONUS

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

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)														
RXC	R	31.4	25.4	0.12	0.2	30	N		SARX				513	4.3	-96	18	1.5
TXC	T	36.1	26.1	0.12	0.2	30	N		SAC	2.1	80.2	55.1					
TXM	T	36.1	26.1	0.12	0.2	30	N		SAM	2.1	80.2	55.1					
GBL	R	22	16.4	1		30	N		SAGBL				2818	-12.5			
GBL	T	18	12.4	1		30	N		SAGBL	4.7	0.5	10.3					
OMN	R	2	-3	1		30	N		SAGBL				1500	-29.8			
OMN	T	3	-3	1		30	N		SAGBL	1.9	3.9	8.9					

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

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
RXC	R	C	-77.15		RXC.gxt					
TXC	T	C	-77.15		TXC.gxt					
TXM	T	C	-77.15		TXM.gxt					
GBL	R	C	-77.15		GBLU.gxt					
GBL	T	C	-77.15		GBLD.gxt					
OMN	R	C	-77.15							
OMN	T	C	-77.15							

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

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)
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
U0030	24000	R	17746.82	L	C
U0032	24000	R	17775.98	L	C
CR002	800	R	6426.5	H	T
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

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
T0001	118	U0002	RXC	D0002	TXC
T0002	118	U0004	RXC	D0004	TXM
T0003	118	U0006	RXC	D0006	TXC
T0004	118	U0008	RXC	D0008	TXM
T0005	118	U0010	RXC	D0010	TXC
T0006	118	U0012	RXC	D0012	TXM
T0007	118	U0014	RXC	D0014	TXC
T0008	118	U0016	RXC	D0016	TXM
T0009	118	U0018	RXC	D0018	TXC
T0010	118	U0020	RXC	D0020	TXM
T0011	118	U0022	RXC	D0022	TXC
T0012	118	U0024	RXC	D0024	TXM
T0013	118	U0026	RXC	D0026	TXC
T0014	118	U0028	RXC	D0028	TXM
T0015	118	U0030	RXC	D0030	TXC
T0016	118	U0032	RXC	D0032	TXM
T001				TM001	GBLD
T002				TM002	GBLD
C001		CR001	GBLU		
T003				TM001	OMND
T004				TM002	OMND
C002		CR002	OMNU		

D0028	24000	T	12617.66	L	C
D0030	24000	T	12646.82	L	C
D0032	24000	T	12675.98	L	C
CR001	800	R	5923.5	H	T
TM001	800	T	3698.5	H	T
TM002	800	T	3699.5	H	T

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

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	17.9
D2	24M0G7W	24000	4	30719	0.768		6.6	18.8
D3	25M8G7W	25800	8	41200	0.639		7.5	19.7



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

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	800KG2D	800		1									9	21.2
TLM	800KG2D	800		1									9	21.2

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

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)			
(a) Start	(b) End	(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 <sup>2</sup> /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
									(j) Min.	(k) Max.	(l) Min.	(m) Max.		
C001	C001		CMD	1		CMD LB_horn.		53.1	11.7	15.7				
T001	T002		TLM	1		TLM LB_horn.d					5	10.6	27.2	
T0001	T0016	D1		1		DBS_CONUS_		65.7	-0.2	19.5	45.1	55.1	13.2	
T0001	T0016	D2		1		DBS_CONUS_		65.7	-0.2	19.5	45.1	55.1	13.2	
T0001	T0016	D3		1		DBS_CONUS_		65.7	-0.2	19.5	45.1	55.1	13.2	
T0001	T0016	D1		1		DBS_MEXICO_		65.7	-0.2	19.5	45.1	55.1	13.2	
T0001	T0016	D2		1		DBS_MEXICO_		65.7	-0.2	19.5	45.1	55.1	13.2	
T0001	T0016	D3		1		DBS_MEXICO_		65.7	-0.2	19.5	45.1	55.1	13.2	
C002	C002		CMD	1		CMD LB_omni.		53.1	22.7	25.7				
T003	T004		TLM	1		TLM LB_omni.d					3.9	8.9	27.2	

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

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):	

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

S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 1324	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 1541		
S15c. Mass of spacecraft and fuel at launch (kg): 2865	S15f. Length (m): 23.8	S15i. Payload: 0.92
S15d. Mass of fuel, in orbit, at beginning of life (kg): 422	S15g. Width (m): 4.6	S15j. Bus: 0.82
S15e. Deployed Area of Solar Array (square meters): 51.3	S15h. Height (m): 7.1	S15k. Total: 0.75

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): 3978	(f): 3878	(k): 3978	(p): 3878
Bus (Watts):	(b): 1075	(g): 617	(l): 1075	(q): 617
Total (Watts):	(c): 5053	(h): 4495	(m): 5053	(r): 4495
Solar Array (Watts):	(d): 7126	(i): 6307	(n): 5257	(s): 4910
Depth of Battery Discharge (%):	(e) 68.8 %	(j) %	(o) 68.8 %	(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.**