

**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: GALAXY 12		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:	
c. Construction Completion Date:		g. Total Number of Transponders: 24		k. Total Common Carrier Transponder Bandwidth: 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): 122.9 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: SERVE AS IN ORBIT BACK-UP FOR GALAXY 18	
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	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.
1	S		UNITED STATES
2	S		GLOBAL

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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														
CHU	R	30.7	26.7	0.12	0.12			0	1					3.5	-111.5	36	1
CVU	R	30.7	26.7	0.12	0.12			90	1					3.5	-111.5	36	1
CHD	T	29.5	25.5	0.12	0.12			0	1			44.2					
CVD	T	29.5	25.5	0.12	0.12			90	1			44.2					
OMN	R	2.1	0.1	0.12	0.12				2					-25.4	-87.5		
WCA	R	13.1	11.1	0.12	0.12				2					-14.4	-94		
CMD	R	30.7	20.7	0.12	0.12			0	1					-4.5	-114.7		
OMN	T	2.1	0.1	0.12	0.12				1			5.8					
WCA	T	13.1	11.1	0.12	0.12				1			4.8					
TLMT	T	29.5	19.5	0.12	0.12			90	1			20					

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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
CHU	R	C	-122.9		chup.gxt					
CVU	R	C	-122.9		cvup.gxt					
CHD	T	C	-122.9		chdn.gxt	-152	-149.5	-148.8	-148.7	-148.6
CVD	T	C	-122.9		cvdn.gxt	-152	-149.5	-148.8	-148.7	-148.6
OMN	R	C	-122.9		OMNC.gxt					
WCA	R	C	-122.9		WCAC.gxt					
CMD	R	C	-122.9		cmdc.gxt					
OMN	T	C	-122.9		OMNT.gxt	-175.5	-175.4	-175.2	-175.1	-175
WCA	T	C	-122.9		WCAT.gxt	-176.5	-176.4	-176.2	-176.1	-176
TLMT	T	C	-122.9		tlmt.gxt	-161.3	-161.2	-161	-160.9	-160.8

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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)
CU001	36000	R	5945	H	C
CU003	36000	R	5985	H	C
CU005	36000	R	6025	H	C
CU007	36000	R	6065	H	C
CU009	36000	R	6105	H	C
CU011	36000	R	6145	H	C
CU013	36000	R	6185	H	C
CU015	36000	R	6225	H	C
CU017	36000	R	6265	H	C
CU019	36000	R	6305	H	C
CU021	36000	R	6345	H	C
CU023	36000	R	6385	H	C
CU002	36000	R	5965	V	C
CU004	36000	R	6005	V	C
CU006	36000	R	6045	V	C
CU008	36000	R	6085	V	C
CU010	36000	R	6125	V	C
CU012	36000	R	6165	V	C
CU014	36000	R	6205	V	C
CU016	36000	R	6245	V	C
CU018	36000	R	6285	V	C
CU020	36000	R	6325	V	C
CU022	36000	R	6365	V	C
CU024	36000	R	6405	V	C
CD001	36000	T	3720	V	C
CD003	36000	T	3760	V	C
CD005	36000	T	3800	V	C
CD007	36000	T	3840	V	C
CD009	36000	T	3880	V	C
CD011	36000	T	3920	V	C

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
C0001		CU001	CHUP	CD001	CVDN
C0003		CU003	CHUP	CD003	CVDN
C0005		CU005	CHUP	CD005	CVDN
C0007		CU007	CHUP	CD007	CVDN
C0009		CU009	CHUP	CD009	CVDN
C0011		CU011	CHUP	CD011	CVDN
C0013		CU013	CHUP	CD013	CVDN
C0015		CU015	CHUP	CD015	CVDN
C0017		CU017	CHUP	CD017	CVDN
C0019		CU019	CHUP	CD019	CVDN
C0021		CU021	CHUP	CD021	CVDN
C0023		CU023	CHUP	CD023	CVDN
C0002		CU002	CVUP	CD002	CHDN
C0004		CU004	CVUP	CD004	CHDN
C0006		CU006	CVUP	CD006	CHDN
C0008		CU008	CVUP	CD008	CHDN
C0010		CU010	CVUP	CD010	CHDN
C0012		CU012	CVUP	CD012	CHDN
C0014		CU014	CVUP	CD014	CHDN
C0016		CU016	CVUP	CD016	CHDN
C0018		CU018	CVUP	CD018	CHDN
C0020		CU020	CVUP	CD020	CHDN
C0022		CU022	CVUP	CD022	CHDN
C0024		CU024	CVUP	CD024	CHDN

CD013	36000	T	3960	V	C
CD015	36000	T	4000	V	C
CD017	36000	T	4040	V	C
CD019	36000	T	4080	V	C
CD021	36000	T	4120	V	C
CD023	36000	T	4160	V	C
CD002	36000	T	3740	H	C
CD004	36000	T	3780	H	C
CD006	36000	T	3820	H	C
CD008	36000	T	3860	H	C
CD010	36000	T	3900	H	C
CD012	36000	T	3940	H	C
CD014	36000	T	3980	H	C
CD016	36000	T	4020	H	C
CD018	36000	T	4060	H	C
CD020	36000	T	4100	H	C
CD022	36000	T	4140	H	C
CD024	36000	T	4180	H	C
CMD1	1000	R	6424.5	H	T
CMD2	1000	R	6424.5	R	T
CMD3	1000	R	6424.5	R	T
TLM1	500	T	4198	V	T
TLM2	500	T	4199.875	V	T
TLM3	500	T	4198	L	T
TLM4	500	T	4199.875	L	T
TLM5	500	T	4198	L	T
TLM6	500	T	4199.875	L	T

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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	30M1G7W	30133	4	32767	0.5		5.1	17.3
D2	6M77G7W	6771.1	4	6000	0.5		3.9	16.1
D3	75K4G7W	75.4	4	64	0.5		3	15.2

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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	36M0F3F	36000	TV/FM	1					NTSC	12.8	2.6		10	22.2

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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)
C0001	C0024		A1	1		G12 Link Budg	4000	49.4	20	24	39.4	43.4	-147.9	23.6
C0001	C0024	D1		1		G12 Link Budg		49.4	20	24	40.2	44.2	-156.6	19.2
C0001	C0024	D2		2	10300	G12 Link Budg		49.4	7.3	11.3	33	37	-157.4	19.2
C0001	C0024	D3		256	100	G12 Link Budg		49.4	-13.1	-9.1	12.6	16.6	-158.3	19.2

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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: 3800 International Drive, N.W.			
S14b. City: Washington, D.C.	S14c. County:	S14d. State/Country DC	S14e. Zip Code: 20008
S14f. Telephone Number: 202-944-7701		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 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 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 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.								