

**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-9		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): 74.15 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: Provide C-band service to the United States	
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			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)														
CHU	R	33.1	27.1	0.2	0.19	33	Y	0	1					4.7	-93	14	2
CVU	R	30.6	24.6	0.2	0.19	33	Y	90	1					3.4	-91.7	14	2
CHD	T	29.9	25.9	0.2	0.19	33	Y		0			40.8					
CVD	T	29.4	25.4	0.2	0.19	33	Y	90	1			42					
OCM	R	3.8	2.8	0.2	0.19		N		2					-25.8			
OTL	T	2.9	1.9	0.2	0.19		N		2			7.9					

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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	74.15		CHUP.gxt					
CVU	R	C	74.15		CVUP.gxt					
CHD	T	C	74.15		CHDN.gxt	-152	-151.2	-151	-150.9	-150.8
CVD	T	C	74.15		CVDN.gxt	-152	-151.2	-151	-150.9	-150.8
OCM	R	C	74.15	OCMD.PDF						
OTL	T	C	74.15	OTLM.PDF		-170.1	-170	-169.9	-169.8	-169.7

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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)
UC1	36000	R	5945	V	C
UC3	36000	R	5985	V	C
UC5	36000	R	6025	V	C
UC7	36000	R	6065	V	C
UC9	36000	R	6105	V	C
UC11	36000	R	6145	V	C
UC13	36000	R	6185	V	C
UC15	36000	R	6225	V	C
UC17	36000	R	6265	V	C
UC19	36000	R	6305	V	C
UC21	36000	R	6345	V	C
UC23	36000	R	6385	V	C
UC2	36000	R	5965	H	C
UC4	36000	R	6005	H	C
UC6	36000	R	6045	H	C
UC8	36000	R	6085	H	C
UC10	36000	R	6125	H	C
UC12	36000	R	6165	H	C
UC14	36000	R	6205	H	C
UC16	36000	R	6245	H	C
UC18	36000	R	6285	H	C
UC20	36000	R	6325	H	C
UC22	36000	R	6365	H	C
UC24	36000	R	6405	H	C
DC1	36000	T	3720	H	C
DC3	36000	T	3760	H	C
DC5	36000	T	3800	H	C
DC7	36000	T	3840	H	C
DC9	36000	T	3880	H	C
DC11	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
1C	111.8	UC1	CVUP	DC1	CHDN
3C	111.8	UC3	CVUP	DC3	CHDN
5C	111.8	UC5	CVUP	DC5	CHDN
7C	111.8	UC7	CVUP	DC7	CHDN
9C	111.8	UC9	CVUP	DC9	CHDN
11C	111.8	UC11	CVUP	DC11	CHDN
13C	111.8	UC13	CVUP	DC13	CHDN
15C	111.8	UC15	CVUP	DC15	CHDN
17C	111.8	UC17	CVUP	DC17	CHDN
19C	111.8	UC19	CVUP	DC19	CHDN
21C	111.8	UC21	CVUP	DC21	CHDN
23C	111.8	UC23	CVUP	DC23	CHDN
2C	107.3	UC2	CHUP	DC2	CVDN
4C	107.3	UC4	CHUP	DC4	CVDN
6C	107.3	UC6	CHUP	DC6	CVDN
8C	107.3	UC8	CHUP	DC8	CVDN
10C	107.3	UC10	CHUP	DC10	CVDN
12C	107.3	UC12	CHUP	DC12	CVDN
14C	107.3	UC14	CHUP	DC14	CVDN
16C	107.3	UC16	CHUP	DC16	CVDN
18C	107.3	UC18	CHUP	DC18	CVDN
20C	107.3	UC20	CHUP	DC20	CVDN
22C	107.3	UC22	CHUP	DC22	CVDN
24C	107.3	UC24	CHUP	DC24	CVDN

DC13	36000	T	3960	H	C
DC15	36000	T	4000	H	C
DC17	36000	T	4040	H	C
DC19	36000	T	4080	H	C
DC21	36000	T	4120	H	C
DC23	36000	T	4160	H	C
DC2	36000	T	3740	V	C
DC4	36000	T	3780	V	C
DC6	36000	T	3820	V	C
DC8	36000	T	3860	V	C
DC10	36000	T	3900	V	C
DC12	36000	T	3940	V	C
DC14	36000	T	3980	V	C
DC16	36000	T	4020	V	C
DC18	36000	T	4060	V	C
DC20	36000	T	4100	V	C
DC22	36000	T	4140	V	C
DC24	36000	T	4180	V	C
CMD1	1000	R	6424.5	V	T
CMD2	1000	R	5925.5	H	T
TLM1	500	T	4199	H	T
TLM2	500	T	4199.875	H	T
TLM3	500	T	4199	V	T
TLM4	500	T	4199.875	V	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	36863	0.75		6.1	15.7
D2	4M15G7W	4154	4	6000	0.75		6.7	14
D3	1M21G7W	1212.8	4	1550	0.75		5.7	12.9
D4	75K4G7W	75.4	4	64	0.5		3	12.1

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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	2.56		10	17

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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.									
1C	23C		A1	1		GXY9-LINK BU	4000	52.8	18.4	24.4	36.8	40.8	-151.3	23.6
1C	23C	D1		1		GXY9-LINK BU		52.8	18.4	24.4	36.8	40.8	-160.1	21
1C	23C	D2		3	6875	GXY9-LINK BU		52.8	6.9	12.9	26.7	30.7	-161.5	21
1C	23C	D3		15	1550	GXY9-LINK BU		52.8	0.4	6.4	20.2	24.2	-162.7	21
1C	23C	D4		239	100	GXY9-LINK BU		52.8	-11.4	-5.4	8.4	12.4	-162.4	19.2
2C	24C		A1	1		GXY9-LINK BU	4000	52.8	17.1	23.1	38	42	-150.1	23.6
2C	24C	D1		1		GXY9-LINK BU		52.8	17.1	23.1	38	42	-158.8	19.2
2C	24C	D2		3	6875	GXY9-LINK BU		52.8	3.3	9.3	27.6	31.6	-160.6	21
2C	24C	D3		16	1550	GXY9-LINK BU		52.8	-3.1	2.9	21.2	25.2	-161.7	21
2C	24C	D4		273	100	GXY9-LINK BU		52.8	-15.3	-9.3	9	13	-161.8	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): #Error

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Characteristics and
Certifications**

S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

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

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

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 checked="" 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 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.