

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: GALAXY KA		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:	
c. Construction Completion Date:		g. Total Number of Transponders: 8		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) 880 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)		
29500	M	30000	M	R	Fixed Satellite Service
19700	M	20200	M	T	Fixed Satellite Service
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): 89.1 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: PROVIDE KA-BAND SERVICE TO THE CONTINENTAL UNITED STATES, HAWAII, PUERTO RICO AND PORTIONS OF ALASKA
Longitudinal Tolerance or E/W Station-Keeping:		f. Inclination Excursion or N/S Station-Keeping Tolerance:		
d. Toward West: 0.05 Degrees	e. Toward East: 0.05 Degrees	Range of orbital are in which adequate service can be provided (Optional): g. Westernmost: <u> </u> Degrees <u> </u> E/W 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		CONTINENTAL UNITED STATES, HAWAII, PUERTO RICO AND PORTIONS OF ALASKA
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														
NRF	R	35.5	31.5	0.11	0.11	30	N		1				795	6.5	-98.2	25	1
NRFL	R	35.5	31.5	0.11	0.11	30	N		1				795	6.5	-98.2	25	1
NTF	T	35	31	0.11	0.11	30	N		1	1	416.9	61.2					
NTFL	T	35	31	0.11	0.11	30	N		1	1	416.9	61.2					
CMD	R	35.5	25.5	0.11	0.11		N		1				5157	-1.6	-115		
CMD	R	13.2	10.2	0.11	0.11		N		2				917	-16.4	-100.2		
CMD	R	2.2	-0.8	0.11	0.11		N		02				2011	-30.8	-91.8		
TLM	T	35	25	0.11	0.11		N		1	1.5	0.28	29.5					
TLM	T	13.2	10.2	0.11	0.11		N		2	1.5	21.4	26.5					
TLM	T	2.7	-0.3	0.11	0.11		N		02	1.1	7.8	11.6					
ULP	T	20.2	17.6	0.11	0.11		N	90	2	1	0.32	15.2					

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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
NRF	R	C	-89.1		nrfr.gxt					
NRFL	R	C	-89.1		nrfl.gxt					
NTF	T	C	-89.1		ntfr.gxt	-119.2	-119.1	-119	-118.8	-118.7
NTFL	T	C	-89.1		ntfl.gxt	-119.2	-119.1	-119	-118.8	-118.7
CMD	R	C	-89.1		cmdc.gxt					
CMD	R	C	-89.1	cmdb.pdf						
TLM	T	C	-89.1		tlmc.gxt	-127.8	-127.6	-127.5	-127.4	-127.3
TLM	T	C	-89.1	tlmw.pdf		-130.8	-130.6	-130.5	-130.4	-130.3
TLM	T	C	-89.1	tlmb.pdf		-169.6	-169.5	-169.4	-169.3	-169.2
ULP	T	C	-89.1		ulpc.gxt	-132.1	-131.9	-131.8	-131.7	-131.6
CMD	R	C	-89.1	cmdw.pdf						

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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)
NR001	110000	R	29561	R	C
NR003	110000	R	29683	R	C
NR005	110000	R	29805	R	C
NR007	110000	R	29927	R	C
NR002	110000	R	29561	L	C
NR004	110000	R	29683	L	C
NR006	110000	R	29805	L	C
NR008	110000	R	29927	L	C
NT001	110000	T	19761	L	C
NT003	110000	T	19883	L	C
NT005	110000	T	20005	L	C
NT007	110000	T	20127	L	C
NT002	110000	T	19761	R	C
NT004	110000	T	19883	R	C
NT006	110000	T	20005	R	C
NT008	110000	T	20127	R	C
CMD1	1000	R	29996	R	T
CMD2	1000	R	29998	L	T
CMD3	1000	R	6422	H	T
TLM1	500	T	20195.5	R	T
TLM2	500	T	20196.5	R	T
TLM3	500	T	20195.5	L	T
TLM4	500	T	20196.5	L	T
TLM5	500	T	4198.75	H	T
TLM6	500	T	4199.25	H	T
UPC1	25	T	20199.5	V	T

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
N0001	139.8	NR001	NRFR	NT001	NTFL
N0003	139.8	NR003	NRFR	NT003	NTFL
N0005	139.8	NR005	NRFR	NT005	NTFL
N0007	139.8	NR007	NRFR	NT007	NTFL
N0002	139.8	NR002	NRFL	NT002	NTFR
N0004	139.8	NR004	NRFL	NT004	NTFR
N0006	139.8	NR006	NRFL	NT006	NTFR
N0008	139.8	NR008	NRFL	NT008	NTFR

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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	110MG7W	110000	4	86270	0.5		3.1	10.4
D2	10M3G7W	10300	4	6240	0.5		3.9	10.7
D3	100KG7W	100	4	70	0.5		3	9.5
D4	1M45G7W	1450	2	610	0.5		3.4	10.5
D5	400KG7W	400	2	150	0.5		3.4	21.5

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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)
N0001	N0008	D1		1		LINK BUDGET		63.6	17.7	21.7	57.2	61.2	-120.6	18.6
N0001	N0008	D2		7	10300	NOTE.txt		63.6	1.8	5.8	48.4	52.4	-118	18.1
N0001	N0008	D3		689	100	NOTE.txt		63.6	-17.8	-13.8	28.8	32.8	-118	17.8
N0001	N0008	D4		74	1450	NOTE.txt		63.6	-8.1	-4.1	38.5	42.5	-120.5	18.6
N0001	N0008	D5		275	400	NOTE.txt		44.4	-5.8	-1.8	21.7	25.7	-131.2	37.8

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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: 3400 INTERNATIONAL DRIVE, N.W.			
S14b. City: WASHINGTON	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:

S15a. Mass of spacecraft without fuel (kg): 2181	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 2399		
S15c. Mass of spacecraft and fuel at launch (kg): 4580	S15f. Length (m): 24.8	S15i. Payload: 0.882
S15d. Mass of fuel, in orbit, at beginning of life (kg): 633	S15g. Width (m): 6.4	S15j. Bus: 0.858
S15e. Deployed Area of Solar Array (square meters): 86.7	S15h. Height (m): 6.4	S15k. Total: 0.757

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): 7538	(f): 7538	(k): 7538	(p): 7538
Bus (Watts):	(b): 1508	(g): 1508	(l): 1508	(q): 1508
Total (Watts):	(c): 9046	(h): 9046	(m): 9046	(r): 9046
Solar Array (Watts):	(d): 12149	(i): 10945	(n): 11045	(s): 9950
Depth of Battery Discharge (%):	(e) 73.2 %	(j) %	(o) 76.3 %	(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.