

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: 16		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) 1760 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)		
28350	M	28600	M	R	Fixed Satellite Service
29250	M	30000	M	R	Fixed Satellite Service
18300	M	18800	M	T	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 PORTIONS OF SOUTH AMERICA, 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: 0.05 Degrees	Range of orbital arc in which adequate service can be provided (Optional): Degrees E/W		
d. Toward West:	0.05 Degrees		g. Westernmost: h. Easternmost:		
e. Toward East:	0.05 Degrees				
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		SOUTH AMERICA
3	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)														
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
SRF	R	35.5	31.5	0.11	0.11	30	N		2				795	6.5	-98.2	25	1
SRFL	R	35.5	31.5	0.11	0.11	30	N		2				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					
STFR	T	35	31	0.11	0.11	30	N		2	1	416.9	61.2					
STFL	T	35	31	0.11	0.11	30	N		2	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		3				917	-16.4	-100.2		
CMD	R	2.2	-0.8	0.11	0.11		N		03				2011	-30.8	-91.8		
TLM	T	35	25	0.11	0.11		N		1	1.5	0.28	29.5					
TLM	T	26.5	23.5	0.11	0.11		N		3	1.5	0.05	26.5					
TLM	T	2.7	-0.3	0.11	0.11		N		03	1.1	7.8	11.6					
ULP	T	20.2	17.6	0.11	0.11		N		903	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					
SRF	R	C	-89.1		srfr.gxt					
SRFL	R	C	-89.1		srfl.gxt					
NTF	T	C	-89.1		ntfr.gxt	-121.8	-121.7	-121.6	-121.4	-121.3
NTFL	T	C	-89.1		ntfl.gxt	-121.8	-121.7	-121.6	-121.4	-121.3
STFR	T	C	-89.1		stfr.gxt	-121.8	-121.7	-121.6	-121.4	-121.3
STFL	T	C	-89.1		stfl.gxt	-121.8	-121.7	-121.6	-121.4	-121.3
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	28414	R	C
NR003	110000	R	28536	R	C
NR005	110000	R	29317	R	C
NR007	110000	R	29439	R	C
NR009	110000	R	29561	R	C
NR011	110000	R	29683	R	C
NR013	110000	R	29805	R	C
NR015	110000	R	29927	R	C
NR002	110000	R	28414	L	C
NR004	110000	R	28536	L	C
NR006	110000	R	29317	L	C
NR008	110000	R	29439	L	C
NR010	110000	R	29561	L	C
NR012	110000	R	29683	L	C
NR014	110000	R	29805	L	C
NR016	110000	R	29927	L	C
NT001	110000	T	18364	L	C
NT003	110000	T	18486	L	C
NT005	110000	T	18608	L	C
NT007	110000	T	18730	L	C
NT009	110000	T	19761	L	C
NT011	110000	T	19883	L	C
NT013	110000	T	20005	L	C
NT015	110000	T	20127	L	C
NT002	110000	T	18364	R	C
NT004	110000	T	18486	R	C
NT006	110000	T	18608	R	C
NT008	110000	T	18730	R	C
NT010	110000	T	19761	R	C
NT012	110000	T	19883	R	C

(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
N0009	139.8	NR009	NRFR	NT009	NTFL
N0011	139.8	NR011	NRFR	NT011	NTFL
N0013	139.8	NR013	NRFR	NT013	NTFL
N0015	139.8	NR015	NRFR	NT015	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
N0010	139.8	NR010	NRFL	NT010	NTFR
N0012	139.8	NR012	NRFL	NT012	NTFR
N0014	139.8	NR014	NRFL	NT014	NTFR
N0016	139.8	NR016	NRFL	NT016	NTFR
S0001	139.8	SR001	SRFR	ST001	STFL
S0003	139.8	SR003	SRFR	ST003	STFL
S0005	139.8	SR005	SRFR	ST005	STFL
S0007	139.8	SR007	SRFR	ST007	STFL
S0009	139.8	SR009	SRFR	ST009	STFL
S0011	139.8	SR011	SRFR	ST011	STFL
S0013	139.8	SR013	SRFR	ST013	STFL
S0015	139.8	SR015	SRFR	ST015	STFL
S0002	139.8	SR002	SRFL	ST002	STFR
S0004	139.8	SR004	SRFL	ST004	STFR
S0006	139.8	SR006	SRFL	ST006	STFR
S0008	139.8	SR008	SRFL	ST008	STFR
S0010	139.8	SR010	SRFL	ST010	STFR
S0012	139.8	SR012	SRFL	ST012	STFR

NT014	11000	T	20005	R	C
NT016	11000	T	20127	R	C
SR001	11000	R	28414	R	C
SR003	11000	R	28536	R	C
SR005	11000	R	29317	R	C
SR007	11000	R	29439	R	C
SR009	11000	R	29561	R	C
SR011	11000	R	29683	R	C
SR013	11000	R	29805	R	C
SR015	11000	R	29927	R	C
SR002	11000	R	28414	L	C
SR004	11000	R	28536	L	C
SR006	11000	R	29317	L	C
SR008	11000	R	29439	L	C
SR010	11000	R	29561	L	C
SR012	11000	R	29683	L	C
SR014	11000	R	29805	L	C
SR016	11000	R	29927	L	C
ST001	11000	T	18364	L	C
ST003	11000	T	18486	L	C
ST005	11000	T	18608	L	C
ST007	11000	T	18730	L	C
ST009	11000	T	19761	L	C
ST011	11000	T	19883	L	C
ST013	11000	T	20005	L	C
ST015	11000	T	20127	L	C
ST002	11000	T	18364	R	C
ST004	11000	T	18486	R	C
ST006	11000	T	18608	R	C
ST008	11000	T	18730	R	C
ST010	11000	T	19761	R	C
ST012	11000	T	19883	R	C
ST014	11000	T	20005	R	C
ST016	11000	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

S0014	139.8	SR014	SRFL	ST014	STFR
S0016	139.8	SR016	SRFL	ST016	STFR
NS001	139.8	NR001	NRFR	ST001	STFL
NS003	139.8	NR003	NRFR	ST003	STFL
NS005	139.8	NR005	NRFR	ST005	STFL
NS007	139.8	NR007	NRFR	ST007	STFL
NS009	139.8	NR009	NRFR	ST009	STFL
NS011	139.8	NR011	NRFR	ST011	STFL
NS013	139.8	NR013	NRFR	ST013	STFL
NS015	139.8	NR015	NRFR	ST015	STFL
NS002	139.8	NR002	NRFL	ST002	STFR
NS004	139.8	NR004	NRFL	ST004	STFR
NS006	139.8	NR006	NRFL	ST006	STFR
NS008	139.8	NR008	NRFL	ST008	STFR
NS010	139.8	NR010	NRFL	ST010	STFR
NS012	139.8	NR012	NRFL	ST012	STFR
NS014	139.8	NR014	NRFL	ST014	STFR
NS016	139.8	NR016	NRFL	ST016	STFR
SN001	139.8	SR001	SRFR	NT001	NTFL
SN003	139.8	SR003	SRFR	NT003	NTFL
SN005	139.8	SR005	SRFR	NT005	NTFL
SN007	139.8	SR007	SRFR	NT007	NTFL
SN009	139.8	SR009	SRFR	NT009	NTFL
SN011	139.8	SR011	SRFR	NT011	NTFL
SN013	139.8	SR013	SRFR	NT013	NTFL
SN015	139.8	SR015	SRFR	NT015	NTFL
SN002	139.8	SR002	SRFL	NT002	NTFR
SN004	139.8	SR004	SRFL	NT004	NTFR
SN006	139.8	SR006	SRFL	NT006	NTFR
SN008	139.8	SR008	SRFL	NT008	NTFR
SN010	139.8	SR010	SRFL	NT010	NTFR
SN012	139.8	SR012	SRFL	NT012	NTFR
SN014	139.8	SR014	SRFL	NT014	NTFR
SN016	139.8	SR016	SRFL	NT016	NTFR

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

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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	14
D2	10M3G7W	10300	4	6240	0.5		3.9	13.5
D3	100KG7W	100	4	70	0.5		3	11.8
D4	1M45G7W	1450	2	610	0.5		3.4	13.5
D5	400KG7W	400	2	150	0.5		3.4	23.8

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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	SN016	D1		1		LINK BUDGET		63.6	17.5	21.5	57.2	61.2	-120.6	19.1
N0001	SN016	D2		7	10300	NOTE.txt		63.6	1.6	5.6	48.4	52.4	-118	18.3
N0001	SN016	D3		680	100	NOTE.txt		63.6	-18	-14	28.9	32.9	-118	17.9
N0001	SN016	D4		75	1450	NOTE.txt		63.6	-9.1	-5.1	37.8	41.8	-121.2	19.9
N0001	SN016	D5		275	307	NOTE.txt		46.1	-5.7	-1.7	23.7	27.7	-129.3	37.4
N0001	SN016	D1		1		NOTE.txt		63.6	17.7	21.7	57.2	61.2	-120.6	18.6
N0001	SN016	D2		7	10300	NOTE.txt		63.6	1.8	5.8	48.4	52.5	-118	18.1
N0001	SN016	D3		689	100	NOTE.txt		63.6	-17.8	-13.8	28.8	32.8	-118.1	17.8
N0001	SN016	D4		74	1450	NOTE.txt		63.6	-8.1	-4.1	38.5	42.5	-120.5	18.6
N0001	SN016	D5		275	400	NOTE.txt		44.4	-5.6	-1.6	21.7	25.7	-131.3	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): 3350	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 5193		
S15c. Mass of spacecraft and fuel at launch (kg): 8543	S15f. Length (m): 8.6	S15i. Payload: 0.882
S15d. Mass of fuel, in orbit, at beginning of life (kg): 1560	S15g. Width (m): 4.3	S15j. Bus: 0.858
S15e. Deployed Area of Solar Array (square meters): 86.7	S15h. Height (m): 8.6	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): 14560	(f): 14560	(k): 14560	(p): 14560
Bus (Watts):	(b): 2500	(g): 2500	(l): 2500	(q): 2500
Total (Watts):	(c): 17060	(h): 17060	(m): 17060	(r): 17060
Solar Array (Watts):	(d): 22596	(i): 20174	(n): 20357	(s): 18340
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 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.