

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: DIRECTV 15		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: 38		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) 1520 MHz		l. Orbit Type: Mark all boxes that apply: ☒ GSO ☐ 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)		
18300	M	18590	M	T	Direct to Home in the Fixed Fixed Satellite Service
19700	M	20200	M	T	Direct to Home in the Fixed Fixed Satellite Service
28350	M	28600	M	R	Fixed Satellite Service
29250	M	29290	M	R	Fixed Satellite Service
17300	M	17800	M	R	Fixed Satellite Service
12200	M	12700	M	T	Broadcasting Satellite Service - Video

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 102.75 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection:
Longitudinal Tolerance or E/W Station-Keeping:		f. Inclination Excursion or N/S Station-Keeping Tolerance: 0.05 Degrees	Range of orbital are in which adequate service can be provided (Optional): g. Westernmost: h. Easternmost:	
d. Toward West:	0.025 Degrees			
e. Toward East:	0.025 Degrees			
i. Reason for service are selection (Optional):				

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Page 2: NGSO Orbits

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)
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NO NGSO DATA FILED

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Page 3: Service Areas

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.
CONUS+	E		Contiguous US plus AK
HI	E		Hawaii
PR	E		Puerto Rico
LABC	E		Area around DIRECTV LA Broadcast center
CRBC	E		Area around DIRECTV CO Broadcast Center

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Page 4: Antenna Beams

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)	
		(c) Peak (dBi)	(d) Edge (dBi)													(q) Max. Value	(r) Step Size
KAU	T	37.8	29.8	0.1		27	Y		CONUS+			59.5					
KAHI	T	48.8	44.8	0.1		27	Y		HI			59.5					
KAP	T	49.2	47.2	0.1		27	Y		PR			59.5					
KUU	T	35.2	27.2	0.1		27	Y		CONUS+			59					
KUHI	T	46.5	44.5	0.1		27	Y		HI			60.8					
KUP	T	46.6	44.6	0.1		27	Y		PR			61					
KALA	R	53.3	49.3	0.1		27	Y		LABC					21	-107.2	1	1
KAC	R	53	49	0.1		27	Y		CRBC					21	-107.2	1	1
KULA	R	49.5	45.5	0.1		27	Y		LABC					18.4	-99.4	1	1
KUC	R	49.5	45.5	0.1		27	Y		CRBC					18.4	-99.5	1	1
KBU	T	37.9	29.9	0.1		27	Y		CONUS+			59.5					

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Page 5: Beam Diagrams

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
KBU	T	C	-102.75		5_103W_CONUS_B..g	-126	-124	-124	-124	-124
KAU	T	C	-102.75		5_103W_CONUS_A..g					
KAHI	T	C	-102.75		15_103W_HAWAII.g	-118	-118	-118	-118	-120
KAP	T	C	-102.75		D15_103W_P.R..gxt	-118	-118	-118	-118	-118
KALA	R	C	-102.75		15_103W_LABC_Rx.g					
KAC	R	C	-102.75		15_103W_CRBC_Rx.g					
KUU	T	C	-101		15_101W_CONUS.g					
KUHI	T	C	-101		15_101W_HAWAII.g					
KUP	T	C	-101		D15_101W_P.R..gxt					
KULA	R	C	-101		15_101W_LABC_RX.g					
KUC	R	C	-101		15_101W_CRBC_RX.g					

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Page 6: Channels and Transponders

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)
AR002	36000	R	29530	L	C
AR004	36000	R	29570	L	C
AR006	36000	R	29610	L	C
AR008	36000	R	29650	L	C
AR010	36000	R	29690	L	C
AR012	36000	R	29730	L	C
AR014	36000	R	29770	L	C
AR016	36000	R	29810	L	C
AR018	36000	R	29850	L	C
AR020	36000	R	29890	L	C
AR022	36000	R	29930	L	C
AR024	36000	R	29970	L	C
BR001	36000	R	28375	R	C
BR003	36000	R	28415	R	C
BR005	36000	R	28455	R	C
BR007	36000	R	28495	R	C
BR009	36000	R	28535	R	C
BR011	36000	R	28575	R	C
BR002	36000	R	28375	L	C
BR004	36000	R	28415	L	C
BR006	36000	R	28455	L	C
BR008	36000	R	28495	L	C
BR010	36000	R	28535	L	C
BR012	36000	R	28575	L	C
BR013	36000	R	29269	R	C
BR014	36000	R	29269	L	C
AR001	36000	R	29530	R	C
AR003	36000	R	29570	R	C
AR005	36000	R	29610	R	C
AR007	36000	R	29650	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
AL001	1	AR001	KALA	AT001	KAUS
AL003	1	AR003	KALA	AT003	KAUS
AL005	1	AR005	KALA	AT005	KAUS
AL007	1	AR007	KALA	AT007	KAUS
AL009	1	AR009	KALA	AT009	KAUS
AL011	1	AR011	KALA	AT011	KAUS
AL013	1	AR013	KALA	AT013	KAUS
AL015	1	AR015	KALA	AT015	KAUS
AL017	1	AR017	KALA	AT017	KAUS
AL019	1	AR019	KALA	AT019	KAUS
AL021	1	AR021	KALA	AT021	KAUS
AL023	1	AR023	KALA	AT023	KAUS
AL002	1	AR002	KALA	AT002	KAUS
AL004	1	AR004	KALA	AT004	KAUS
AL006	1	AR006	KALA	AT006	KAUS
AL008	1	AR008	KALA	AT008	KAUS
AL010	1	AR010	KALA	AT010	KAUS
AL012	1	AR012	KALA	AT012	KAUS
AL014	1	AR014	KALA	AT014	KAUS
AL016	1	AR016	KALA	AT016	KAUS
AL018	1	AR018	KALA	AT018	KAUS
AL020	1	AR020	KALA	AT020	KAUS
AL022	1	AR022	KALA	AT022	KAUS
AL024	1	AR024	KALA	AT024	KAUS
AL025	1	AR001	KALA	AT001	KAHI
AL027	1	AR003	KALA	AT003	KAHI
AL029	1	AR005	KALA	AT005	KAHI
AL031	1	AR007	KALA	AT007	KAHI
AL033	1	AR009	KALA	AT009	KAHI
AL035	1	AR011	KALA	AT011	KAHI

AR009	36000	R	29690	R	C
AR011	36000	R	29730	R	C
AR013	36000	R	29770	R	C
AR015	36000	R	29810	R	C
AR017	36000	R	29850	R	C
AR019	36000	R	29890	R	C
AR021	36000	R	29930	R	C
AR023	36000	R	29970	R	C
AT001	36000	T	19730	R	C
AT003	36000	T	19770	R	C
AT005	36000	T	19810	R	C
AT007	36000	T	19850	R	C
AT009	36000	T	19890	R	C
AT011	36000	T	19930	R	C
AT013	36000	T	19970	R	C
AT015	36000	T	20010	R	C
AT017	36000	T	20050	R	C
AT019	36000	T	20090	R	C
AT021	36000	T	20130	R	C
AT023	36000	T	20170	R	C
AT002	36000	T	19730	L	C
AT004	36000	T	19770	L	C
AT006	36000	T	19810	L	C
AT008	36000	T	19850	L	C
AT010	36000	T	19890	L	C
AT012	36000	T	19930	L	C
AT014	36000	T	19970	L	C
AT016	36000	T	20010	L	C
AT018	36000	T	20050	L	C
AT020	36000	T	20090	L	C
AT022	36000	T	20130	L	C
AT024	36000	T	20170	L	C
BT001	36000	T	18324	R	C
BT003	36000	T	18364	R	C
BT005	36000	T	18404	R	C
BT007	36000	T	18444	R	C
BT009	36000	T	18484	R	C
BT011	36000	T	18524	R	C
BT002	36000	T	18324	L	C

AL037	1	AR013	KALA	AT013	KAHI
AL039	1	AR015	KALA	AT015	KAHI
AL041	1	AR017	KALA	AT017	KAHI
AL043	1	AR019	KALA	AT019	KAHI
AL045	1	AR021	KALA	AT021	KAHI
AL047	1	AR023	KALA	AT023	KAHI
AL026	1	AR002	KALA	AT002	KAHI
AL028	1	AR004	KALA	AT004	KAHI
AL030	1	AR006	KALA	AT006	KAHI
AL032	1	AR008	KALA	AT008	KAHI
AL034	1	AR010	KALA	AT010	KAHI
AL036	1	AR012	KALA	AT012	KAHI
AL038	1	AR014	KALA	AT014	KAHI
AL040	1	AR016	KALA	AT016	KAHI
AL042	1	AR018	KALA	AT018	KAHI
AL044	1	AR020	KALA	AT020	KAHI
AL046	1	AR022	KALA	AT022	KAHI
AL048	1	AR024	KALA	AT024	KAHI
AL049	1	AR001	KALA	AT001	KAPR
AL051	1	AR003	KALA	AT003	KAPR
AL053	1	AR005	KALA	AT005	KAPR
AL055	1	AR007	KALA	AT007	KAPR
AL057	1	AR009	KALA	AT009	KAPR
AL059	1	AR011	KALA	AT011	KAPR
AL061	1	AR013	KALA	AT013	KAPR
AL063	1	AR015	KALA	AT015	KAPR
AL065	1	AR017	KALA	AT017	KAPR
AL067	1	AR019	KALA	AT019	KAPR
AL069	1	AR021	KALA	AT021	KAPR
AL071	1	AR023	KALA	AT023	KAPR
AL050	1	AR002	KALA	AT002	KAPR
AL052	1	AR004	KALA	AT004	KAPR
AL054	1	AR006	KALA	AT006	KAPR
AL056	1	AR008	KALA	AT008	KAPR
AL058	1	AR010	KALA	AT010	KAPR
AL060	1	AR012	KALA	AT012	KAPR
AL062	1	AR014	KALA	AT014	KAPR
AL064	1	AR016	KALA	AT016	KAPR
AL066	1	AR018	KALA	AT018	KAPR

BT004	36000	T	18364	L	C
BT006	36000	T	18404	L	C
BT008	36000	T	18444	L	C
BT010	36000	T	18484	L	C
BT012	36000	T	18524	L	C
BT013	36000	T	18564	R	C
BT014	36000	T	18564	L	C
KR001	24000	R	17324	R	C
KR003	24000	R	17353.16	R	C
KR005	24000	R	17382.32	R	C
KR007	24000	R	17411.48	R	C
KR009	24000	R	17440.64	R	C
KR011	24000	R	17469.8	R	C
KR013	24000	R	17498.96	R	C
KR015	24000	R	17528.12	R	C
KR017	24000	R	17557.28	R	C
KR019	24000	R	17586.44	R	C
KR021	24000	R	17615.6	R	C
KR023	24000	R	17644.76	R	C
KR025	24000	R	17673.92	R	C
KR027	24000	R	17703.08	R	C
KR029	24000	R	17732.24	R	C
KR031	24000	R	17761.4	R	C
KR002	24000	R	17338.58	L	C
KR004	24000	R	17367.74	L	C
KR006	24000	R	17396.9	L	C
KR008	24000	R	17426.06	L	C
KR010	24000	R	17455.22	L	C
KR012	24000	R	17484.38	L	C
KR014	24000	R	17513.54	L	C
KR016	24000	R	17542.7	L	C
KR018	24000	R	17571.86	L	C
KR020	24000	R	17601.02	L	C
KR022	24000	R	17630.18	L	C
KR024	24000	R	17659.34	L	C
KR026	24000	R	17688.5	L	C
KR028	24000	R	17717.66	L	C
KR030	24000	R	17746.82	L	C
KR032	24000	R	17775.98	L	C

AL068	1	AR020	KALA	AT020	KAPR
AL070	1	AR022	KALA	AT022	KAPR
AL072	1	AR024	KALA	AT024	KAPR
AC001	1	AR001	KACR	AT001	KAUS
AC003	1	AR003	KACR	AT003	KAUS
AC005	1	AR005	KACR	AT005	KAUS
AC007	1	AR007	KACR	AT007	KAUS
AC009	1	AR009	KACR	AT009	KAUS
AC011	1	AR011	KACR	AT011	KAUS
AC013	1	AR013	KACR	AT013	KAUS
AC015	1	AR015	KACR	AT015	KAUS
AC017	1	AR017	KACR	AT017	KAUS
AC019	1	AR019	KACR	AT019	KAUS
AC021	1	AR021	KACR	AT021	KAUS
AC023	1	AR023	KACR	AT023	KAUS
AC002	1	AR002	KACR	AT002	KAUS
AC004	1	AR004	KACR	AT004	KAUS
AC006	1	AR006	KACR	AT006	KAUS
AC008	1	AR008	KACR	AT008	KAUS
AC010	1	AR010	KACR	AT010	KAUS
AC012	1	AR012	KACR	AT012	KAUS
AC014	1	AR014	KACR	AT014	KAUS
AC016	1	AR016	KACR	AT016	KAUS
AC018	1	AR018	KACR	AT018	KAUS
AC020	1	AR020	KACR	AT020	KAUS
AC022	1	AR022	KACR	AT022	KAUS
AC024	1	AR024	KACR	AT024	KAUS
AC025	1	AR001	KACR	AT001	KAHI
AC027	1	AR003	KACR	AT003	KAHI
AC029	1	AR005	KACR	AT005	KAHI
AC031	1	AR007	KACR	AT007	KAHI
AC033	1	AR009	KACR	AT009	KAHI
AC035	1	AR011	KACR	AT011	KAHI
AC037	1	AR013	KACR	AT013	KAHI
AC039	1	AR015	KACR	AT015	KAHI
AC041	1	AR017	KACR	AT017	KAHI
AC043	1	AR019	KACR	AT019	KAHI
AC045	1	AR021	KACR	AT021	KAHI
AC047	1	AR023	KACR	AT023	KAHI

KT001	24000	T	12224	R	C
KT003	24000	T	12253.16	R	C
KT005	24000	T	12282.32	R	C
KT007	24000	T	12311.48	R	C
KT009	24000	T	12340.64	R	C
KT011	24000	T	12369.8	R	C
KT013	24000	T	12398.96	R	C
KT015	24000	T	12428.12	R	C
KT017	24000	T	12457.28	R	C
KT019	24000	T	12486.44	R	C
KT021	24000	T	12515.6	R	C
KT023	24000	T	12544.76	R	C
KT025	24000	T	12573.92	R	C
KT027	24000	T	12603.08	R	C
KT029	24000	T	12632.24	R	C
KT031	24000	T	12661.4	R	C
KT002	24000	T	12238.58	L	C
KT004	24000	T	12267.74	L	C
KT006	24000	T	12296.9	L	C
KT008	24000	T	12326.06	L	C
KT010	24000	T	12355.22	L	C
KT012	24000	T	12384.38	L	C
KT014	24000	T	12413.54	L	C
KT016	24000	T	12442.7	L	C
KT018	24000	T	12471.86	L	C
KT020	24000	T	12501.02	L	C
KT022	24000	T	12530.18	L	C
KT024	24000	T	12559.34	L	C
KT026	24000	T	12588.5	L	C
KT028	24000	T	12617.66	L	C
KT030	24000	T	12646.82	L	C
KT032	24000	T	12675.98	L	C
CMD01	800	R	29502.5	L	T
CMD02	800	R	29505.9	R	T
TLM01	800	T	20198.5	L	T
TLM02	800	T	20199.5	R	T

AC026	1	AR002	KACR	AT002	KAHI
AC028	1	AR004	KACR	AT004	KAHI
AC030	1	AR006	KACR	AT006	KAHI
AC032	1	AR008	KACR	AT008	KAHI
AC034	1	AR010	KACR	AT010	KAHI
AC036	1	AR012	KACR	AT012	KAHI
AC038	1	AR014	KACR	AT014	KAHI
AC040	1	AR016	KACR	AT016	KAHI
AC042	1	AR018	KACR	AT018	KAHI
AC044	1	AR020	KACR	AT020	KAHI
AC046	1	AR022	KACR	AT022	KAHI
AC048	1	AR024	KACR	AT024	KAHI
AC049	1	AR001	KACR	AT001	KAPR
AC051	1	AR003	KACR	AT003	KAPR
AC053	1	AR005	KACR	AT005	KAPR
AC055	1	AR007	KACR	AT007	KAPR
AC057	1	AR009	KACR	AT009	KAPR
AC059	1	AR011	KACR	AT011	KAPR
AC061	1	AR013	KACR	AT013	KAPR
AC063	1	AR015	KACR	AT015	KAPR
AC065	1	AR017	KACR	AT017	KAPR
AC067	1	AR019	KACR	AT019	KAPR
AC069	1	AR021	KACR	AT021	KAPR
AC071	1	AR023	KACR	AT023	KAPR
AC050	1	AR002	KACR	AT002	KAPR
AC052	1	AR004	KACR	AT004	KAPR
AC054	1	AR006	KACR	AT006	KAPR
AC056	1	AR008	KACR	AT008	KAPR
AC058	1	AR010	KACR	AT010	KAPR
AC060	1	AR012	KACR	AT012	KAPR
AC062	1	AR014	KACR	AT014	KAPR
AC064	1	AR016	KACR	AT016	KAPR
AC066	1	AR018	KACR	AT018	KAPR
AC068	1	AR020	KACR	AT020	KAPR
AC070	1	AR022	KACR	AT022	KAPR
AC072	1	AR024	KACR	AT024	KAPR
BL001	1	BR001	KALA	BT001	KAUS
BL003	1	BR003	KALA	BT003	KAUS
BL005	1	BR005	KALA	BT005	KAUS

BL007	1	BR007	KALA	BT007	KAUS
BL009	1	BR009	KALA	BT009	KAUS
BL011	1	BR011	KALA	BT011	KAUS
BL013	1	BR013	KALA	BT013	KAUS
BL002	1	BR002	KALA	BT002	KAUS
BL004	1	BR004	KALA	BT004	KAUS
BL006	1	BR006	KALA	BT006	KAUS
BL008	1	BR008	KALA	BT008	KAUS
BL010	1	BR010	KALA	BT010	KAUS
BL012	1	BR012	KALA	BT012	KAUS
BL014	1	BR014	KALA	BT014	KAUS
BL015	1	BR001	KALA	BT001	KAHI
BL017	1	BR003	KALA	BT003	KAHI
BL019	1	BR005	KALA	BT005	KAHI
BL021	1	BR007	KALA	BT007	KAHI
BL023	1	BR009	KALA	BT009	KAHI
BL025	1	BR011	KALA	BT011	KAHI
BL027	1	BR013	KALA	BT013	KAHI
BL016	1	BR002	KALA	BT002	KAHI
BL018	1	BR004	KALA	BT004	KAHI
BL020	1	BR006	KALA	BT006	KAHI
BL022	1	BR008	KALA	BT008	KAHI
BL024	1	BR010	KALA	BT010	KAHI
BL026	1	BR012	KALA	BT012	KAHI
BL028	1	BR014	KALA	BT014	KAHI
BL029	1	BR001	KALA	BT001	KAPR
BL031	1	BR003	KALA	BT003	KAPR
BL033	1	BR005	KALA	BT005	KAPR
BL035	1	BR007	KALA	BT007	KAPR
BL037	1	BR009	KALA	BT009	KAPR
BL039	1	BR011	KALA	BT011	KAPR
BL041	1	BR013	KALA	BT013	KAPR
BL030	1	BR002	KALA	BT002	KAPR
BL032	1	BR004	KALA	BT004	KAPR
BL034	1	BR006	KALA	BT006	KAPR
BL036	1	BR008	KALA	BT008	KAPR
BL038	1	BR010	KALA	BT010	KAPR
BL040	1	BR012	KALA	BT012	KAPR
BL042	1	BR014	KALA	BT014	KAPR

BC001	1	BR001	KACR	BT001	KBUS
BC003	1	BR003	KACR	BT003	KBUS
BC005	1	BR005	KACR	BT005	KBUS
BC007	1	BR007	KACR	BT007	KBUS
BC009	1	BR009	KACR	BT009	KBUS
BC011	1	BR011	KACR	BT011	KBUS
BC013	1	BR013	KACR	BT013	KBUS
BC002	1	BR002	KACR	BT002	KBUS
BC004	1	BR004	KACR	BT004	KBUS
BC006	1	BR006	KACR	BT006	KBUS
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BC014	1	BR014	KACR	BT014	KBUS
BC015	1	BR001	KACR	BT001	KAHI
BC017	1	BR003	KACR	BT003	KAHI
BC019	1	BR005	KACR	BT005	KAHI
BC021	1	BR007	KACR	BT007	KAHI
BC023	1	BR009	KACR	BT009	KAHI
BC025	1	BR011	KACR	BT011	KAHI
BC027	1	BR013	KACR	BT013	KAHI
BC016	1	BR002	KACR	BT002	KAHI
BC018	1	BR004	KACR	BT004	KAHI
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BC022	1	BR008	KACR	BT008	KAHI
BC024	1	BR010	KACR	BT010	KAHI
BC026	1	BR012	KACR	BT012	KAHI
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BC030	1	BR002	KACR	BT002	KAPR
BC032	1	BR004	KACR	BT004	KAPR
BC034	1	BR006	KACR	BT006	KAPR
BC036	1	BR008	KACR	BT008	KAPR

BC038	1	BR010	KACR	BT010	KAPR
BC040	1	BR012	KACR	BT012	KAPR
BC042	1	BR014	KACR	BT014	KAPR
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KL003	1	KR003	KULA	KT003	KUUS
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KL007	1	KR007	KULA	KT007	KUUS
KL009	1	KR009	KULA	KT009	KUUS
KL011	1	KR011	KULA	KT011	KUUS
KL013	1	KR013	KULA	KT013	KUUS
KL015	1	KR015	KULA	KT015	KUUS
KL017	1	KR017	KULA	KT017	KUUS
KL019	1	KR019	KULA	KT019	KUUS
KL021	1	KR021	KULA	KT021	KUUS
KL023	1	KR023	KULA	KT023	KUUS
KL025	1	KR025	KULA	KT025	KUUS
KL027	1	KR027	KULA	KT027	KUUS
KL029	1	KR029	KULA	KT029	KUUS
KL031	1	KR031	KULA	KT031	KUUS
KL002	1	KR002	KULA	KT002	KUUS
KL004	1	KR004	KULA	KT004	KUUS
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KL008	1	KR008	KULA	KT008	KUUS
KL010	1	KR010	KULA	KT010	KUUS
KL012	1	KR012	KULA	KT012	KUUS
KL014	1	KR014	KULA	KT014	KUUS
KL016	1	KR016	KULA	KT016	KUUS
KL018	1	KR018	KULA	KT018	KUUS
KL020	1	KR020	KULA	KT020	KUUS
KL022	1	KR022	KULA	KT022	KUUS
KL024	1	KR024	KULA	KT024	KUUS
KL026	1	KR026	KULA	KT026	KUUS
KL028	1	KR028	KULA	KT028	KUUS
KL030	1	KR030	KULA	KT030	KUUS
KL032	1	KR032	KULA	KT032	KUUS
KL033	1	KR001	KULA	KT001	KUHI
KL035	1	KR003	KULA	KT003	KUHI
KL037	1	KR005	KULA	KT005	KUHI
KL039	1	KR007	KULA	KT007	KUHI

KL041	1	KR009	KULA	KT009	KUHI
KL043	1	KR011	KULA	KT011	KUHI
KL045	1	KR013	KULA	KT013	KUHI
KL047	1	KR015	KULA	KT015	KUHI
KL049	1	KR017	KULA	KT017	KUHI
KL051	1	KR019	KULA	KT019	KUHI
KL053	1	KR021	KULA	KT021	KUHI
KL055	1	KR023	KULA	KT023	KUHI
KL057	1	KR025	KULA	KT025	KUHI
KL059	1	KR027	KULA	KT027	KUHI
KL061	1	KR029	KULA	KT029	KUHI
KL063	1	KR031	KULA	KT031	KUHI
KL034	1	KR002	KULA	KT002	KUHI
KL036	1	KR004	KULA	KT004	KUHI
KL038	1	KR006	KULA	KT006	KUHI
KL040	1	KR008	KULA	KT008	KUHI
KL042	1	KR010	KULA	KT010	KUHI
KL044	1	KR012	KULA	KT012	KUHI
KL046	1	KR014	KULA	KT014	KUHI
KL048	1	KR016	KULA	KT016	KUHI
KL050	1	KR018	KULA	KT018	KUHI
KL052	1	KR020	KULA	KT020	KUHI
KL054	1	KR022	KULA	KT022	KUHI
KL056	1	KR024	KULA	KT024	KUHI
KL058	1	KR026	KULA	KT026	KUHI
KL060	1	KR028	KULA	KT028	KUHI
KL062	1	KR030	KULA	KT030	KUHI
KL064	1	KR032	KULA	KT032	KUHI
KL065	1	KR001	KULA	KT001	KUPR
KL067	1	KR003	KULA	KT003	KUPR
KL069	1	KR005	KULA	KT005	KUPR
KL071	1	KR007	KULA	KT007	KUPR
KL073	1	KR009	KULA	KT009	KUPR
KL075	1	KR011	KULA	KT011	KUPR
KL077	1	KR013	KULA	KT013	KUPR
KL079	1	KR015	KULA	KT015	KUPR
KL081	1	KR017	KULA	KT017	KUPR
KL083	1	KR019	KULA	KT019	KUPR
KL085	1	KR021	KULA	KT021	KUPR

KL087	1	KR023	KULA	KT023	KUPR
KL089	1	KR025	KULA	KT025	KUPR
KL091	1	KR027	KULA	KT027	KUPR
KL093	1	KR029	KULA	KT029	KUPR
KL095	1	KR031	KULA	KT031	KUPR
KL066	1	KR002	KULA	KT002	KUPR
KL068	1	KR004	KULA	KT004	KUPR
KL070	1	KR006	KULA	KT006	KUPR
KL072	1	KR008	KULA	KT008	KUPR
KL074	1	KR010	KULA	KT010	KUPR
KL076	1	KR012	KULA	KT012	KUPR
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KL086	1	KR022	KULA	KT022	KUPR
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KL094	1	KR030	KULA	KT030	KUPR
KL096	1	KR032	KULA	KT032	KUPR
KC001	1	KR001	KUCR	KT001	KUUS
KC003	1	KR003	KUCR	KT003	KUUS
KC005	1	KR005	KUCR	KT005	KUUS
KC007	1	KR007	KUCR	KT007	KUUS
KC009	1	KR009	KUCR	KT009	KUUS
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KC013	1	KR013	KUCR	KT013	KUUS
KC015	1	KR015	KUCR	KT015	KUUS
KC017	1	KR017	KUCR	KT017	KUUS
KC019	1	KR019	KUCR	KT019	KUUS
KC021	1	KR021	KUCR	KT021	KUUS
KC023	1	KR023	KUCR	KT023	KUUS
KC025	1	KR025	KUCR	KT025	KUUS
KC027	1	KR027	KUCR	KT027	KUUS
KC029	1	KR029	KUCR	KT029	KUUS
KC031	1	KR031	KUCR	KT031	KUUS
KC002	1	KR002	KUCR	KT002	KUUS
KC004	1	KR004	KUCR	KT004	KUUS

KC006	1	KR006	KUCR	KT006	KUUS
KC008	1	KR008	KUCR	KT008	KUUS
KC010	1	KR010	KUCR	KT010	KUUS
KC012	1	KR012	KUCR	KT012	KUUS
KC014	1	KR014	KUCR	KT014	KUUS
KC016	1	KR016	KUCR	KT016	KUUS
KC018	1	KR018	KUCR	KT018	KUUS
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KC022	1	KR022	KUCR	KT022	KUUS
KC024	1	KR024	KUCR	KT024	KUUS
KC026	1	KR026	KUCR	KT026	KUUS
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KC030	1	KR030	KUCR	KT030	KUUS
KC032	1	KR032	KUCR	KT032	KUUS
KC033	1	KR001	KUCR	KT001	KUHI
KC035	1	KR003	KUCR	KT003	KUHI
KC037	1	KR005	KUCR	KT005	KUHI
KC039	1	KR007	KUCR	KT007	KUHI
KC089	1	KR025	KUCR	KT025	KUPR
KC091	1	KR027	KUCR	KT027	KUPR
KC093	1	KR029	KUCR	KT029	KUPR
KC095	1	KR031	KUCR	KT031	KUPR
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KC092	1	KR028	KUCR	KT028	KUPR
KC094	1	KR030	KUCR	KT030	KUPR
KC096	1	KR032	KUCR	KT032	KUPR
KC041	1	KR009	KUCR	KT009	KUHI

KC043	1	KR011	KUCR	KT011	KUHI
KC045	1	KR013	KUCR	KT013	KUHI
KC047	1	KR015	KUCR	KT015	KUHI
KC049	1	KR017	KUCR	KT017	KUHI
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KC040	1	KR008	KUCR	KT008	KUHI
KC042	1	KR010	KUCR	KT010	KUHI
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KC048	1	KR016	KUCR	KT016	KUHI
KC050	1	KR018	KUCR	KT018	KUHI
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KC054	1	KR022	KUCR	KT022	KUHI
KC056	1	KR024	KUCR	KT024	KUHI
KC058	1	KR026	KUCR	KT026	KUHI
KC060	1	KR028	KUCR	KT028	KUHI
KC062	1	KR030	KUCR	KT030	KUHI
KC064	1	KR032	KUCR	KT032	KUHI
KC065	1	KR001	KUCR	KT001	KUPR
KC067	1	KR003	KUCR	KT003	KUPR
KC069	1	KR005	KUCR	KT005	KUPR
KC071	1	KR007	KUCR	KT007	KUPR
KC073	1	KR009	KUCR	KT009	KUPR
KC075	1	KR011	KUCR	KT011	KUPR
KC077	1	KR013	KUCR	KT013	KUPR
KC079	1	KR015	KUCR	KT015	KUPR
KC081	1	KR017	KUCR	KT017	KUPR
KC083	1	KR019	KUCR	KT019	KUPR
KC085	1	KR021	KUCR	KT021	KUPR
KC087	1	KR023	KUCR	KT023	KUPR

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Page 7: Digital Modulation

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)
MKA	36M0G7W	36000						
MKU	24M0G7W	24000						

Page 8: Analog Modulation

[illegible]

Page 9: Typical Emissions

[illegible]

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Page 10: TT and C

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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**Page 11:
Characteristics and
Certifications**

S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?	☒	YES	☐	NO	☐	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?	☐	YES	☐	NO	☒	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?	☒	YES	☐	NO	☐	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.						