

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: DIRECTV 1R		e. Estimated Date of Placement into Service: 10/1/1999		i. Will the space station(s) operate on a Common Carrier Basis: N	
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s): 4 Years		j. Number of transponders offered on a common carrier basis:	
c. Construction Completion Date:		g. Total Number of Transponders: 32		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) 768 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)		
17.3	G	17.8	G	R	Feeder Link for Broadcasting Satellite Service in FSS
12.2	G	12.7	G	T	Broadcasting Satellite Service - Video

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 109.8 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:				Range of orbital are in which adequate service can be provided (Optional):	
d. Toward West:	0.05 Degrees	e. Toward East:	0.05 Degrees			g. Westernmost: 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:
- S4b. Total Number of Orbital Planes in Network or System:
- S4c. Celestial Reference Body (Earth, Sun, Moon, etc.):
- 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 intital 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.
CONUSRX	S		CONUS
CONUSTX	S		CONUS

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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														
UL	R	34	31	0.08		30	N		CONUSR				794	5	-97	15	1
DL	T	34.7	28.7	0.08		30	N		CONUSTX	1	200	56.7					

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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
UL	R	C	-109.8		1R RX co-pol@110W					
DL	T	C	-109.8		1R TX co-pol@110W					

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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)
T0001	24000	T	12224	R	C
T0003	24000	T	12253.16	R	C
T0005	24000	T	12282.32	R	C
T0007	24000	T	12311.48	R	C
T0009	24000	T	12340.64	R	C
T0011	24000	T	12369.8	R	C
T0013	24000	T	12398.96	R	C
T0015	24000	T	12428.12	R	C
T0017	24000	T	12457.28	R	C
T0019	24000	T	12486.44	R	C
T0021	24000	T	12515.6	R	C
T0023	24000	T	12544.76	R	C
T0025	24000	T	12573.92	R	C
T0027	24000	T	12603.08	R	C
T0029	24000	T	12632.24	R	C
T0031	24000	T	12661.4	R	C
T0002	24000	T	12238.58	L	C
T0004	24000	T	12267.74	L	C
T0006	24000	T	12296.9	L	C
T0008	24000	T	12326.06	L	C
T0010	24000	T	12355.22	L	C
T0012	24000	T	12384.38	L	C
T0014	24000	T	12413.54	L	C
T0016	24000	T	12442.7	L	C
T0018	24000	T	12471.86	L	C
T0020	24000	T	12501.02	L	C
T0022	24000	T	12530.18	L	C
T0024	24000	T	12559.34	L	C
T0026	24000	T	12588.5	L	C
T0028	24000	T	12617.66	L	C

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
00001	163	R0001	UL	T0001	DL
00003	163	R0003	UL	T0003	DL
00005	163	R0005	UL	T0005	DL
00007	163	R0007	UL	T0007	DL
00009	163	R0009	UL	T0009	DL
00011	163	R0011	UL	T0011	DL
00013	163	R0013	UL	T0013	DL
00015	163	R0015	UL	T0015	DL
00017	163	R0017	UL	T0017	DL
00019	163	R0019	UL	T0019	DL
00021	163	R0021	UL	T0021	DL
00023	163	R0023	UL	T0023	DL
00025	163	R0025	UL	T0025	DL
00027	163	R0027	UL	T0027	DL
00029	163	R0029	UL	T0029	DL
00031	163	R0031	UL	T0031	DL
00002	163	R0002	UL	T0002	DL
00004	163	R0004	UL	T0004	DL
00006	163	R0006	UL	T0006	DL
00008	163	R0008	UL	T0008	DL
00010	163	R0010	UL	T0010	DL
00012	163	R0012	UL	T0012	DL
00014	163	R0014	UL	T0014	DL
00016	163	R0016	UL	T0016	DL
00018	163	R0018	UL	T0018	DL
00020	163	R0020	UL	T0020	DL
00022	163	R0022	UL	T0022	DL
00024	163	R0024	UL	T0024	DL
00026	163	R0026	UL	T0026	DL
00028	163	R0028	UL	T0028	DL

T0030	24000	T	12646.82	L	C
T0032	24000	T	12675.98	L	C
R0001	24000	R	17324	R	C
R0003	24000	R	17353.16	R	C
R0005	24000	R	17382.32	R	C
R0007	24000	R	17411.48	R	C
R0009	24000	R	17440.64	R	C
R0011	24000	R	17469.8	R	C
R0013	24000	R	17498.96	R	C
R0015	24000	R	17528.12	R	C
R0017	24000	R	17557.28	R	C
R0019	24000	R	17586.44	R	C
R0021	24000	R	17615.6	R	C
R0023	24000	R	17644.76	R	C
R0025	24000	R	17673.92	R	C
R0027	24000	R	17703.08	R	C
R0029	24000	R	17732.24	R	C
R0031	24000	R	17761.4	R	C
R0002	24000	R	17338.58	L	C
R0004	24000	R	17367.74	L	C
R0006	24000	R	17396.9	L	C
R0008	24000	R	17426.06	L	C
R0010	24000	R	17455.22	L	C
R0012	24000	R	17484.38	L	C
R0014	24000	R	17513.54	L	C
R0016	24000	R	17542.7	L	C
R0018	24000	R	17571.86	L	C
R0020	24000	R	17601.02	L	C
R0022	24000	R	17630.18	L	C
R0024	24000	R	17659.34	L	C
R0026	24000	R	17688.5	L	C
R0028	24000	R	17717.66	L	C
R0030	24000	R	17746.82	L	C
R0032	24000	R	17775.98	L	C
CMD1	800	R	17305.0	R	T
CMD2	800	R	17799.0	R	T
TLM1	800	T	12699.25	R	T
TLM2	800	T	12698.25	L	T

00030	163	R0030	UL	T0030	DL
00032	163	R0032	UL	T0032	DL
TLM1				TLM1	DL
TLM2				TLM2	DL

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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)
DTH1	24M0G7W	24000	4	30320	0.758		7.6	28
DTH2	24M0G7W	24000	4	23600	0.59		5.4	28

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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						
CMD	800KF2D	800		1									7.6	28
TLM	800KF2D	800		1									7.6	28

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S13. TYPICAL EMISSIONS For each planned type of emission provide:

Associated Transponder ID Range		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)			
(a) Start	(b) End	(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.		
00001	00032	DTH1		1						50.7	56.7		13	
TLM1	TLM2		TLM	1						-4	16		39	
00001	00032	DTH2		1						50.7	56.7		13	

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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: 5454 E. Garton Rd			
S14b. City: Castle Rock	S14c. County: Douglas	S14d. State/Country CO	S14e. Zip Code: 80104
S14f. Telephone Number: 303-660-7001		S14g. Call Sign of Control Station (if appropriate): E930191	

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Characteristics and
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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 1741	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 1786		
S15c. Mass of spacecraft and fuel at launch (kg): 3527	S15f. Length (m): 26.2	S15i. Payload: 0.93
S15d. Mass of fuel, in orbit, at beginning of life (kg): 526	S15g. Width (m): 2.2	S15j. Bus: 0.89
S15e. Deployed Area of Solar Array (square meters): 43.9	S15h. Height (m): 8.1	S15k. Total: 0.83

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): 5928	(f): 5928	(k): 5928	(p): 5928
Bus (Watts):	(b): 1621	(g): 704	(l): 1552	(q): 908
Total (Watts):	(c): 7549	(h): 6632	(m): 7480	(r): 6836
Solar Array (Watts):	(d): 8653	(i): 7702	(n): 7702	(s): 7031
Depth of Battery Discharge (%):	(e) 70.4 %	(j) 70.4 %	(o) 77.2 %	(t) 77.2 %

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.