

S1. GENERAL INFORMATION Complete for all satellite applications.

| | | |
|--|---|--|
| a. Space Station or Satellite Network Name: DIRECTV 8 | e. Estimated Date of Placement into Service: 6/25/2005 | i. Will the space station(s) operate on a Common Carrier Basis: N |
| b. Construction Commencement Date: 12/11/1999 | f. Estimated Lifetime of Satellite(s): 12.6 Years | j. Number of transponders offered on a common carrier basis: 0 |
| c. Construction Completion Date: 3/15/2005 | g. Total Number of Transponders: 4 | k. Total Common Carrier Transponder Bandwidth: 0 MHz |
| d. Estimated Launch Date: 4/1/2005 | h. Total Transponder Bandwidth (no. transponders x Bandwidth) 1000 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) | | |
| 18.3 | G | 18.8 | G | T | Fixed Satellite Service |
| 19.7 | G | 20.2 | G | T | Fixed Satellite Service |
| 28.35 | G | 28.6 | G | R | Fixed Satellite Service |
| 29.25 | G | 29.5 | G | R | Fixed Satellite Service |
| 29.5 | G | 30.0 | G | R | Fixed Satellite Service |

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

| | | | |
|---|--|--|---|
| a. Nominal Orbital Longitude (Degrees E/W): 100.85 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): Degrees E/W | |
| d. Toward West: 0.05 Degrees | e. Toward East: 0.05 Degrees | g. Westernmost: h. Easternmost: | |
| i. Reason for service are selection (Optional): | | | |

**FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)**

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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SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)**

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. |
|---------------------|---|---|---|
| NW1 | S | | Area centered on Seattle, WA |
| SW1 | S | | Area Centered on Los Angeles, CA |
| CENTRAL | S | | Area centered on Castle Rock, CO |
| MW1 | S | | Area centered on Kansas City, MO |
| NE1 | S | | Area centered on New York, NY |
| SE1 | S | | Area centered on Atlanta, GA |
| TT&CRX | S | | Western U.S. |
| TT&CTX | S | | Western U.S. |

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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) | |
|-------------------|--------------------|---------------------------|-------------------|---------------------------------------|---|---|--|---|------------------------|--------------------------------|--------------------------------------|------------------------------|------------------------------------|---------------------------------------|--|-----------------------|------------------|
| | | (c) Peak (dBi) | (d) Edge (dBi) | | | | | | | (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 |
| | | | | | | | | | | | | | | | | | |
| ULW | R | 47.2 | 44.5 | 0.14 | | 24 | Y | | NW1 | | | | 6025 | 9.4 | -84 | 31 | 1 |
| ULN | R | 46.3 | 44.2 | 0.14 | | 24 | Y | | NE1 | | | | 6456 | 8.2 | -83.8 | 31 | 1 |
| ULG | R | 48 | 44.4 | 0.14 | | 24 | Y | | SE1 | | | | 6918 | 9.6 | -84.5 | 31 | 1 |
| DLC | T | 46.1 | 45.5 | 0.14 | | 21 | N | | SW1 | 3.9 | 0.91 | 41.8 | | | | | |
| CMD | R | 32 | 30 | 0.14 | | 21 | N | | TT&CRX | | | | 11220 | -8.5 | -102 | | |
| TLM | T | 32 | 30 | 0.14 | | 21 | N | | TT&CTX | 7.7 | 0.25 | 18.3 | | | | | |
| ULC | R | 50.1 | 45.6 | 0.14 | | 24 | Y | | CENTRAL | | | | 6166 | 12.2 | -86.8 | 31 | 1 |
| DLM | T | 48.5 | 45.8 | 0.14 | | 21 | N | | MW1 | 3.9 | 0.52 | 41.8 | | | | | |

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SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)**

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 |
| ULW | R | C | -101 | | rx_seattle_copol_R2.g | | | | | |
| ULM | T | C | -101 | | rx_kansas_copol_R2.g | | | | | |
| ULN | R | C | -101 | | x_newyork_copol_R2.g | | | | | |
| ULG | R | C | -101 | | rx_atlanta_copol_R2.g | | | | | |
| DLC | T | C | -101 | | atx_labc_copol_R2.gx | -155 | -155 | -155 | -155 | -155 |
| DLC | T | C | -101 | | atx_crbc_copol_R2.gx | | | | | |
| CMD | R | C | -101 | | D8RX_CO.gxt | | | | | |
| TLM | T | C | -101 | | D8TX_CO.gxt | | | | | |
| ULC | R | C | -101 | | arx_crbc_copol_R2.gx | | | | | |
| DLM | T | C | -101 | | rx_kansas_copol_R2.g | -155 | -155 | -155 | -155 | -155 |

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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) |
|-----------------|------------------------------|--------------|----------------------------|-------------------------------|----------------------------------|
| C1RR | 250000 | R | 28475 | R | C |
| D1RL | 250000 | R | 28475 | L | C |
| C2RR | 250000 | R | 29375 | R | C |
| D2RL | 250000 | R | 29375 | L | C |
| B1RR | 250000 | R | 29625 | R | C |
| A1RL | 250000 | R | 29625 | L | C |
| B2RR | 250000 | R | 29875 | R | C |
| A2RL | 250000 | R | 29875 | L | C |
| B2TR | 250000 | T | 18675 | R | C |
| B2TL | 250000 | T | 18675 | L | C |
| B1TR | 250000 | T | 18425 | R | C |
| B1TL | 250000 | T | 18425 | L | C |
| A1TR | 250000 | T | 19825 | R | C |
| A1TL | 250000 | T | 19825 | L | C |
| A2TR | 250000 | T | 20075 | R | C |
| A2TL | 250000 | T | 20075 | L | C |
| C1 | | R | 17307 | L | T |
| T1 | | T | 12203.25 | L | T |
| T2 | | T | 12203.75 | L | T |

| (a) Transponder ID | (b) Transponder Gain (dB) | Receive Band | | Transmit Band | |
|--------------------|---------------------------|-----------------|-------------|-----------------|-------------|
| | | (c) Channel No. | (d) Beam ID | (e) Channel No. | (f) Beam ID |
| A001 | 106 | B1RR | ULWA | A1TR | DLMO |
| A002 | 106 | B1RR | ULWA | A1TL | DLCA |
| A003 | 106 | B2RR | ULWA | A2TR | DLMO |
| A004 | 106 | B2RR | ULWA | A2TL | DLCA |
| A005 | 106 | A1RL | ULCO | A1TR | DLMO |
| A006 | 106 | A1RL | ULCO | A1TL | DLCA |
| A007 | 106 | A2RL | ULCO | A2TR | DLMO |
| A008 | 106 | A2RL | ULCO | A2TL | DLCA |
| A009 | 106 | B1RR | ULWA | B1TR | DLMO |
| A010 | 106 | B1RR | ULWA | B1TL | DLCA |
| A011 | 106 | B2RR | ULWA | B2TR | DLMO |
| A012 | 106 | B2RR | ULWA | B2TL | DLCA |
| A013 | 106 | A1RL | ULCO | B1TR | DLMO |
| A014 | 106 | A1RL | ULCO | B1TL | DLCA |
| A015 | 106 | A2RL | ULCO | B2TR | DLMO |
| A016 | 106 | A2RL | ULCO | B2TL | DLCA |
| B001 | 106 | C1RR | ULGA | B2TR | DLMO |
| B002 | 106 | C1RR | ULGA | B2TL | DLCA |
| B003 | 106 | C2RR | ULGA | B1TR | DLMO |
| B004 | 106 | C2RR | ULGA | B1TL | DLCA |
| B005 | 106 | D1RL | ULNY | B2TR | DLMO |
| B006 | 106 | D1RL | ULNY | B2TL | DLCA |
| B007 | 106 | D2RL | ULNY | B1TR | DLMO |
| B008 | 106 | D2RL | ULNY | B1TL | DLCA |
| C001 | | C1 | CMD | | |
| T001 | | | | T1 | TLM |
| T002 | | | | T2 | TLM |

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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) |
|---------------------|-------------------------|------------------------------|-------------------|------------------------------|--------------------------------------|-------------------------------|--|-------------------------------------|
| BH1 | 24M0G7W | 24000 | 4 | 40000 | 0.5 | | 1.9 | 25.6 |
| BH2 | 36M0G7W | 36000 | 4 | 60000 | 0.5 | | 1.9 | 23.8 |
| BH3 | 54M0G7W | 54000 | 4 | 90000 | 0.5 | | 1.9 | 22.1 |

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

Page 8: Analog Modulation

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 | | | | | | |
| TLM | 2M00G9D | 2000 | | 1 | | | | | | | | | 7.6 | 28 |
| CMD | 2M00F9D | 2000 | | 1 | | | | | | | | | 7.6 | 28 |

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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. | | | | |
| A001 | A016 | BH1 | | 8 | 30000 | | | 66.8 | 22.7 | 27.7 | 50.8 | 50.8 | -134 | 41 |
| B001 | B008 | BH1 | | 8 | 30000 | | | 66.8 | 22.7 | 27.7 | 50.8 | 50.8 | -134 | 41 |
| A001 | A016 | BH2 | | 6 | 40000 | | | 66.8 | 21.5 | 26.5 | 49.6 | 49.6 | -136 | 41 |
| B001 | B008 | BH2 | | 6 | 40000 | | | 66.8 | 21.5 | 26.5 | 49.6 | 49.6 | -136 | 41 |
| A001 | A016 | BH3 | | 4 | 60000 | | | 66.8 | 19.7 | 24.7 | 47.8 | 47.8 | -138 | 41 |
| B001 | B008 | BH3 | | 4 | 60000 | | | 66.8 | 19.7 | 24.7 | 47.8 | 47.8 | -138 | 41 |
| C001 | | | CMD1 | 1 | | | | 65.3 | -4.9 | 47.1 | | | | |
| T001 | T002 | | TLM | 1 | | | | | | | 12 | 18.3 | | 40 |

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

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): Yes

Remote Control (TT C) Location(s):

| | | | |
|--|-----------------------------|---|--------------------------|
| S14a: Street Address: 5130 Robert J. mathews Pkwy | | | |
| S14b. City: El Dorado Hills | S14c. County: Sacramento | S14d. State/Country AZ | S14e. Zip Code: 95762 |
| S14f. Telephone Number: 916 605 5401 | | S14g. Call Sign of Control Station (if appropriate): E030105 | |

**FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)**

Page 11:
Characteristics and
Certifications

S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

| | | |
|--|-----------------------------------|---|
| S15a. Mass of spacecraft without fuel (kg): 1487.9 | Spacecraft Dimensions (meters) | Probability of Survival to End of Life (0.0 - 1.0) |
| S15b. Mass of fuel and disposables at launch (kg): 2220 | | |
| S15c. Mass of spacecraft and fuel at launch (kg): 3707.9 | S15f. Length (m): 31.3 | S15i. Payload: 0.8845 |
| S15d. Mass of fuel, in orbit, at beginning of life (kg): 1468 | S15g. Width (m): 8.7 | S15j. Bus: 0.9115 |
| S15e. Deployed Area of Solar Array (square meters): 60.6 | S15h. Height (m): 6.2 | S15k. Total: 0.8062 |

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): 5958 | (f): 5958 | (k): 5763 | (p): 5763 |
| Bus (Watts): | (b): 1864 | (g): 955 | (l): 1874 | (q): 594 |
| Total (Watts): | (c): 7833 | (h): 6913 | (m): 7637 | (r): 6717 |
| Solar Array (Watts): | (d): 9340 | (i): 8379 | (n): 8399 | (s): 7659 |
| Depth of Battery Discharge (%): | (e) 74 % | (j) 0 % | (o) 72 % | (t) 0 % |

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.