

S1. GENERAL INFORMATION Complete for all satellite applications.

| | | | | | |
|--|---------------------------------------|--|--|--|--|
| a. Space Station or Satellite Network Name: SIRIUS FM-5 | | e. Estimated Date of Placement into Service: 2/15/2009 | | i. Will the space station(s) operate on a Common Carrier Basis: N | |
| b. Construction Commencement Date: 5/31/2006 | | f. Estimated Lifetime of Satellite(s): 15 Years | | j. Number of transponders offered on a common carrier basis: 0 | |
| c. Construction Completion Date: 9/1/2008 | | g. Total Number of Transponders: 2 | | k. Total Common Carrier Transponder Bandwidth: 0 MHz | |
| d1. Est Launch Date Begin: 10/1/2008 | d2. Est Launch Date End: 12/1/2008 | h. Total Transponder Bandwidth (no. transponders x Bandwidth) 9 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) | | |
| 2320.0 | M | 2332.5 | M | T | Satellite Digital Audio Radio Service |
| 7050.5 | M | 7072.5 | M | R | Fixed Satellite Service |
| 7051.5 | M | 7052.5 | M | R | Fixed Satellite Service |
| 7055.5 | M | 7056.5 | M | R | Fixed Satellite Service |
| 2320.35 | M | 2320.65 | M | T | Satellite Digital Audio Radio Service |
| 2321.35 | M | 2321.65 | M | T | Satellite Digital Audio Radio Service |
| 2331.35 | M | 2332.65 | M | T | Satellite Digital Audio Radio Service |
| 2331.85 | M | 2332.15 | M | T | Satellite Digital Audio Radio Service |

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

| | | | | | | |
|---|--------------|--|--|--|--|---|
| a. Nominal Orbital Longitude (Degrees E/W): 96 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: | | This orbital location provides high elevation angles to all of CONUS, which is very important for the link between the satellite and the user terminals in the CONUS. The high elevation angle minimizes the risk of signal blockage due to buildings and foliage. | | |
| d. Toward West: | 0.05 Degrees | Range of orbital are in which adequate service can be provided (Optional): | | | | |
| e. Toward East: | 0.05 Degrees | g. Westernmost: | | | | W |
| i. Reason for service are selection (Optional): | | h. Easternmost: | | W | | |

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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. |
|---------------------|---|---|---|
| SA1S | S | | CONUS |
| SA2X | S | | Eastern & Central 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 | | | 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 |
| | | | | | | | | | | | | | | | | | |
| XU1 | R | 32.6 | 30 | 0.13 | 1 | 30 | N | | SA2X | | | | 830 | 3.4 | -108 | 20 | 1 |
| SD1 | T | 35.7 | 29 | 0.16 | 1 | 25 | N | | SA1S | 1.9 | 19 | 72.9 | | | | | |
| OMN | R | 6 | 2 | 0 | 1 | 30 | N | | SA2X | | | | 630 | -31 | | | |
| OMN | T | 7 | 3 | 0 | 1 | 30 | N | | SA2X | 4 | 12.6 | 11 | | | | | |
| SAT | T | 40.9 | 24 | 0 | 1 | 30 | N | | SA1S | 5.8 | 1 | 40.9 | | | | | |

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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 |
| XU1 | R | C | -96 | | S5_X_rx.gxt | | | | | |
| SD1 | T | C | -96 | | S5_S_tx.gxt | -139.5 | -136.5 | -134.5 | -131.5 | -129.5 |
| SAT | T | C | -96 | | S5_tlm_tx.gxt | -159.5 | -156.5 | -154.5 | -151.5 | -149.5 |

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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) |
|-----------------------|------------------------------------|--------------------|----------------------------------|-------------------------------------|---|
| U001 | 4500 | R | 7062.29 | R | C |
| U002 | 4500 | R | 7070.21 | R | C |
| D001 | 4500 | T | 2322.29 | L | C |
| D002 | 4500 | T | 2330.21 | L | C |
| CMD1 | 1000 | R | 7052.000 | L | T |
| CMD2 | 1000 | R | 7056.000 | L | T |
| TLM1 | 300 | T | 2320.500 | R | T |
| TLM2 | 300 | T | 2321.000 | R | T |
| TLM3 | 300 | T | 2331.500 | R | T |
| TLM4 | 300 | T | 2332.000 | R | T |

| (a) Transponder ID | (b) Transponder Gain (dB) | Receive Band | | Transmit Band | |
|--------------------------|---------------------------------|--------------------|----------------|--------------------|-------------|
| | | (c) Channel No. | (d) Beam ID | (e) Channel No. | (f) Beam ID |
| BL01 | 130 | U001 | XU1 | D001 | SD1 |
| BL02 | 130 | U002 | XU1 | D002 | SD1 |
| C001 | | CMD1 | OMNX1 | | |
| C002 | | CMD2 | OMNX1 | | |
| T001 | | | | TLM1 | OMNS1 |
| T002 | | | | TLM2 | OMNS1 |
| T003 | | | | TLM3 | OMNS1 |
| T004 | | | | TLM4 | OMNS1 |
| T005 | | | | TLM1 | SATM |
| T006 | | | | TLM2 | SATM |
| T007 | | | | TLM3 | SATM |
| T008 | | | | TLM4 | SATM |

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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 | 4M50G7E | 4500 | 4 | 7517 | 0.6667 | | 4 | |

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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 | | | | | | |
| A1 | 1M00F1D | 1000 | | 1 | | | | | | | | | 22 | 53.3 |
| A2 | 300KG1D | 300 | | 1 | | | | | | | | | 17.2 | 53.3 |

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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) |
| BL01 | BL02 | D1 | | 1 | | | | | | | 63 | 72.9 | -119.5 | |
| C001 | C002 | | A1 | 1 | | X-band CMD | | 50.5 | 22.5 | 24.5 | 73 | 75 | | |
| T001 | T004 | | A2 | 1 | | S-band TLM | | | | | -3 | 11 | -169.4 | |
| T005 | T008 | | A2 | 1 | | S-band TLM | | | | | 24 | 40.9 | -139.5 | |

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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: 24 Vernon Crossing Road | | | |
| S14b. City: Vernon | S14c. County: Sussex | S14d. State/Country NJ | S14e. Zip Code: 07462 |
| S14f. Telephone Number: 973-764-4021 | | S14g. Call Sign of Control Station (if appropriate): E040363 | |

Remote Control (TT C) Location(s):

| | | | |
|--|-------------------------|---|--------------------------|
| S14a: Street Address: 24 Vernon Crossing Road | | | |
| S14b. City: Vernon | S14c. County: Sussex | S14d. State/Country NJ | S14e. Zip Code: 07462 |
| S14f. Telephone Number: 973-764-4021 | | S14g. Call Sign of Control Station (if appropriate): E060276 | |

Remote Control (TT C) Location(s):

| | | | |
|---|-----------------------------|---|--------------------------|
| S14a: Street Address: 17625 Technical Blvd | | | |
| S14b. City: Hagerstown | S14c. County: Washington | S14d. State/Country MD | S14e. Zip Code: 21740 |
| S14f. Telephone Number: 240-420-8999 | | S14g. Call Sign of Control Station (if appropriate): E030071 | |

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

| | | |
|---|-----------------------------------|---|
| S15a. Mass of spacecraft without fuel (kg): 2800 | Spacecraft Dimensions (meters) | Probability of Survival to End of Life (0.0 - 1.0) |
| S15b. Mass of fuel and disposables at launch (kg): 3050 | | |
| S15c. Mass of spacecraft and fuel at launch (kg): 5850 | S15f. Length (m): 32.4 | S15i. Payload: 0.9 |
| S15d. Mass of fuel, in orbit, at beginning of life (kg): 777 | S15g. Width (m): 15.6 | S15j. Bus: 0.85 |
| S15e. Deployed Area of Solar Array (square meters): 89 | S15h. Height (m): 8.5 | S15k. Total: 0.76 |

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): 13036 | (f): 13036 | (k): 13036 | (p): 13036 |
| Bus (Watts): | (b): 3584 | (g): 1702 | (l): 3584 | (q): 1702 |
| Total (Watts): | (c): 16620 | (h): 14738 | (m): 16620 | (r): 14738 |
| Solar Array (Watts): | (d): 21374 | (i): 19335 | (n): 19054 | (s): 16910 |
| Depth of Battery Discharge (%): | (e) 62.9 % | (j) 0 % | (o) 66.4 % | (t) 0 % |

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.