

S1. GENERAL INFORMATION Complete for all satellite applications.

| | | | | | |
|--|--------------------------|---|--|--|--|
| a. Space Station or Satellite Network Name: SES-2 | | 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: 0 | |
| c. Construction Completion Date: | | g. Total Number of Transponders: 49 | | k. Total Common Carrier Transponder Bandwidth: 0 MHz | |
| d1. Est Launch Date Begin: | d2. Est Launch Date End: | h. Total Transponder Bandwidth (no. transponders x Bandwidth) 2228 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) | | |
| 14.00 | G | 14.50 | G | R | Fixed Satellite Service |
| 11.70 | G | 12.20 | G | T | Fixed Satellite Service |
| 14.00 | G | 14.50 | G | R | Direct to Home in the Fixed Fixed Satellite Service |
| 11.70 | G | 12.20 | G | T | Direct to Home in the Fixed Fixed Satellite Service |
| 5.925 | G | 6.425 | G | R | Fixed Satellite Service |
| 3.70 | G | 4.20 | G | T | Fixed Satellite Service |
| 24.75 | G | 25.25 | G | R | Feeder Link for Broadcasting Satellite Service in FSS |
| 17.3 | G | 17.8 | G | T | Broadcasting Satellite Service - Video |

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

| | | | | | |
|---|--------------|--|--|---|--|
| a. Nominal Orbital Longitude (Degrees E/W): 87 W | | b. Alternate Orbital Longitude (Degrees E/W): | | c. Reason for orbital location selection: Orbital location is that of AMC-3 which will be replaced by SES-2. | |
| 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 | | g. Westernmost: h. Easternmost: | | |
| e. Toward East: | 0.05 Degrees | 0.05 Degrees | | | |
| i. Reason for service are selection (Optional): | | | | | |

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 SATELLITE SPACE STATION AUTHORIZATIONS
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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 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. |
|---------------------|---|---|---|
| K-DL | E | | CONUS, Hawaii and parts of Alaska |
| K-UL | E | | CONUS, Hawaii and parts of Alaska |
| C-DL | E | | CONUS and parts of Alaska, Canada and the Caribbean |
| C-UL | E | | CONUS and parts of Alaska, Canada and the Caribbean |
| KABSS-UL | E | | North America |
| KABSS-DL | E | | North America |

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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 | | | | | | | | | | | | | | |
| CRH | R | 31.12 | 21.12 | 0.15 | 0 | 30 | Y | 0 | C-UL | | | | 593 | 3.39 | -97.39 | 21 | 1 |
| CRV | R | 31.4 | 21.4 | 0.15 | 0 | 30 | Y | 90 | C-UL | | | | 646 | 3.3 | -97.3 | 21 | 1 |
| KRH | R | 34.37 | 24.37 | 0.15 | 0 | 30 | Y | 0 | K-UL | | | | 470 | 7.65 | -103.65 | 21 | 1 |
| KRV | R | 34.87 | 24.87 | 0.15 | 0 | 30 | Y | 90 | K-UL | | | | 488 | 7.99 | -103.99 | 21 | 1 |
| CTH | T | 30.12 | 20.12 | 0.15 | 0 | 30 | Y | 0 | C-DL | 2.5 | 11 | 43.66 | | | | | |
| CTV | T | 30.4 | 20.4 | 0.15 | 0 | 30 | Y | 90 | C-DL | 2.5 | 11 | 43.85 | | | | | |
| KTH | T | 34.27 | 24.27 | 0.15 | 0 | 30 | Y | 0 | K-DL | 2.5 | 56 | 52.17 | | | | | |
| KTV | T | 35.3 | 25.3 | 0.15 | 0 | 30 | Y | 90 | K-DL | 2.5 | 59 | 52.62 | | | | | |
| KAR | R | 23.55 | 18.55 | 0.15 | 0 | 25 | N | | KABSS-U | | | | 1230 | -7.35 | -87.65 | 20 | 1 |
| KAT | T | 23.48 | 18.48 | 0.15 | 0 | 25 | N | | KABSS-D | 3 | 15 | 33.28 | | | | | |
| KATL | T | 23.48 | 18.48 | 0.15 | 0 | 25 | N | | KABSS-D | 3 | 15 | 33.28 | | | | | |

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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 |
| CRH | R | C | -87 | | CRH.gxt | | | | | |
| CRV | R | C | -87 | | CRV.gxt | | | | | |
| KRH | R | C | -87 | | KRH.gxt | | | | | |
| KRV | R | C | -87 | | KRV.gxt | | | | | |
| CTH | T | C | -87 | | CTH.gxt | -153.5 | -153.2 | -152.6 | -151.6 | -150.2 |
| CTV | T | C | -87 | | CTV.gxt | -153.5 | -153.2 | -152.6 | -151.6 | -150.2 |
| KTH | T | C | -87 | | KTH.gxt | | | | | |
| KTV | T | C | -87 | | KTV.gxt | | | | | |
| KAR | R | C | -87 | | KAR.gxt | | | | | |
| KATL | T | C | -87 | | KATL.gxt | -146 | -145.9 | -145.7 | -145.5 | -145.3 |
| KAT | T | C | -87 | | KATR.gxt | -146 | -145.9 | -145.7 | -145.5 | -145.3 |

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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) |
|-----------------|------------------------------|--------------|----------------------------|-------------------------------|----------------------------------|
| KR01 | 36000 | R | 14020 | H | C |
| KR02 | 36000 | R | 14040 | V | C |
| KR03 | 36000 | R | 14060 | H | C |
| KR04 | 36000 | R | 14080 | V | C |
| KR05 | 36000 | R | 14100 | H | C |
| KR06 | 36000 | R | 14120 | V | C |
| KR07 | 36000 | R | 14140 | H | C |
| KR08 | 36000 | R | 14160 | V | C |
| KR09 | 36000 | R | 14180 | H | C |
| KR10 | 36000 | R | 14200 | V | C |
| KR11 | 36000 | R | 14220 | H | C |
| KR12 | 36000 | R | 14240 | V | C |
| KR13 | 36000 | R | 14260 | H | C |
| KR14 | 36000 | R | 14280 | V | C |
| KR15 | 36000 | R | 14300 | H | C |
| KR16 | 36000 | R | 14320 | V | C |
| KR17 | 36000 | R | 14340 | H | C |
| KR18 | 36000 | R | 14360 | V | C |
| KR19 | 36000 | R | 14380 | H | C |
| KR20 | 36000 | R | 14400 | V | C |
| KR21 | 36000 | R | 14420 | H | C |
| KR22 | 36000 | R | 14440 | V | C |
| KR23 | 36000 | R | 14460 | H | C |
| KR24 | 36000 | R | 14480 | V | C |
| KT01 | 36000 | T | 11720 | V | C |
| KT02 | 36000 | T | 11740 | H | C |
| KT03 | 36000 | T | 11760 | V | C |
| KT04 | 36000 | T | 11780 | H | C |
| KT05 | 36000 | T | 11800 | V | C |
| KT06 | 36000 | T | 11820 | H | C |

| (a) Transponder ID | (b) Transponder Gain (dB) | Receive Band | | Transmit Band | |
|--------------------|---------------------------|-----------------|-------------|-----------------|-------------|
| | | (c) Channel No. | (d) Beam ID | (e) Channel No. | (f) Beam ID |
| K01 | 119.5 | KR01 | KRH | KT01 | KTV |
| K03 | 119.5 | KR03 | KRH | KT03 | KTV |
| K05 | 119.5 | KR05 | KRH | KT05 | KTV |
| K07 | 119.5 | KR07 | KRH | KT07 | KTV |
| K09 | 119.5 | KR09 | KRH | KT09 | KTV |
| K11 | 119.5 | KR11 | KRH | KT11 | KTV |
| K13 | 119.5 | KR13 | KRH | KT13 | KTV |
| K15 | 119.5 | KR15 | KRH | KT15 | KTV |
| K17 | 119.5 | KR17 | KRH | KT17 | KTV |
| K19 | 119.5 | KR19 | KRH | KT19 | KTV |
| K21 | 119.5 | KR21 | KRH | KT21 | KTV |
| K23 | 119.5 | KR23 | KRH | KT23 | KTV |
| K02 | 119.5 | KR02 | KRV | KT02 | KTH |
| K04 | 119.5 | KR04 | KRV | KT04 | KTH |
| K06 | 119.5 | KR06 | KRV | KT06 | KTH |
| K08 | 119.5 | KR08 | KRV | KT08 | KTH |
| K10 | 119.5 | KR10 | KRV | KT10 | KTH |
| K12 | 119.5 | KR12 | KRV | KT12 | KTH |
| K14 | 119.5 | KR14 | KRV | KT14 | KTH |
| K16 | 119.5 | KR16 | KRV | KT16 | KTH |
| K18 | 119.5 | KR18 | KRV | KT18 | KTH |
| K20 | 119.5 | KR20 | KRV | KT20 | KTH |
| K22 | 119.5 | KR22 | KRV | KT22 | KTH |
| K24 | 119.5 | KR24 | KRV | KT24 | KTH |
| C01 | 105.5 | CR01 | CRH | CT01 | CTV |
| C03 | 105.5 | CR03 | CRH | CT03 | CTV |
| C05 | 105.5 | CR05 | CRH | CT05 | CTV |
| C07 | 105.5 | CR07 | CRH | CT07 | CTV |
| C09 | 105.5 | CR09 | CRH | CT09 | CTV |
| C11 | 105.5 | CR11 | CRH | CT11 | CTV |

| | | | | | |
|------|-------|---|-------|---|---|
| KT07 | 36000 | T | 11840 | V | C |
| KT08 | 36000 | T | 11860 | H | C |
| KT09 | 36000 | T | 11880 | V | C |
| KT10 | 36000 | T | 11900 | H | C |
| KT11 | 36000 | T | 11920 | V | C |
| KT12 | 36000 | T | 11940 | H | C |
| KT13 | 36000 | T | 11960 | V | C |
| KT14 | 36000 | T | 11980 | H | C |
| KT15 | 36000 | T | 12000 | V | C |
| KT16 | 36000 | T | 12020 | H | C |
| KT17 | 36000 | T | 12040 | V | C |
| KT18 | 36000 | T | 12060 | H | C |
| KT19 | 36000 | T | 12080 | V | C |
| KT20 | 36000 | T | 12100 | H | C |
| KT21 | 36000 | T | 12120 | V | C |
| KT22 | 36000 | T | 12140 | H | C |
| KT23 | 36000 | T | 12160 | V | C |
| KT24 | 36000 | T | 12180 | H | C |
| CR01 | 36000 | R | 5945 | H | C |
| CR02 | 36000 | R | 5965 | V | C |
| CR03 | 36000 | R | 5985 | H | C |
| CR04 | 36000 | R | 6005 | V | C |
| CR05 | 36000 | R | 6025 | H | C |
| CR06 | 36000 | R | 6045 | V | C |
| CR07 | 36000 | R | 6065 | H | C |
| CR08 | 36000 | R | 6085 | V | C |
| CR09 | 36000 | R | 6105 | H | C |
| CR10 | 36000 | R | 6125 | V | C |
| CR11 | 36000 | R | 6145 | H | C |
| CR12 | 36000 | R | 6165 | V | C |
| CR13 | 36000 | R | 6185 | H | C |
| CR14 | 36000 | R | 6205 | V | C |
| CR15 | 36000 | R | 6225 | H | C |
| CR16 | 36000 | R | 6245 | V | C |
| CR17 | 36000 | R | 6265 | H | C |
| CR18 | 36000 | R | 6285 | V | C |
| CR19 | 36000 | R | 6305 | H | C |
| CR20 | 36000 | R | 6325 | V | C |
| CR21 | 36000 | R | 6345 | H | C |

| | | | | | |
|------|-------|-------|-----|-------|------|
| C13 | 105.5 | CR13 | CRH | CT13 | CTV |
| C15 | 105.5 | CR15 | CRH | CT15 | CTV |
| C17 | 105.5 | CR17 | CRH | CT17 | CTV |
| C19 | 105.5 | CR19 | CRH | CT19 | CTV |
| C21 | 105.5 | CR21 | CRH | CT21 | CTV |
| C23 | 105.5 | CR23 | CRH | CT23 | CTV |
| C02 | 105.5 | CR02 | CRV | CT02 | CTH |
| C04 | 105.5 | CR04 | CRV | CT04 | CTH |
| C06 | 105.5 | CR06 | CRV | CT06 | CTH |
| C08 | 105.5 | CR08 | CRV | CT08 | CTH |
| C10 | 105.5 | CR10 | CRV | CT10 | CTH |
| C12 | 105.5 | CR12 | CRV | CT12 | CTH |
| C14 | 105.5 | CR14 | CRV | CT14 | CTH |
| C16 | 105.5 | CR16 | CRV | CT16 | CTH |
| C18 | 105.5 | CR18 | CRV | CT18 | CTH |
| C20 | 105.5 | CR20 | CRV | CT20 | CTH |
| C22 | 105.5 | CR22 | CRV | CT22 | CTH |
| C24 | 105.5 | CR24 | CRH | CT24 | CTH |
| X01 | 112.5 | KR14 | KRV | CT14 | CTH |
| X02 | 112.5 | KR16 | KRV | CT16 | CTH |
| X03 | 112.5 | KR18 | KRV | CT18 | CTH |
| X04 | 112.5 | KR20 | KRV | CT20 | CTH |
| X05 | 112.5 | KR22 | KRV | CT22 | CTH |
| X06 | 112.5 | KR24 | KRV | CT24 | CTH |
| X07 | 111 | CR14 | CRV | KT14 | KTH |
| X08 | 111 | CR16 | CRV | KT16 | KTH |
| X09 | 111 | CR18 | CRV | KT18 | KTH |
| X10 | 111 | CR20 | CRV | KT20 | KTH |
| X11 | 111 | CR22 | CRV | KT22 | KTH |
| X12 | 111 | CR24 | CRV | KT24 | KTH |
| TCC | | CC1 | CRH | | |
| TCK | | KUC1 | KRV | | |
| TBC1 | | | | CBCN1 | CTH |
| TBC2 | | | | CBCN2 | CTV |
| TBK1 | | | | KBCN1 | KTV |
| TBK2 | | | | KBCN2 | KTH |
| KA02 | 106.9 | KAR02 | KAR | KAT02 | KATR |
| KA03 | 106.9 | KAR03 | KAR | KAT03 | KATR |
| KA04 | 106.9 | KAR04 | KAR | KAT04 | KATR |

| | | | | | |
|-------|-------|---|----------|---|---|
| CR22 | 36000 | R | 6365 | V | C |
| CR23 | 36000 | R | 6385 | H | C |
| CR24 | 36000 | R | 6405 | V | C |
| CT01 | 36000 | T | 3720 | V | C |
| CT02 | 36000 | T | 3740 | H | C |
| CT03 | 36000 | T | 3760 | V | C |
| CT04 | 36000 | T | 3780 | H | C |
| CT05 | 36000 | T | 3800 | V | C |
| CT06 | 36000 | T | 3820 | H | C |
| CT07 | 36000 | T | 3840 | V | C |
| CT08 | 36000 | T | 3860 | H | C |
| CT09 | 36000 | T | 3880 | V | C |
| CT10 | 36000 | T | 3900 | H | C |
| CT11 | 36000 | T | 3920 | V | C |
| CT12 | 36000 | T | 3940 | H | C |
| CT13 | 36000 | T | 3960 | V | C |
| CT14 | 36000 | T | 3980 | H | C |
| CT15 | 36000 | T | 4000 | V | C |
| CT16 | 36000 | T | 4020 | H | C |
| CT17 | 36000 | T | 4040 | V | C |
| CT18 | 36000 | T | 4060 | H | C |
| CT19 | 36000 | T | 4080 | V | C |
| CT20 | 36000 | T | 4100 | H | C |
| CT21 | 36000 | T | 4120 | V | C |
| CT22 | 36000 | T | 4140 | H | C |
| CT23 | 36000 | T | 4160 | V | C |
| CT24 | 36000 | T | 4180 | H | C |
| CC1 | 800 | R | 6423.5 | H | T |
| KUC1 | 800 | R | 14499 | V | T |
| CBCN1 | 400 | T | 3700.5 | H | T |
| CBCN2 | 400 | T | 4199.5 | V | T |
| KBCN1 | 400 | T | 11701 | V | T |
| KBCN2 | 400 | T | 12199 | H | T |
| KAR01 | 31000 | R | 24769.15 | L | C |
| KAT01 | 31000 | T | 17319.15 | R | C |
| KAR02 | 31000 | R | 24803.45 | L | C |
| KAR03 | 31000 | R | 24837.75 | L | C |
| KAR04 | 31000 | R | 24872.05 | L | C |
| KAR05 | 31000 | R | 24906.35 | L | C |

| | | | | | |
|------|-------|-------|-----|-------|------|
| KA05 | 106.9 | KAR05 | KAR | KAT05 | KATR |
| KA06 | 106.9 | KAR06 | KAR | KAT06 | KATR |
| KA07 | 106.9 | KAR07 | KAR | KAT07 | KATR |
| KA08 | 106.9 | KAR08 | KAR | KAT08 | KATR |
| KA09 | 106.9 | KAR09 | KAR | KAT09 | KATR |
| KA10 | 106.9 | KAR10 | KAR | KAT10 | KATR |
| KA11 | 106.9 | KAR11 | KAR | KAT11 | KATR |
| KA12 | 106.9 | KAR12 | KAR | KAT12 | KATR |
| KA13 | 106.9 | KAR13 | KAR | KAT13 | KATR |
| KA14 | 106.9 | KAR14 | KAR | KAT14 | KATR |
| KA15 | 106.9 | KAR01 | KAR | KAT15 | KATL |
| KA16 | 106.9 | KAR02 | KAR | KAT16 | KATL |
| KA17 | 106.9 | KAR03 | KAR | KAT17 | KATL |
| KA18 | 106.9 | KAR04 | KAR | KAT18 | KATL |
| KA19 | 106.9 | KAR05 | KAR | KAT19 | KATL |
| KA20 | 106.9 | KAR06 | KAR | KAT20 | KATL |
| KA21 | 106.9 | KAR07 | KAR | KAT21 | KATL |
| KA22 | 106.9 | KAR08 | KAR | KAT22 | KATL |
| KA23 | 106.9 | KAR09 | KAR | KAT23 | KATL |
| KA24 | 106.9 | KAR10 | KAR | KAT24 | KATL |
| KA25 | 106.9 | KAR11 | KAR | KAT25 | KATL |
| KA01 | 106.9 | KAR01 | KAR | KAT01 | KATR |
| KA26 | 106.9 | KAR12 | KAR | KAT26 | KATL |
| KA27 | 106.9 | KAR13 | KAR | KAT27 | KATL |
| KA28 | 106.9 | KAR14 | KAR | KAT28 | KATL |

| | | | | | |
|-------|-------|---|----------|---|---|
| KAR06 | 31000 | R | 24940.65 | L | C |
| KAR07 | 31000 | R | 24974.95 | L | C |
| KAR08 | 31000 | R | 25009.25 | L | C |
| KAR09 | 31000 | R | 25043.55 | L | C |
| KAR10 | 31000 | R | 25077.85 | L | C |
| KAR11 | 31000 | R | 25112.15 | L | C |
| KAR12 | 31000 | R | 25146.45 | L | C |
| KAR13 | 31000 | R | 25180.75 | L | C |
| KAR14 | 31000 | R | 25215.05 | L | C |
| KAT02 | 31000 | T | 17353.45 | R | C |
| KAT03 | 31000 | T | 17387.75 | R | C |
| KAT04 | 31000 | T | 17422.05 | R | C |
| KAT05 | 31000 | T | 17456.35 | R | C |
| KAT06 | 31000 | T | 17490.65 | R | C |
| KAT07 | 31000 | T | 17524.95 | R | C |
| KAT08 | 31000 | T | 17559.25 | R | C |
| KAT09 | 31000 | T | 17593.55 | R | C |
| KAT10 | 31000 | T | 17627.85 | R | C |
| KAT11 | 31000 | T | 17662.15 | R | C |
| KAT12 | 31000 | T | 17696.45 | R | C |
| KAT13 | 31000 | T | 17730.75 | R | C |
| KAT14 | 31000 | T | 17765.05 | R | C |
| KAT15 | 31000 | T | 17319.15 | L | C |
| KAT16 | 31000 | T | 17353.45 | L | C |
| KAT17 | 31000 | T | 17387.75 | L | C |
| KAT18 | 31000 | T | 17422.05 | L | C |
| KAT19 | 31000 | T | 17456.35 | L | C |
| KAT20 | 31000 | T | 17490.65 | L | C |
| KAT21 | 31000 | T | 17524.95 | L | C |
| KAT22 | 31000 | T | 17559.25 | L | C |
| KAT23 | 31000 | T | 17593.55 | L | C |
| KAT24 | 31000 | T | 17627.85 | L | C |
| KAT25 | 31000 | T | 17662.15 | L | C |
| KAT26 | 31000 | T | 17696.45 | L | C |
| KAT27 | 31000 | T | 17730.75 | L | C |
| KAT28 | 31000 | T | 17765.05 | L | C |

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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) |
|---------------------|-------------------------|------------------------------|-------------------|------------------------------|--------------------------------------|-------------------------------|--|-------------------------------------|
| K_A | 36M0G7W | 36000 | 4 | 40000 | 0.69 | | 6.8 | 19 |
| K_B | 27M0G7W | 27000 | 4 | 32000 | 0.69 | | 6.8 | 19 |
| K_C | 6M95G1W | 6950 | 4 | 8000 | 0.69 | | 6.8 | 19 |
| K_D | 5M00G1W | 5000 | 4 | 6000 | 0.69 | | 6.8 | 19 |
| K_E | 100KG1W | 100 | 4 | 56 | 0.69 | | 6.8 | 19 |
| K_F | 1M60G1W | 1600 | 4 | 1544 | 0.69 | | 6.8 | 19 |
| K_G | 36M0G7W | 36000 | 8 | 50000 | 0.61 | | 9.9 | 20 |
| C_A | 36M0G7W | 36000 | 4 | 40000 | 0.69 | | 6.8 | 19 |
| C_B | 27M0G7W | 27000 | 4 | 32000 | 0.69 | | 6.8 | 19 |
| C_C | 6M95G1W | 6950 | 4 | 8000 | 0.69 | | 6.8 | 19 |
| C_D | 5M00G1W | 5000 | 4 | 6000 | 0.69 | | 6.8 | 19 |
| C_E | 100KG1W | 100 | 4 | 56 | 0.69 | | 6.8 | 19 |
| C_F | 1M60G1W | 1600 | 4 | 1544 | 0.69 | | 6.8 | 19 |
| C_G | 36M0G7W | 36000 | 8 | 50000 | 0.61 | | 9.9 | 20 |
| KA_1 | 1M20G1W | 1200 | 4 | 1430 | 0.75 | | 4.7 | 10 |
| KA_2 | 5M50G1W | 5500 | 4 | 4758 | 0.5 | | 1.3 | 10 |

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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) |
| K01 | K24 | K_A | | 1 | | S13_linkbuds.xl | | 57.3 | 20 | 25 | 46.4 | 49.4 | -154.4 | 18.4 |
| K01 | K24 | K_B | | 1 | | S13_linkbuds.xl | | 57.3 | 20 | 25 | 45.1 | 48.1 | -154.5 | 18.4 |
| K01 | K24 | K_C | | 5 | 6950 | S13_linkbuds.xl | | 53 | 8.9 | 14 | 32.7 | 35.7 | -161 | 26.9 |
| K01 | K24 | K_D | | 6 | 5000 | S13_linkbuds.xl | | 53 | 8.9 | 14 | 31.3 | 34.3 | -161 | 26.9 |
| K01 | K24 | K_E | | 250 | 100 | S13_linkbuds.xl | | 46.7 | -2 | 3 | 15.5 | 18.5 | -159.8 | 20.9 |
| K01 | K24 | K_F | | 20 | 1544 | S13_linkbuds.xl | | 46.7 | 8 | 13 | 25.5 | 28.5 | -161.8 | 26.9 |
| K01 | K24 | K_G | | 1 | | S13_linkbuds.xl | | 57.3 | 20 | 25 | 46.4 | 49.4 | -154.4 | 26.9 |
| C01 | C24 | C_A | | 1 | | S13_linkbuds.xl | | 53.5 | 21.6 | 25.1 | 36.5 | 37 | -166.8 | 22.1 |
| C01 | C24 | C_B | | 1 | | S13_linkbuds.xl | | 53.5 | 16.5 | 20 | 36.5 | 37 | -165.6 | 22.1 |
| C01 | C24 | C_C | | 5 | 6950 | S13_linkbuds.xl | | 53.5 | 6.1 | 9.6 | 25.3 | 25.8 | -170.9 | 22.1 |
| C01 | C24 | C_D | | 6 | 5000 | S13_linkbuds.xl | | 53.5 | 8.5 | 12 | 25.3 | 25.8 | -169.5 | 22.1 |
| C01 | C24 | C_E | | 250 | 100 | S13_linkbuds.xl | | 47.5 | -6.9 | -3.4 | 6.3 | 6.8 | -171.5 | 22.1 |
| C01 | C24 | C_F | | 20 | 1544 | S13_linkbuds.xl | | 47.5 | 8.3 | 11.8 | 21.5 | 22 | -168.3 | 22.1 |
| C01 | C24 | C_G | | 1 | | S13_linkbuds.xl | | 53.5 | 21.6 | 25.1 | 36.5 | 37 | -166.8 | 22.1 |
| K01 | K24 | | K_H | 1 | | S13_linkbuds.xl | 2000 | 57.3 | 19 | 22 | 45.2 | 48.2 | -155.7 | 20.9 |
| C01 | C24 | | C_H | 1 | | S13_linkbuds.xl | 2000 | 53.5 | 23.5 | 25 | 39.2 | 39.7 | -160.5 | 22.1 |
| TCK | TCK | | K_TC | 1 | | S13_linkbuds.xl | | 60.2 | 10 | 15 | | | | |
| TCC | TCC | | C_TC | 1 | | S13_linkbuds.xl | | 57 | 10 | 15 | | | | |
| TBK1 | TBK2 | | K_TM | 1 | | S13_linkbuds.xl | | | | | 19 | 29 | -168 | 34.6 |
| TBC1 | TBC2 | | C_TM | 1 | | S13_linkbuds.xl | | | | | 16 | 26 | -176.9 | 22.5 |
| KA01 | KA28 | KA_1 | | 1 | | S13_linkbuds.xl | | 65 | 3 | 4 | 28.3 | 31.3 | -144.1 | 20.9 |
| KA01 | KA28 | KA_2 | | 1 | | S13_linkbuds.xl | | 65 | 8 | 10.5 | 28.3 | 31.3 | -144.1 | 24.87 |
| KA01 | KA28 | KA_1 | | 2 | 10000 | S13_linkbuds.xl | | 65 | 3 | 4 | 28.3 | 31.3 | -144.1 | 20.9 |
| KA01 | KA28 | KA_2 | | 2 | 10000 | S13_linkbuds.xl | | 65 | 8 | 10.5 | 28.3 | 31.3 | -144.1 | 24.87 |

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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): #Error

Remote Control (TT C) Location(s):

| | | | |
|---|---------------|---|--------------------------|
| S14a: Street Address: Woodbine TT&C | | | |
| S14b. City: Mt. Airy | S14c. County: | S14d. State/Country MD | S14e. Zip Code: 21771 |
| S14f. Telephone Number: 410-549-4300 | | S14g. Call Sign of Control Station (if appropriate): E7169 | |

Remote Control (TT C) Location(s):

| | | | |
|--|---------------|--|--------------------------|
| S14a: Street Address: Vernon Valley Spacecraft Operations | | | |
| S14b. City: Sussex | S14c. County: | S14d. State/Country NJ | S14e. Zip Code: 07461 |
| S14f. Telephone Number: 973-823-6000 | | S14g. Call Sign of Control Station (if appropriate): WB81 | |

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

| | | |
|---|-----------------------------------|---|
| S15a. Mass of spacecraft without fuel (kg): 1445 | Spacecraft Dimensions (meters) | Probability of Survival to End of Life (0.0 - 1.0) |
| S15b. Mass of fuel and disposables at launch (kg): 1822 | | |
| S15c. Mass of spacecraft and fuel at launch (kg): 3267 | S15f. Length (m): 23.5 | S15i. Payload: 0.94 |
| S15d. Mass of fuel, in orbit, at beginning of life (kg): 619 | S15g. Width (m): 7.7 | S15j. Bus: 0.88 |
| S15e. Deployed Area of Solar Array (square meters): 39 | S15h. Height (m): 3.9 | 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): 4916 | (f): 4916 | (k): 4916 | (p): 4916 |
| Bus (Watts): | (b): 429 | (g): 361 | (l): 467 | (q): 375 |
| Total (Watts): | (c): 5345 | (h): 5277 | (m): 5383 | (r): 5291 |
| Solar Array (Watts): | (d): 7312 | (i): 6561 | (n): 6265 | (s): 5720 |
| Depth of Battery Discharge (%): | (e) 15 % | (j) 12.6 % | (o) 10.9 % | (t) 19.1 % |

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.