

**FCC 312  
 Schedule S**

**FEDERAL COMMUNICATIONS COMMISSION  
 SATELLITE SPACE STATION AUTHORIZATIONS  
 (Technical and Operational Description)**

**Page 1: General,  
 Frequency Bands,  
 and GSO Orbit**

**S1. GENERAL INFORMATION** Complete for all satellite applications.

|   |                          |   |  |  |  |
|---|--------------------------|---|--|--|--|
| a. Space Station or Satellite Network Name:<br>SES-10 |                          | e. Estimated Date of Placement into Service:                              |  | i. Will the space station(s) operate on a Common Carrier Basis:<br>N   |  |
| b. Construction Commencement Date:                    |                          | f. Estimated Lifetime of Satellite(s):<br>15 Years                        |  | j. Number of transponders offered on a common carrier basis:<br>0  |  |
| c. Construction Completion Date:                      |                          | g. Total Number of Transponders:<br>50                                    |  | k. Total Common Carrier Transponder Bandwidth:<br>0 MHz  |  |
| d1. Est Launch Date Begin:                            | d2. Est Launch Date End: | h. Total Transponder Bandwidth (no. transponders x Bandwidth)<br>2232 MHz |  | l. Orbit Type: Mark all boxes that apply:<br><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) |             |   |
| 13.75                 | G               | 14                   | G               | R           | Fixed Satellite Service                                   |
| 14                    | G               | 14.5                 | G               | R           | Fixed Satellite Service                                   |
| 17.3                  | G               | 17.55                | G               | R           | Fixed Satellite Service                                   |
| 27.85                 | G               | 28.35                | G               | R           | Fixed Satellite Service                                   |
| 10.95                 | G               | 11.2                 | G               | T           | Fixed Satellite Service                                   |
| 11.45                 | G               | 11.7                 | G               | T           | Fixed Satellite Service                                   |
| 11.7                  | G               | 12.2                 | G               | T           | Fixed Satellite Service                                   |
| 11.7                  | G               | 12.2                 | G               | T           | Direct to Home in the Fixed Fixed Satellite Service       |

**S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:**

|   |              |   |  |   |
|---|--------------|---|--|---|
| a. Nominal Orbital Longitude (Degrees E/W):<br>67 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:                                |  |   |
| d. Toward West:                                     | 0.05 Degrees | Range of orbital are in which adequate service can be provided (Optional):<br>Degrees E/W |  |   |
| e. Toward East:                                     | 0.05 Degrees | g. Westernmost:<br>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:

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. |
|---------------------|---|---|---|
| HSA-D               | S   |   | Spanish speaking South America including Galapagos, Easter Island, San Andres and Providencia   |
| BR-D                | S   |   | Brazil  |
| MCC-D               | S   |   | Mexico, Central America and the Caribbean   |
| LIM-U               | E   |   | Part of Peru  |
| HSA-U               | E   |   | Spanish speaking South America including Galapagos, Easter Island, San Andres and Providencia   |
| BR-U                | E   |   | Brazil  |
| MCC-U               | E   |   | Mexico, Central America and the Caribbean   |
| TM                  | S   |   | Global  |
| TC                  | E   |   | Global  |

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S7. SPACE STATION ANTENNA BEAM CHARACTERISTICS For each antenna beam provide:

| (a)<br>Beam<br>ID | (b)<br>T/R<br>Mode | Isotropic Antenna<br>Gain |                  | (e)<br>Pointing<br>Error<br>(Degrees) | (f)<br>Rotational<br>Error<br>(Degrees) | (g) Min.<br>Cross-<br>Polar Iso-<br>lation (dB) | (h) Polar-<br>ization<br>Switch-<br>able?<br>(Y/N) | (i) Polarization<br>Alignment Rel.<br>Equatorial<br>Plane (Degrees) | (j) Service<br>Area ID | Transmit                    |                                      |                              | Receive                            |                                       |  |                       |   |
|-------------------|--------------------|---------------------------|------------------|---------------------------------------|---|---|--|---|------------------------|-----------------------------|--------------------------------------|------------------------------|------------------------------------|---------------------------------------|--|-----------------------|---|
|                   |                    |                           |                  |                                       |   |   |  |   |                        | (k) Input<br>Losses<br>(dB) | (l) Effective<br>Output<br>Power (W) | (m)<br>Max.<br>EIRP<br>(dBW) | (n)<br>System<br>Noise<br>Temp (k) | (o) G/T<br>Max.<br>Gain Pt.<br>(db/K) | (p) Min.<br>Saturation<br>Flux Density<br>(dBW/m2) | Input Attenuator (dB) |   |
|                   |                    | (q) Max.<br>Value         | (r) Step<br>Size |                                       |   |   |  |   |                        |                             |                                      |                              |                                    |                                       |  |                       |   |
| M-RH              | R                  | 0                         |                  | 0.1                                   | 0                                       | 27  | N  | 0   | MCC-U                  |                             |                                      |                              | 1                                  | 6.81                                  | -89.81   | 1                     | 1 |
| M-RV              | R                  |                           |                  | 0.1                                   | 0                                       | 27  | N  | 90  | MCC-U                  |                             |                                      |                              | 1                                  | 6.89                                  | -89.89   | 1                     | 1 |
| M-TH              | T                  | 0                         |                  | 0.1                                   | 0                                       | 27  | N  | 0   | MCC-D                  | 1                           | 1                                    | 52.79                        |                                    |                                       |  |                       |   |
| M-TV              | T                  |                           |                  | 0.1                                   | 0                                       | 27  | N  | 90  | MCC-D                  | 1                           | 1                                    | 53.06                        |                                    |                                       |  |                       |   |
| H-RH              | R                  |                           |                  | 0.1                                   | 0                                       | 30  | N  | 0   | HSA-U                  |                             |                                      |                              | 1                                  | 3.81                                  | -86.81   | 1                     | 1 |
| H-RV              | R                  |                           |                  | 0.1                                   | 0                                       | 30  | N  | 90  | HSA-U                  |                             |                                      |                              | 1                                  | 3.82                                  | -86.82   | 1                     | 1 |
| H-TH              | T                  |                           |                  | 0.1                                   | 0                                       | 30  | N  | 0   | HSA-D                  | 1                           | 1                                    | 50.11                        |                                    |                                       |  |                       |   |
| H-TV              | T                  |                           |                  | 0.1                                   | 0                                       | 30  | N  | 90  | HSA-D                  | 1                           | 1                                    | 50.37                        |                                    |                                       |  |                       |   |
| B-RH              | R                  |                           |                  | 0.1                                   | 0                                       | 27  | N  | 0   | BR-U                   |                             |                                      |                              | 1                                  | 7.78                                  | -90.78   | 1                     | 1 |
| B-RV              | R                  |                           |                  | 0.1                                   | 0                                       | 27  | N  | 90  | BR-U                   |                             |                                      |                              | 1                                  | 7.5                                   | -90.5  | 1                     | 1 |
| B-TH              | T                  |                           |                  | 0.1                                   | 0                                       | 27  | N  | 0   | BR-D                   | 1                           | 1                                    | 52.65                        |                                    |                                       |  |                       |   |
| B-TV              | T                  |                           |                  | 0.1                                   | 0                                       | 27  | N  | 90  | BR-D                   | 1                           | 1                                    | 52.14                        |                                    |                                       |  |                       |   |
| L-RC              | R                  |                           |                  | 0.1                                   | 0                                       | 30  | N  |   | LIM-U                  |                             |                                      |                              | 1                                  | 15.14                                 | -98.14   | 1                     | 1 |
| L-RC              | R                  |                           |                  | 0.1                                   | 0                                       | 30  | N  |   | LIM-U                  |                             |                                      |                              | 1                                  | 15.12                                 | -98.12   | 1                     | 1 |
| TMG               | T                  |                           |                  | 0.1                                   | 0                                       | 30  | N  | 0   | TM                     | 1                           | 1                                    | 18.1                         |                                    |                                       |  |                       |   |
| TM-O              | T                  |                           |                  | 0.1                                   | 0                                       | 30  | N  | 0   | TM                     | 1                           | 1                                    | 3                            |                                    |                                       |  |                       |   |
| TCG               | R                  |                           |                  | 0.1                                   | 0                                       | 30  | N  | 0   | TC                     |                             |                                      |                              | 1                                  | -3.8                                  | -79.2  | 1                     | 1 |
| TC-O              | R                  |                           |                  | 0.1                                   | 0                                       | 30  | N  | 0   | TC                     |                             |                                      |                              | 1                                  | -25.16                                | -57.84   | 1                     | 1 |
| TMG               | T                  |                           |                  | 0.1                                   | 0                                       | 30  | N  | 90  | TM                     | 1                           | 1                                    | 18.1                         |                                    |                                       |  |                       |   |
| TCG               | R                  |                           |                  | 0.1                                   | 0                                       | 30  | N  | 90  | TC                     |                             |                                      |                              | 1                                  | -3.8                                  | -79.2  | 1                     | 1 |



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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) |
|-----------------|------------------------------|--------------|----------------------------|-------------------------------|----------------------------------|
| UL011           | 36000                        | R            | 13780                      | H                             | C                                |
| UL012           | 36000                        | R            | 13780                      | H                             | C                                |
| UL013           | 36000                        | R            | 28120                      | R                             | C                                |
| UL021           | 36000                        | R            | 13820                      | H                             | C                                |
| UL022           | 36000                        | R            | 13820                      | H                             | C                                |
| UL023           | 36000                        | R            | 28160                      | R                             | C                                |
| UL031           | 36000                        | R            | 13860                      | H                             | C                                |
| UL032           | 36000                        | R            | 13860                      | H                             | C                                |
| UL033           | 36000                        | R            | 28200                      | R                             | C                                |
| UL041           | 36000                        | R            | 13900                      | H                             | C                                |
| UL042           | 36000                        | R            | 13900                      | H                             | C                                |
| UL043           | 36000                        | R            | 28240                      | R                             | C                                |
| UL051           | 36000                        | R            | 13940                      | H                             | C                                |
| UL052           | 36000                        | R            | 13940                      | H                             | C                                |
| UL053           | 36000                        | R            | 28280                      | R                             | C                                |
| UL061           | 36000                        | R            | 13980                      | H                             | C                                |
| UL062           | 36000                        | R            | 13980                      | H                             | C                                |
| UL063           | 36000                        | R            | 28320                      | R                             | C                                |
| UL071           | 36000                        | R            | 14030                      | H                             | C                                |
| UL072           | 36000                        | R            | 14030                      | H                             | C                                |
| UL073           | 36000                        | R            | 14030                      | H                             | C                                |
| UL074           | 36000                        | R            | 14030                      | H                             | C                                |
| UL075           | 36000                        | R            | 14030                      | H                             | C                                |
| UL076           | 36000                        | R            | 14030                      | H                             | C                                |
| UL077           | 36000                        | R            | 14030                      | H                             | C                                |
| UL078           | 36000                        | R            | 14030                      | H                             | C                                |
| UL079           | 36000                        | R            | 14030                      | H                             | C                                |
| UL081           | 36000                        | R            | 14070                      | H                             | C                                |
| UL082           | 36000                        | R            | 14070                      | H                             | C                                |
| UL083           | 36000                        | R            | 14070                      | 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 |
| K0011              | 1                         | UL011           | M-RH        | DL011           | M-TV        |
| K0012              | 1                         | UL012           | B-RH        | DL011           | M-TV        |
| K0013              | 1                         | UL013           | L-RCR       | DL011           | M-TV        |
| K0021              | 1                         | UL021           | M-RH        | DL021           | M-TV        |
| K0022              | 1                         | UL022           | B-RH        | DL021           | M-TV        |
| K0023              | 1                         | UL023           | L-RCR       | DL021           | M-TV        |
| K0031              | 1                         | UL031           | M-RH        | DL031           | M-TV        |
| K0032              | 1                         | UL032           | B-RH        | DL031           | M-TV        |
| K0033              | 1                         | UL033           | L-RCR       | DL031           | M-TV        |
| K0041              | 1                         | UL041           | M-RH        | DL041           | M-TV        |
| K0042              | 1                         | UL042           | B-RH        | DL041           | M-TV        |
| K0043              | 1                         | UL043           | L-RCR       | DL041           | M-TV        |
| K0051              | 1                         | UL051           | M-RH        | DL051           | M-TV        |
| K0052              | 1                         | UL052           | B-RH        | DL051           | M-TV        |
| K0053              | 1                         | UL053           | L-RCR       | DL051           | M-TV        |
| K0061              | 1                         | UL061           | M-RH        | DL061           | M-TV        |
| K0062              | 1                         | UL062           | B-RH        | DL061           | M-TV        |
| K0063              | 1                         | UL063           | L-RCR       | DL061           | M-TV        |
| K0071              | 1                         | UL071           | M-RH        | DL071           | M-TV        |
| K0072              | 1                         | UL072           | H-RH        | DL071           | M-TV        |
| K0073              | 1                         | UL073           | B-RH        | DL071           | M-TV        |
| K0074              | 1                         | UL074           | M-RH        | DL072           | H-TV        |
| K0075              | 1                         | UL075           | H-RH        | DL072           | H-TV        |
| K0076              | 1                         | UL076           | B-RH        | DL072           | H-TV        |
| K0077              | 1                         | UL077           | M-RH        | DL073           | B-TV        |
| K0078              | 1                         | UL078           | H-RH        | DL073           | B-TV        |
| K0079              | 1                         | UL079           | B-RH        | DL073           | B-TV        |
| K0081              | 1                         | UL081           | M-RH        | DL081           | M-TV        |
| K0082              | 1                         | UL082           | H-RH        | DL081           | M-TV        |
| K0083              | 1                         | UL083           | B-RH        | DL081           | M-TV        |

|       |       |   |       |   |   |
|-------|-------|---|-------|---|---|
| UL084 | 36000 | R | 14070 | H | C |
| UL085 | 36000 | R | 14070 | H | C |
| UL086 | 36000 | R | 14070 | H | C |
| UL087 | 36000 | R | 14070 | H | C |
| UL088 | 36000 | R | 14070 | H | C |
| UL089 | 36000 | R | 14070 | H | C |
| UL091 | 36000 | R | 14110 | H | C |
| UL092 | 36000 | R | 14110 | H | C |
| UL093 | 36000 | R | 14110 | H | C |
| UL094 | 36000 | R | 14110 | H | C |
| UL095 | 36000 | R | 14110 | H | C |
| UL096 | 36000 | R | 14110 | H | C |
| UL097 | 36000 | R | 14110 | H | C |
| UL098 | 36000 | R | 14110 | H | C |
| UL099 | 36000 | R | 14110 | H | C |
| UL101 | 36000 | R | 14150 | H | C |
| UL102 | 36000 | R | 14150 | H | C |
| UL103 | 36000 | R | 14150 | H | C |
| UL104 | 36000 | R | 14150 | H | C |
| UL105 | 36000 | R | 14150 | H | C |
| UL106 | 36000 | R | 14150 | H | C |
| UL107 | 36000 | R | 14150 | H | C |
| UL108 | 36000 | R | 14150 | H | C |
| UL109 | 36000 | R | 14150 | H | C |
| UL111 | 36000 | R | 14190 | H | C |
| UL112 | 36000 | R | 14190 | H | C |
| UL113 | 36000 | R | 14190 | H | C |
| UL114 | 36000 | R | 14190 | H | C |
| UL115 | 36000 | R | 14190 | H | C |
| UL116 | 36000 | R | 14190 | H | C |
| UL117 | 36000 | R | 14190 | H | C |
| UL118 | 36000 | R | 14190 | H | C |
| UL119 | 36000 | R | 14190 | H | C |
| UL121 | 36000 | R | 14230 | H | C |
| UL122 | 36000 | R | 14230 | H | C |
| UL123 | 36000 | R | 14230 | H | C |
| UL124 | 36000 | R | 14230 | H | C |
| UL125 | 36000 | R | 14230 | H | C |
| UL126 | 36000 | R | 14230 | H | C |

|       |   |       |      |       |      |
|-------|---|-------|------|-------|------|
| K0084 | 1 | UL084 | M-RH | DL082 | H-TV |
| K0085 | 1 | UL085 | H-RH | DL082 | H-TV |
| K0086 | 1 | UL086 | B-RH | DL082 | H-TV |
| K0087 | 1 | UL087 | M-RH | DL083 | B-TV |
| K0088 | 1 | UL088 | H-RH | DL083 | B-TV |
| K0089 | 1 | UL089 | B-RH | DL083 | B-TV |
| K0091 | 1 | UL091 | M-RH | DL091 | M-TV |
| K0092 | 1 | UL092 | H-RH | DL091 | M-TV |
| K0093 | 1 | UL093 | B-RH | DL091 | M-TV |
| K0094 | 1 | UL094 | M-RH | DL092 | H-TV |
| K0095 | 1 | UL095 | H-RH | DL092 | H-TV |
| K0096 | 1 | UL096 | B-RH | DL092 | H-TV |
| K0097 | 1 | UL097 | M-RH | DL093 | B-TV |
| K0098 | 1 | UL098 | H-RH | DL093 | B-TV |
| K0099 | 1 | UL099 | B-RH | DL093 | B-TV |
| K0101 | 1 | UL101 | M-RH | DL101 | M-TV |
| K0102 | 1 | UL102 | H-RH | DL101 | M-TV |
| K0103 | 1 | UL103 | B-RH | DL101 | M-TV |
| K0104 | 1 | UL104 | M-RH | DL102 | H-TV |
| K0105 | 1 | UL105 | H-RH | DL102 | H-TV |
| K0106 | 1 | UL106 | B-RH | DL102 | H-TV |
| K0107 | 1 | UL107 | M-RH | DL103 | B-TV |
| K0108 | 1 | UL108 | H-RH | DL103 | B-TV |
| K0109 | 1 | UL109 | B-RH | DL103 | B-TV |
| K0111 | 1 | UL111 | M-RH | DL111 | M-TV |
| K0112 | 1 | UL112 | H-RH | DL111 | M-TV |
| K0113 | 1 | UL113 | B-RH | DL111 | M-TV |
| K0114 | 1 | UL114 | M-RH | DL112 | H-TV |
| K0115 | 1 | UL115 | H-RH | DL112 | H-TV |
| K0116 | 1 | UL116 | B-RH | DL112 | H-TV |
| K0117 | 1 | UL117 | M-RH | DL113 | B-TV |
| K0118 | 1 | UL118 | H-RH | DL113 | B-TV |
| K0119 | 1 | UL119 | B-RH | DL113 | B-TV |
| K0121 | 1 | UL121 | M-RH | DL121 | M-TV |
| K0122 | 1 | UL122 | H-RH | DL121 | M-TV |
| K0123 | 1 | UL123 | B-RH | DL121 | M-TV |
| K0124 | 1 | UL124 | M-RH | DL122 | H-TV |
| K0125 | 1 | UL125 | H-RH | DL122 | H-TV |
| K0126 | 1 | UL126 | B-RH | DL122 | H-TV |



|       |       |   |       |   |   |
|-------|-------|---|-------|---|---|
| UL127 | 36000 | R | 14230 | H | C |
| UL128 | 36000 | R | 14230 | H | C |
| UL129 | 36000 | R | 14230 | H | C |
| UL131 | 54000 | R | 13790 | V | C |
| UL132 | 54000 | R | 13790 | V | C |
| UL133 | 54000 | R | 13790 | V | C |
| UL134 | 54000 | R | 13790 | V | C |
| UL141 | 54000 | R | 13850 | V | C |
| UL142 | 54000 | R | 13850 | V | C |
| UL143 | 54000 | R | 13850 | V | C |
| UL144 | 54000 | R | 13850 | V | C |
| UL151 | 54000 | R | 13910 | V | C |
| UL152 | 54000 | R | 13910 | V | C |
| UL153 | 54000 | R | 13910 | V | C |
| UL154 | 54000 | R | 13910 | V | C |
| UL161 | 54000 | R | 13970 | V | C |
| UL162 | 54000 | R | 13970 | V | C |
| UL163 | 54000 | R | 13970 | V | C |
| UL164 | 54000 | R | 13970 | V | C |
| UL171 | 54000 | R | 14040 | V | C |
| UL172 | 54000 | R | 14040 | V | C |
| UL173 | 54000 | R | 14040 | V | C |
| UL174 | 54000 | R | 14040 | V | C |
| UL175 | 54000 | R | 14040 | V | C |
| UL176 | 54000 | R | 14040 | V | C |
| UL177 | 54000 | R | 14040 | V | C |
| UL178 | 54000 | R | 14040 | V | C |
| UL179 | 54000 | R | 14040 | V | C |
| UL181 | 54000 | R | 14100 | V | C |
| UL182 | 54000 | R | 14100 | V | C |
| UL183 | 54000 | R | 14100 | V | C |
| UL184 | 54000 | R | 14100 | V | C |
| UL185 | 54000 | R | 14100 | V | C |
| UL186 | 54000 | R | 14100 | V | C |
| UL187 | 54000 | R | 14100 | V | C |
| UL188 | 54000 | R | 14100 | V | C |
| UL189 | 54000 | R | 14100 | V | C |
| UL191 | 54000 | R | 14160 | V | C |
| UL192 | 54000 | R | 14160 | V | C |

|       |   |       |      |       |      |
|-------|---|-------|------|-------|------|
| K0127 | 1 | UL127 | M-RH | DL123 | B-TV |
| K0128 | 1 | UL128 | H-RH | DL123 | B-TV |
| K0129 | 1 | UL129 | B-RH | DL123 | B-TV |
| K0131 | 1 | UL131 | M-RV | DL131 | M-TH |
| K0132 | 1 | UL132 | H-RV | DL131 | M-TH |
| K0133 | 1 | UL133 | M-RV | DL132 | H-TH |
| K0134 | 1 | UL134 | H-RV | DL132 | H-TH |
| K0141 | 1 | UL141 | M-RV | DL141 | M-TH |
| K0142 | 1 | UL142 | H-RV | DL141 | M-TH |
| K0143 | 1 | UL143 | M-RV | DL142 | H-TH |
| K0144 | 1 | UL144 | H-RV | DL142 | H-TH |
| K0151 | 1 | UL151 | M-RV | DL151 | M-TH |
| K0152 | 1 | UL152 | H-RV | DL151 | M-TH |
| K0153 | 1 | UL153 | M-RV | DL152 | H-TH |
| K0154 | 1 | UL154 | H-RV | DL152 | H-TH |
| K0161 | 1 | UL161 | M-RV | DL161 | M-TH |
| K0162 | 1 | UL162 | H-RV | DL161 | M-TH |
| K0163 | 1 | UL163 | M-RV | DL162 | H-TH |
| K0164 | 1 | UL164 | H-RV | DL162 | H-TH |
| K0171 | 1 | UL171 | M-RV | DL171 | M-TH |
| K0172 | 1 | UL172 | H-RV | DL171 | M-TH |
| K0173 | 1 | UL173 | B-RV | DL171 | M-TH |
| K0174 | 1 | UL174 | M-RV | DL172 | H-TH |
| K0175 | 1 | UL175 | H-RV | DL172 | H-TH |
| K0176 | 1 | UL176 | B-RV | DL172 | H-TH |
| K0177 | 1 | UL177 | M-RV | DL173 | B-TH |
| K0178 | 1 | UL178 | H-RV | DL173 | B-TH |
| K0179 | 1 | UL179 | B-RV | DL173 | B-TH |
| K0181 | 1 | UL181 | M-RV | DL181 | M-TH |
| K0182 | 1 | UL182 | H-RV | DL181 | M-TH |
| K0183 | 1 | UL183 | B-RV | DL181 | M-TH |
| K0184 | 1 | UL184 | M-RV | DL182 | H-TH |
| K0185 | 1 | UL185 | H-RV | DL182 | H-TH |
| K0186 | 1 | UL186 | B-RV | DL182 | H-TH |
| K0187 | 1 | UL187 | M-RV | DL183 | B-TH |
| K0188 | 1 | UL188 | H-RV | DL183 | B-TH |
| K0189 | 1 | UL189 | B-RV | DL183 | B-TH |
| K0191 | 1 | UL191 | M-RV | DL191 | M-TH |
| K0192 | 1 | UL192 | H-RV | DL191 | M-TH |

|       |       |   |       |   |   |
|-------|-------|---|-------|---|---|
| UL193 | 54000 | R | 14160 | V | C |
| UL194 | 54000 | R | 14160 | V | C |
| UL195 | 54000 | R | 14160 | V | C |
| UL196 | 54000 | R | 14160 | V | C |
| UL197 | 54000 | R | 14160 | V | C |
| UL198 | 54000 | R | 14160 | V | C |
| UL199 | 54000 | R | 14160 | V | C |
| UL201 | 54000 | R | 14220 | V | C |
| UL202 | 54000 | R | 14220 | V | C |
| UL203 | 54000 | R | 14220 | V | C |
| UL204 | 54000 | R | 14220 | V | C |
| UL205 | 54000 | R | 14220 | V | C |
| UL206 | 54000 | R | 14220 | V | C |
| UL207 | 54000 | R | 14220 | V | C |
| UL208 | 54000 | R | 14220 | V | C |
| UL209 | 54000 | R | 14220 | V | C |
| UL211 | 54000 | R | 14280 | V | C |
| UL212 | 54000 | R | 14280 | V | C |
| UL213 | 54000 | R | 14280 | V | C |
| UL214 | 54000 | R | 14280 | V | C |
| UL215 | 54000 | R | 14280 | V | C |
| UL216 | 54000 | R | 14280 | V | C |
| UL221 | 54000 | R | 14340 | V | C |
| UL222 | 54000 | R | 14340 | V | C |
| UL223 | 54000 | R | 14340 | V | C |
| UL224 | 54000 | R | 14340 | V | C |
| UL225 | 54000 | R | 14340 | V | C |
| UL226 | 54000 | R | 14340 | V | C |
| UL231 | 54000 | R | 14400 | V | C |
| UL232 | 54000 | R | 14400 | V | C |
| UL233 | 54000 | R | 14400 | V | C |
| UL234 | 54000 | R | 14400 | V | C |
| UL235 | 54000 | R | 14400 | V | C |
| UL236 | 54000 | R | 14400 | V | C |
| UL241 | 54000 | R | 14460 | V | C |
| UL242 | 54000 | R | 14460 | V | C |
| UL243 | 54000 | R | 14460 | V | C |
| UL244 | 54000 | R | 14460 | V | C |
| UL245 | 54000 | R | 14460 | V | C |

|       |   |       |      |       |      |
|-------|---|-------|------|-------|------|
| K0193 | 1 | UL193 | B-RV | DL191 | M-TH |
| K0194 | 1 | UL194 | M-RV | DL192 | H-TH |
| K0195 | 1 | UL195 | H-RV | DL192 | H-TH |
| K0196 | 1 | UL196 | B-RV | DL192 | H-TH |
| K0197 | 1 | UL197 | M-RV | DL193 | B-TH |
| K0198 | 1 | UL198 | H-RV | DL193 | B-TH |
| K0199 | 1 | UL199 | B-RV | DL193 | B-TH |
| K0201 | 1 | UL201 | M-RV | DL201 | M-TH |
| K0202 | 1 | UL202 | H-RV | DL201 | M-TH |
| K0203 | 1 | UL203 | B-RV | DL201 | M-TH |
| K0204 | 1 | UL204 | M-RV | DL202 | H-TH |
| K0205 | 1 | UL205 | H-RV | DL202 | H-TH |
| K0206 | 1 | UL206 | B-RV | DL202 | H-TH |
| K0207 | 1 | UL207 | M-RV | DL203 | B-TH |
| K0208 | 1 | UL208 | H-RV | DL203 | B-TH |
| K0209 | 1 | UL209 | B-RV | DL203 | B-TH |
| K0211 | 1 | UL211 | M-RV | DL211 | M-TH |
| K0212 | 1 | UL212 | H-RV | DL211 | M-TH |
| K0213 | 1 | UL213 | B-RV | DL211 | M-TH |
| K0214 | 1 | UL214 | M-RV | DL212 | H-TH |
| K0215 | 1 | UL215 | H-RV | DL212 | H-TH |
| K0216 | 1 | UL216 | B-RV | DL212 | H-TH |
| K0221 | 1 | UL221 | M-RV | DL221 | M-TH |
| K0222 | 1 | UL222 | H-RV | DL221 | M-TH |
| K0223 | 1 | UL223 | B-RV | DL221 | M-TH |
| K0224 | 1 | UL224 | M-RV | DL222 | H-TH |
| K0225 | 1 | UL225 | H-RV | DL222 | H-TH |
| K0226 | 1 | UL226 | B-RV | DL222 | H-TH |
| K0231 | 1 | UL231 | M-RV | DL231 | M-TH |
| K0232 | 1 | UL232 | H-RV | DL231 | M-TH |
| K0233 | 1 | UL233 | B-RV | DL231 | M-TH |
| K0234 | 1 | UL234 | M-RV | DL232 | H-TH |
| K0235 | 1 | UL235 | H-RV | DL232 | H-TH |
| K0236 | 1 | UL236 | B-RV | DL232 | H-TH |
| K0241 | 1 | UL241 | M-RV | DL241 | M-TH |
| K0242 | 1 | UL242 | H-RV | DL241 | M-TH |
| K0243 | 1 | UL243 | B-RV | DL241 | M-TH |
| K0244 | 1 | UL244 | M-RV | DL242 | H-TH |
| K0245 | 1 | UL245 | H-RV | DL242 | H-TH |

|       |       |   |       |   |   |
|-------|-------|---|-------|---|---|
| UL246 | 54000 | R | 14460 | V | C |
| UL251 | 54000 | R | 14280 | H | C |
| UL261 | 54000 | R | 14340 | H | C |
| UL271 | 54000 | R | 14400 | H | C |
| UL281 | 54000 | R | 14460 | H | C |
| UL291 | 36000 | R | 17320 | H | C |
| UL292 | 36000 | R | 27880 | R | C |
| UL293 | 36000 | R | 14030 | H | C |
| UL301 | 36000 | R | 17360 | H | C |
| UL302 | 36000 | R | 27920 | R | C |
| UL303 | 36000 | R | 14070 | H | C |
| UL311 | 36000 | R | 17400 | H | C |
| UL312 | 36000 | R | 27960 | R | C |
| UL313 | 36000 | R | 14110 | H | C |
| UL321 | 36000 | R | 17440 | H | C |
| UL322 | 36000 | R | 28000 | R | C |
| UL323 | 36000 | R | 14150 | H | C |
| UL331 | 36000 | R | 17480 | H | C |
| UL332 | 36000 | R | 28040 | R | C |
| UL333 | 36000 | R | 14190 | H | C |
| UL341 | 36000 | R | 17520 | H | C |
| UL342 | 36000 | R | 28080 | R | C |
| UL343 | 36000 | R | 14230 | H | C |
| UL351 | 36000 | R | 17320 | V | C |
| UL352 | 36000 | R | 27880 | L | C |
| UL353 | 54000 | R | 14280 | V | C |
| UL361 | 36000 | R | 17360 | V | C |
| UL362 | 36000 | R | 27920 | L | C |
| UL363 | 54000 | R | 14340 | V | C |
| UL371 | 36000 | R | 17400 | V | C |
| UL372 | 36000 | R | 27960 | L | C |
| UL373 | 54000 | R | 14400 | V | C |
| UL381 | 36000 | R | 17440 | V | C |
| UL382 | 36000 | R | 28000 | L | C |
| UL383 | 54000 | R | 14460 | V | C |
| UL391 | 36000 | R | 17480 | V | C |
| UL392 | 36000 | R | 28040 | L | C |
| UL401 | 36000 | R | 17520 | V | C |
| UL402 | 36000 | R | 28080 | L | C |

|       |  |   |       |       |       |      |
|-------|--|---|-------|-------|-------|------|
| K0246 |  | 1 | UL246 | B-RV  | DL242 | H-TH |
| K0251 |  | 1 | UL251 | H-RH  | DL251 | H-TV |
| K0261 |  | 1 | UL261 | H-RH  | DL261 | H-TV |
| K0271 |  | 1 | UL271 | H-RH  | DL271 | H-TV |
| K0281 |  | 1 | UL281 | H-RH  | DL281 | H-TV |
| K0291 |  | 1 | UL291 | M-RH  | DL291 | M-TV |
| K0292 |  | 1 | UL292 | L-RCR | DL291 | M-TV |
| K0293 |  | 1 | UL293 | B-RH  | DL292 | B-TV |
| K0301 |  | 1 | UL301 | M-RH  | DL301 | M-TV |
| K0302 |  | 1 | UL302 | L-RCR | DL301 | M-TV |
| K0303 |  | 1 | UL303 | B-RH  | DL302 | B-TV |
| K0311 |  | 1 | UL311 | M-RH  | DL311 | M-TV |
| K0312 |  | 1 | UL312 | L-RCR | DL311 | M-TV |
| K0313 |  | 1 | UL313 | B-RH  | DL312 | B-TV |
| K0321 |  | 1 | UL321 | M-RH  | DL321 | M-TV |
| K0322 |  | 1 | UL322 | L-RCR | DL321 | M-TV |
| K0323 |  | 1 | UL323 | B-RH  | DL322 | B-TV |
| K0331 |  | 1 | UL331 | M-RH  | DL331 | M-TV |
| K0332 |  | 1 | UL332 | L-RCR | DL331 | M-TV |
| K0333 |  | 1 | UL333 | B-RH  | DL332 | B-TV |
| K0341 |  | 1 | UL341 | M-RH  | DL341 | M-TV |
| K0342 |  | 1 | UL342 | L-RCR | DL341 | M-TV |
| K0343 |  | 1 | UL343 | B-RH  | DL342 | B-TV |
| K0351 |  | 1 | UL351 | M-RV  | DL351 | M-TH |
| K0352 |  | 1 | UL352 | L-RCL | DL351 | M-TH |
| K0353 |  | 1 | UL353 | B-RV  | DL352 | B-TH |
| K0361 |  | 1 | UL361 | M-RV  | DL361 | M-TH |
| K0362 |  | 1 | UL362 | L-RCL | DL361 | M-TH |
| K0363 |  | 1 | UL363 | B-RV  | DL362 | B-TH |
| K0371 |  | 1 | UL371 | M-RV  | DL371 | M-TH |
| K0372 |  | 1 | UL372 | L-RCL | DL371 | M-TH |
| K0373 |  | 1 | UL373 | B-RV  | DL372 | B-TH |
| K0381 |  | 1 | UL381 | M-RV  | DL381 | M-TH |
| K0382 |  | 1 | UL382 | L-RCL | DL381 | M-TH |
| K0383 |  | 1 | UL383 | B-RV  | DL382 | B-TH |
| K0391 |  | 1 | UL391 | M-RV  | DL391 | M-TH |
| K0392 |  | 1 | UL392 | L-RCL | DL391 | M-TH |
| K0401 |  | 1 | UL401 | M-RV  | DL401 | M-TH |
| K0402 |  | 1 | UL402 | L-RCL | DL401 | M-TH |

|       |       |   |       |   |   |
|-------|-------|---|-------|---|---|
| UL411 | 36000 | R | 13780 | H | C |
| UL412 | 36000 | R | 13780 | H | C |
| UL421 | 36000 | R | 13820 | H | C |
| UL422 | 36000 | R | 13820 | H | C |
| UL431 | 36000 | R | 13860 | H | C |
| UL432 | 36000 | R | 13860 | H | C |
| UL441 | 36000 | R | 13900 | H | C |
| UL442 | 36000 | R | 13900 | H | C |
| UL451 | 36000 | R | 13940 | H | C |
| UL452 | 36000 | R | 13940 | H | C |
| UL461 | 36000 | R | 13980 | H | C |
| UL462 | 36000 | R | 13980 | H | C |
| UL471 | 54000 | R | 14040 | V | C |
| UL472 | 54000 | R | 14280 | V | C |
| UL473 | 54000 | R | 14280 | V | C |
| UL474 | 54000 | R | 14280 | V | C |
| UL481 | 54000 | R | 14100 | V | C |
| UL482 | 54000 | R | 14340 | V | C |
| UL483 | 54000 | R | 14340 | V | C |
| UL484 | 54000 | R | 14340 | V | C |
| UL491 | 54000 | R | 14160 | V | C |
| UL492 | 54000 | R | 14400 | V | C |
| UL493 | 54000 | R | 14400 | V | C |
| UL494 | 54000 | R | 14400 | V | C |
| UL501 | 54000 | R | 14220 | V | C |
| UL502 | 54000 | R | 14460 | V | C |
| UL503 | 54000 | R | 14460 | V | C |
| UL504 | 54000 | R | 14460 | V | C |
| DL011 | 36000 | T | 11480 | V | C |
| DL021 | 36000 | T | 11520 | V | C |
| DL031 | 36000 | T | 11560 | V | C |
| DL041 | 36000 | T | 11600 | V | C |
| DL051 | 36000 | T | 11640 | V | C |
| DL061 | 36000 | T | 11680 | V | C |
| DL071 | 36000 | T | 11730 | V | C |
| DL072 | 36000 | T | 11730 | V | C |
| DL073 | 36000 | T | 11730 | V | C |
| DL081 | 36000 | T | 11770 | V | C |
| DL082 | 36000 | T | 11770 | V | C |

|       |  |   |       |       |       |       |
|-------|--|---|-------|-------|-------|-------|
| K0411 |  | 1 | UL411 | M-RH  | DL411 | B-TV  |
| K0412 |  | 1 | UL412 | B-RH  | DL411 | B-TV  |
| K0421 |  | 1 | UL421 | M-RH  | DL421 | B-TV  |
| K0422 |  | 1 | UL422 | B-RH  | DL421 | B-TV  |
| K0431 |  | 1 | UL431 | M-RH  | DL431 | B-TV  |
| K0432 |  | 1 | UL432 | B-RH  | DL431 | B-TV  |
| K0441 |  | 1 | UL441 | M-RH  | DL441 | B-TV  |
| K0442 |  | 1 | UL442 | B-RH  | DL441 | B-TV  |
| K0451 |  | 1 | UL451 | M-RH  | DL451 | B-TV  |
| K0452 |  | 1 | UL452 | B-RH  | DL451 | B-TV  |
| K0461 |  | 1 | UL461 | M-RH  | DL461 | B-TV  |
| K0462 |  | 1 | UL462 | B-RH  | DL461 | B-TV  |
| K0471 |  | 1 | UL471 | B-RV  | DL471 | B-TH  |
| K0472 |  | 1 | UL472 | M-RV  | DL472 | B-TH  |
| K0473 |  | 1 | UL473 | H-RV  | DL472 | B-TH  |
| K0474 |  | 1 | UL474 | B-RV  | DL472 | B-TH  |
| K0481 |  | 1 | UL481 | B-RV  | DL481 | B-TH  |
| K0482 |  | 1 | UL482 | M-RV  | DL482 | B-TH  |
| K0483 |  | 1 | UL483 | H-RV  | DL482 | B-TH  |
| K0484 |  | 1 | UL484 | B-RV  | DL482 | B-TH  |
| K0491 |  | 1 | UL491 | B-RV  | DL491 | B-TH  |
| K0492 |  | 1 | UL492 | M-RV  | DL492 | B-TH  |
| K0493 |  | 1 | UL493 | H-RV  | DL492 | B-TH  |
| K0494 |  | 1 | UL494 | B-RV  | DL492 | B-TH  |
| K0501 |  | 1 | UL501 | B-RV  | DL501 | B-TH  |
| K0502 |  | 1 | UL502 | M-RV  | DL502 | B-TH  |
| K0503 |  | 1 | UL503 | H-RV  | DL502 | B-TH  |
| K0504 |  | 1 | UL504 | B-RV  | DL502 | B-TH  |
| TC011 |  |   | TC011 | TCGHV |       |       |
| TC021 |  |   | TC021 | TCGHH |       |       |
| TC022 |  |   | TC022 | TCGHV |       |       |
| TC031 |  |   | TC031 | TCGHV |       |       |
| TC032 |  |   | TC032 | TCGHH |       |       |
| TM011 |  |   |       |       | TM011 | TMGHH |
| TM021 |  |   |       |       | TM021 | TMGHV |
| TM031 |  |   |       |       | TM031 | TMGHH |
| TM041 |  |   |       |       | TM041 | TMGHV |

|       |       |   |       |   |   |
|-------|-------|---|-------|---|---|
| DL083 | 36000 | T | 11770 | V | C |
| DL091 | 36000 | T | 11810 | V | C |
| DL092 | 36000 | T | 11810 | V | C |
| DL093 | 36000 | T | 11810 | V | C |
| DL101 | 36000 | T | 11850 | V | C |
| DL102 | 36000 | T | 11850 | V | C |
| DL103 | 36000 | T | 11850 | V | C |
| DL111 | 36000 | T | 11890 | V | C |
| DL112 | 36000 | T | 11890 | V | C |
| DL113 | 36000 | T | 11890 | V | C |
| DL121 | 36000 | T | 11930 | V | C |
| DL122 | 36000 | T | 11930 | V | C |
| DL123 | 36000 | T | 11930 | V | C |
| DL131 | 54000 | T | 11490 | H | C |
| DL132 | 54000 | T | 11490 | H | C |
| DL141 | 54000 | T | 11550 | H | C |
| DL142 | 54000 | T | 11550 | H | C |
| DL151 | 54000 | T | 11610 | H | C |
| DL152 | 54000 | T | 11610 | H | C |
| DL161 | 54000 | T | 11670 | H | C |
| DL162 | 54000 | T | 11670 | H | C |
| DL171 | 54000 | T | 11740 | H | C |
| DL172 | 54000 | T | 11740 | H | C |
| DL173 | 54000 | T | 11740 | H | C |
| DL181 | 54000 | T | 11800 | H | C |
| DL182 | 54000 | T | 11800 | H | C |
| DL183 | 54000 | T | 11800 | H | C |
| DL191 | 54000 | T | 11860 | H | C |
| DL192 | 54000 | T | 11860 | H | C |
| DL193 | 54000 | T | 11860 | H | C |
| DL201 | 54000 | T | 11920 | H | C |
| DL202 | 54000 | T | 11920 | H | C |
| DL203 | 54000 | T | 11920 | H | C |
| DL211 | 54000 | T | 11980 | H | C |
| DL212 | 54000 | T | 11980 | H | C |
| DL221 | 54000 | T | 12040 | H | C |
| DL222 | 54000 | T | 12040 | H | C |
| DL231 | 54000 | T | 12100 | H | C |
| DL232 | 54000 | T | 12100 | H | C |

|       |       |   |       |   |   |
|-------|-------|---|-------|---|---|
| DL241 | 54000 | T | 12160 | H | C |
| DL242 | 54000 | T | 12160 | H | C |
| DL251 | 54000 | T | 11980 | V | C |
| DL261 | 54000 | T | 12040 | V | C |
| DL271 | 54000 | T | 12100 | V | C |
| DL281 | 54000 | T | 12160 | V | C |
| DL291 | 36000 | T | 10970 | V | C |
| DL292 | 36000 | T | 11730 | V | C |
| DL301 | 36000 | T | 11010 | V | C |
| DL302 | 36000 | T | 11770 | V | C |
| DL311 | 36000 | T | 11050 | V | C |
| DL312 | 36000 | T | 11810 | V | C |
| DL321 | 36000 | T | 11090 | V | C |
| DL322 | 36000 | T | 11850 | V | C |
| DL331 | 36000 | T | 11130 | V | C |
| DL332 | 36000 | T | 11890 | V | C |
| DL341 | 36000 | T | 11170 | V | C |
| DL342 | 36000 | T | 11930 | V | C |
| DL351 | 36000 | T | 10970 | H | C |
| DL352 | 54000 | T | 11980 | H | C |
| DL361 | 36000 | T | 11010 | H | C |
| DL362 | 54000 | T | 12040 | H | C |
| DL371 | 36000 | T | 11050 | H | C |
| DL372 | 54000 | T | 12100 | H | C |
| DL381 | 36000 | T | 11090 | H | C |
| DL382 | 54000 | T | 12160 | H | C |
| DL391 | 36000 | T | 11130 | H | C |
| DL401 | 36000 | T | 11170 | H | C |
| DL411 | 36000 | T | 11480 | V | C |
| DL421 | 36000 | T | 11520 | V | C |
| DL431 | 36000 | T | 11560 | V | C |
| DL441 | 36000 | T | 11600 | V | C |
| DL451 | 36000 | T | 11640 | V | C |
| DL461 | 36000 | T | 11680 | V | C |
| DL471 | 54000 | T | 11740 | H | C |
| DL472 | 54000 | T | 11980 | H | C |
| DL481 | 54000 | T | 11800 | H | C |
| DL482 | 54000 | T | 12040 | H | C |
| DL491 | 54000 | T | 11860 | H | C |

|       |       |   |         |   |   |
|-------|-------|---|---------|---|---|
| DL492 | 54000 | T | 12100   | H | C |
| DL501 | 54000 | T | 11920   | H | C |
| DL502 | 54000 | T | 12160   | H | C |
| TC011 | 800   | R | 14005   | V | T |
| TC021 | 800   | R | 14499   | H | T |
| TC022 | 800   | R | 14499   | V | T |
| TC031 | 800   | R | 13751.5 | V | T |
| TC032 | 800   | R | 13751.5 | H | T |
| TM011 | 300   | T | 11703.5 | H | T |
| TM021 | 300   | T | 12196.5 | V | T |
| TM031 | 300   | T | 11702.5 | H | T |
| TM041 | 300   | T | 12197.5 | V | T |

**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) |
|---------------------|-------------------------|------------------------------|-------------------|------------------------------|--------------------------------------|-------------------------------|--|-------------------------------------|
| 0001                | 100KG7W                 | 100                          |                   |                              |                                      |                               |  |                                     |
| 0002                | 54M0G7W                 | 54000                        |                   |                              |                                      |                               |  |                                     |
| 0003                | 36M0G7W                 | 36000                        |                   |                              |                                      |                               |  |                                     |
| 0004                | 750KG7W                 | 750                          |                   |                              |                                      |                               |  |                                     |
| 0005                | 9M0G7W                  | 9000                         |                   |                              |                                      |                               |  |                                     |
| 0006                | 2M0G7W                  | 2000                         |                   |                              |                                      |                               |  |                                     |





**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<br>(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 <sup>2</sup> /Hz) |
|   |       |                         |                        |                              |                           | (j) Min.                               | (k) Max.                             |   | (l) Min.                            | (m) Max.                           |            |  |  |
| K0011   | K0504 | 0001                    |                        |                              |                           |  |                                      |   |                                     |                                    | 18.6       |  |  |
| K0011   | K0504 | 0002                    |                        |                              |                           |  |                                      |   |                                     |                                    | 50.8       |  |  |
| K0011   | K0504 | 0003                    |                        |                              |                           |  |                                      |   |                                     |                                    | 51         |  |  |
| K0011   | K0504 | 0004                    |                        |                              |                           |  |                                      |   |                                     |                                    | 22.8       |  |  |
| K0011   | K0504 | 0005                    |                        |                              |                           |  |                                      |   |                                     |                                    | 40.1       |  |  |
| K0011   | K0504 | 0006                    |                        |                              |                           |  |                                      |   |                                     |                                    | 25.4       |  |  |
| TC011   | TC032 |                         | 0007                   |                              |                           |  |                                      |   |                                     |                                    |            |  |  |
| TM011   | TM041 |                         | 0008                   |                              |                           |  |                                      |   |                                     |                                    | 14.1       |  |  |

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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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Characteristics and  
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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

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 |
| <b>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.</b> |                                     |     |                          |    |                                     |     |

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