

## NTIA Space record data form

NTIA requires the following data for space related experiments using government shared spectrum. For each transmit frequency, please provide the data for both ends of the transmit-receive link. Use Part A to describe the satellite to ground information. Part B is for all ground to space transmit links.

### Part A: Space to Earth Downlink Data

#### Satellite Transmitter Data

| Transmit Frequency:<br><span style="color: blue;">437.025</span> |                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| Satellite Name:<br><span style="color: blue;">LightSail 2</span> |                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Data Field                                                       | Data Answer                                                                                                                                                                                                                                                                                                                                                                                                                               | Description/Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Polarization (XAP)                                               | XAP = <span style="color: blue;">J</span>                                                                                                                                                                                                                                                                                                                                                                                                 | POLARIZATIONS INCLUDE :<br>H = HORIZONTAL,<br>V = VERTICAL,<br>S = HORIZONTAL AND VERTICAL,<br>L = LEFT HAND CIRCULAR,<br>R = RIGHT HAND CIRCULAR,<br>T = RIGHT AND LEFT HAND CIRCULAR,<br>J = LINEAR POLARIZATION                                                                                                                                                                                                                                                                    |
| Orientation (XAZ)                                                | XAZ = <span style="color: blue;">EC</span>                                                                                                                                                                                                                                                                                                                                                                                                | NB= NARROWBEAM<br>EC = EARTH COVERAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Antenna Dimension (XAD)                                          | ANTENNA GAIN <span style="color: blue;">2.20</span><br>BEAMWIDTH <span style="color: blue;">360</span><br>XAD =                                                                                                                                                                                                                                                                                                                           | (NTIA format (XAD), EXAMPLE, XAD01 16G030B)                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Type of satellite (State = SP)<br>(City = geo or non)            | Type = <span style="color: blue;">non</span>                                                                                                                                                                                                                                                                                                                                                                                              | Choose either:<br>Geostationary or<br>Nongeostationary                                                                                                                                                                                                                                                                                                                                                                                                                                |
| For Geostationary                                                | Longitude =                                                                                                                                                                                                                                                                                                                                                                                                                               | IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).                                                                                                                                                                                                                                                                                                                                                       |
| For Nongeostationary (Orbital Data)                              | INCLINATION ANGLE <span style="color: blue;">24</span> ,<br>APOGEE IN KILOMETERS <span style="color: blue;">720</span> ,<br>PERIGEE IN KILOMETERS <span style="color: blue;">720</span> ,<br>ORBITAL PERIOD IN HOURS <span style="color: blue;">1</span> AND<br>FRACTIONS OF HOURS IN<br>DECIMAL <span style="color: blue;">0.65</span> ,<br>THE NUMBER OF SATELLITES IN THE<br>SYSTEM <span style="color: blue;">1</span> ,<br><br>ORB = | IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04<br>*ORB,98.0IN00510AP00510PE001.58H01NRT01,<br>AND FOR SPACE-TO-SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL<br>*ORB FOR IT ENDING IN R01, EXAMPLE, REM05<br>*ORB,72.9IN03209AP00655PE013.46H01NRR01 |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| Earth Station Data (Receiver)                                           |                                                                                                                                                                                           |                                                                                                                                                                                                                    |
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| State (RSC)                                                             | RSC = CA                                                                                                                                                                                  |                                                                                                                                                                                                                    |
| City Name (RAL)                                                         | RAL = San Luis Obispo                                                                                                                                                                     |                                                                                                                                                                                                                    |
| Latitude (DDMMSS)                                                       | Lat = 351808N                                                                                                                                                                             |                                                                                                                                                                                                                    |
| Longitude (DDDMMSS)                                                     | Lon = 1203955W                                                                                                                                                                            |                                                                                                                                                                                                                    |
| Antenna Polarization (RAP)                                              | RAP = R                                                                                                                                                                                   | POLARIZATIONS INCLUDE :<br>H = HORIZONTAL,<br>V = VERTICAL,<br>S = HORIZONTAL AND VERTICAL,<br>L = LEFT HAND CIRCULAR,<br>R = RIGHT HAND CIRCULAR,<br>T = RIGHT AND LEFT HAND CIRCULAR,<br>J = LINEAR POLARIZATION |
| Antenna Azimuth (RAZ)                                                   | RAZ =<br>Azimuth range 0-360<br>Elevation range 0-90                                                                                                                                      | THE EARTH STATION RECEIVER ANTENNA<br>AZIMUTH (RAZ), THE MINIMUM ANGLE OF<br>ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00                                                                                             |
| Antenna Dimensions (RAD)                                                | ANTENNA GAIN 18.9 ,<br>BEAMWIDTH 21° ,<br>AZIMUTHAL RANGE 0-360 ,<br>THE SITE ELEVATION ABOVE MEAN SEA<br>LEVEL IN METERS 100<br>THE ANTENNA HEIGHT ABOVE TERRAIN<br>IN METERS 3<br>RAD = | EXAMPLE ASSUMING NONGEOSTATIONARY,<br>RAD01 16G030B000-360A00357H006                                                                                                                                               |
| FCC notes:<br>1. Use S-Note S945.<br>2. REM AGN, Cubesat, (insert name) |                                                                                                                                                                                           |                                                                                                                                                                                                                    |

## Part B: Ground Stations, Earth to Space link data:

### Earth Station Transmitter Data

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| Transmit Frequency: <a href="#">ALL DATA IN SECTION B IS IDENTICAL TO SECTION A</a> |                                                                                                                                                                                           |                                                                                                                                                                                                                    |
| State (XSC)                                                                         | XSC =                                                                                                                                                                                     |                                                                                                                                                                                                                    |
| City Name (XAL)                                                                     | XAL =                                                                                                                                                                                     |                                                                                                                                                                                                                    |
| Latitude (DDMMSS)                                                                   | Lat =                                                                                                                                                                                     |                                                                                                                                                                                                                    |
| Longitude (DDMMSS)                                                                  | Lon =                                                                                                                                                                                     |                                                                                                                                                                                                                    |
| Antenna Polarization (XAP)                                                          | XAP =                                                                                                                                                                                     | POLARIZATIONS INCLUDE :<br>H = HORIZONTAL,<br>V = VERTICAL,<br>S = HORIZONTAL AND VERTICAL,<br>L = LEFT HAND CIRCULAR,<br>R = RIGHT HAND CIRCULAR,<br>T = RIGHT AND LEFT HAND CIRCULAR,<br>J = LINEAR POLARIZATION |
| Antenna Azimuth (XAZ)                                                               | XAZ =                                                                                                                                                                                     | THE EARTH STATION Transmitter ANTENNA AZIMUTH (XAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, XAZ01 V00                                                                                                |
| Antenna Dimensions (XAD)                                                            | ANTENNA GAIN _____,<br>BEAMWIDTH _____,<br>AZIMUTHAL RANGE _____,<br>THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS _____<br>THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS _____<br>XAD = | EXAMPLE ASSUMING NONGEOSTATIONARY, XAD01 16G030B000-360A00357H006                                                                                                                                                  |
| <b>Satellite Receive Specifications</b>                                             |                                                                                                                                                                                           |                                                                                                                                                                                                                    |
| Polarization (RAP)                                                                  | RAP =                                                                                                                                                                                     | POLARIZATIONS INCLUDE :<br>H = HORIZONTAL,<br>V = VERTICAL,<br>S = HORIZONTAL AND VERTICAL,<br>L = LEFT HAND CIRCULAR,<br>R = RIGHT HAND CIRCULAR,<br>T = RIGHT AND LEFT HAND CIRCULAR,<br>J = LINEAR POLARIZATION |
| Azimuth (RAZ)                                                                       | RAZ =                                                                                                                                                                                     | STATION RECEIVER ANTENNA AZIMUTH (XAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00                                                                                                             |
| Dimension (RAD)                                                                     | ANTENNA GAIN _____<br>BEAMWIDTH _____<br>RAD =                                                                                                                                            | (NTIA format (RAD), EXAMPLE, RAD01 16G030B)                                                                                                                                                                        |
| Type of satellite (State = SP)<br>City = G/No                                       | Type =                                                                                                                                                                                    | Choose either:<br>Geostationary or<br>Nongeostationary                                                                                                                                                             |

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| For Geostationary                   | Longitude =                                                                                                                                                                                                                 | IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).                                                                                                                                                                                                                                                                                                                                                       |
| For Nongeostationary (Orbital Data) | INCLINATION ANGLE _____,<br>APOGEE IN KILOMETERS _____,<br>PERIGEE IN KILOMETERS _____,<br>ORBITAL PERIOD IN HOURS _____ AND<br>FRACTIONS OF HOURS IN<br>DECIMAL _____,<br>THE NUMBER OF SATELLITES IN THE<br>SYSTEM _____, | IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04<br>*ORB,98.0IN00510AP00510PE001.58H01NRT01,<br>AND FOR SPACE-TO-SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL<br>*ORB FOR IT ENDING IN R01, EXAMPLE, REM05<br>*ORB,72.9IN03209AP00655PE013.46H01NRR01 |
|                                     |                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |