



312 File Number: **SATLOA2023030100044**

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## Filing Description

| Question    | Response                                                                                                                                                                                                                                               |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Launcher requests authority to launch and operate one NGSO space station for in-space delivery of third-party payloads using the 2025-2110 MHz Earth-to-space and 2200-2290 MHz space-to-Earth space operation and space research service frequencies. |

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Satellite  
Information

| Question                                                     | Response    |
|--------------------------------------------------------------|-------------|
| Select Orbit Type                                            | NGSO        |
| Space Station or Satellite Network Name                      | Orbiter SN3 |
| Estimated Lifetime of Satellite(s) From Date of Launch       | 2 Years     |
| Will the space station(s) operate on a Common Carrier basis? | No          |

Operating  
Frequency  
Bands (2)

| Nature of service       | Description | Frequency Band(s)      | Mode Type |
|-------------------------|-------------|------------------------|-----------|
| Space Operation Service |             | 2025.0 MHz -2110.0 MHz | Receive   |
| Space Operation Service |             | 2200.0 MHz -2290.0 MHz | Transmit  |

**Orbital  
Information For  
Non-  
Geostationary  
Satellites**

| Question                                               | Response   |
|--------------------------------------------------------|------------|
| Total Number of Satellites in the active constellation | 1          |
| Orbit Epoch Date                                       | 06/10/2023 |
| Celestial Reference Body                               | Earth      |

**Orbital Plane 1:**

| Question                                                      | Response       |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 1              |
| Inclination Angle                                             | 97.0 degrees   |
| Right Ascension of Ascending Node                             | 274.0 degrees  |
| Argument of Perigee                                           | 336.0 degrees  |
| Orbital Period                                                | 5700.0 seconds |
| Apogee                                                        | 525.0 km       |
| Perigee                                                       | 525.0 km       |
| Active Service Arc Begin Angle with respect to Ascending Node | -90.0 degrees  |
| Active Service Arc End Angle with respect to Ascending Node   | 90.0 degrees   |

**Mean Anomaly For Each Satellite**

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 16.0                                           |

Receiving  
Beams 1:

| Question                                                | Response               |
|---------------------------------------------------------|------------------------|
| Beam ID                                                 | Up1                    |
| Receive Beam Frequency                                  | 2025.0 MHz -2110.0 MHz |
| Beam Type                                               | Fixed                  |
| Polarization                                            | RHCP                   |
| Peak Gain                                               | 33.0 dBi               |
| Antenna Pointing Error                                  | 0.5 degrees            |
| Antenna Rotational Error                                | 0.5 degrees            |
| Polarization Switchable                                 |                        |
| Polarization Alignment Relative to the Equatorial Plane | 45.0 degrees           |
| G/T at Max. Gain Point                                  | 12.8 dB/K              |
| Min. Saturation Flux Density                            | -44.3 dBW/m2           |
| Max. Saturation Flux Density                            | -30.0 dBW/m2           |
| Co- or Cross Polar Mode                                 | C                      |
| Service Area Description                                | Global                 |

Receiving  
Channels (1)

| Channel ID | Channel Bandwidth (MHz) | Center Frequency s (MHz) | Feeder Link, Service Link or TT&C |
|------------|-------------------------|--------------------------|-----------------------------------|
| Up1        | 0.27                    | 2067.5                   | TT&C                              |

Transmitting  
Beams 1:

| Question                                                | Response               |
|---------------------------------------------------------|------------------------|
| Beam ID                                                 | Dwn1                   |
| Transmit Beam Frequency                                 | 2200.0 MHz -2290.0 MHz |
| Beam Type                                               | Fixed                  |
| Polarization                                            | RHCP                   |
| Peak Gain                                               | 3.0 dBi                |
| Antenna Pointing Error                                  | 0.68 degrees           |
| Antenna Rotational Error                                | 0.68 degrees           |
| Polarization Switchable                                 |                        |
| Polarization Alignment Relative to the Equatorial Plane | 45.0 degrees           |
| Max. Transmit EIRP Density                              | -52.9 dBW/Hz           |
| Max. Transmit EIRP                                      | 6.0 dBW                |
| Co- or Cross Polar Mode                                 | C                      |
| Service Area Description                                | Global                 |

Max. Power Flux Density

|                             | * 0° - 5°                 | * 5° - 10°                | * 10° - 15°               | * 15° - 20°               | * 20° - 25°               | * 25° - 90°               |
|-----------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| * (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): |
| 4.0 kHz                     | -161.5                    | -160.0                    | -158.0                    | -156.6                    | -156.0                    | -150.0                    |

Transmitting  
Beams 2:

| Question                | Response               |
|-------------------------|------------------------|
| Beam ID                 | Dwn2                   |
| Transmit Beam Frequency | 2200.0 MHz -2290.0 MHz |

|                                                         |              |
|---------------------------------------------------------|--------------|
| Beam Type                                               | Fixed        |
| Polarization                                            | RHCP         |
| Peak Gain                                               | 10.0 dBi     |
| Antenna Pointing Error                                  | 0.68 degrees |
| Antenna Rotational Error                                | 0.68 degrees |
| Polarization Switchable                                 |              |
| Polarization Alignment Relative to the Equatorial Plane | 45.0 degrees |
| Max. Transmit EIRP Density                              | -52.9 dBW/Hz |
| Max. Transmit EIRP                                      | 13.0 dBW     |
| Co- or Cross Polar Mode                                 | C            |
| Service Area Description                                | Global       |

**Max. Power Flux Density**

|                             | * 0° - 5°                 | * 5° - 10°                | * 10° - 15°               | * 15° - 20°               | * 20° - 25°               | * 25° - 90°               |
|-----------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| * (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): |
| 4.0 kHz                     | -156.7                    | -155.0                    | -154.0                    | -153.3                    | -151.5                    | -145.0                    |

**Transmitting Beams 3:**

| Question                | Response               |
|-------------------------|------------------------|
| Beam ID                 | Dwn3                   |
| Transmit Beam Frequency | 2200.0 MHz -2290.0 MHz |
| Beam Type               | Fixed                  |
| Polarization            | RHCP                   |
| Peak Gain               | 7.0 dBi                |
| Antenna Pointing Error  | 0.68 degrees           |

|                                                         |              |
|---------------------------------------------------------|--------------|
| Antenna Rotational Error                                | 0.68 degrees |
| Polarization Switchable                                 |              |
| Polarization Alignment Relative to the Equatorial Plane | 45.0 degrees |
| Max. Transmit EIRP Density                              | -48.9 dBW/Hz |
| Max. Transmit EIRP                                      | 10.0 dBW     |
| Co- or Cross Polar Mode                                 | C            |
| Service Area Description                                | Global       |

Max. Power Flux Density

|                             | * 0° - 5°                 | * 5° - 10°                | * 10° - 15°               | * 15° - 20°               | * 20° - 25°               | * 25° - 90°               |
|-----------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| * (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): | (dBW/m <sup>2</sup> /BW): |
| 4.0 kHz                     | -161.5                    | -160.0                    | -158.0                    | -156.6                    | -156.0                    | -150.0                    |

Transmitting  
Channels (3)

| Channel ID | Channel Bandwidth (MHz) | Center Frequency s (MHz) | Feeder Link, Service Link or TT&C |
|------------|-------------------------|--------------------------|-----------------------------------|
| Dwn1       | 0.78                    | 2245.0                   | TT&C                              |
| Dwn2       | 3.9                     | 2245.0                   | TT&C                              |
| Dwn3       | 0.78                    | 2245.0                   | TT&C                              |

## Certification Questions

| Question                                                                                                                                                                                  | Response |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Are the applicable service area coverage requirements of 25.143(b)(2) (ii) and (iii), or 25.144(a)(3)(i), or 25.145 (c)(1) and (2), or 25.146(i)(1) and (2), or 25.148(c), or 25.225 met? | N/A      |
| Are the applicable frequency tolerances of 25.202(e) and out-of-band emission limits of 25.202(f)(1),(2), and (3) met?                                                                    | Yes      |
| Are the cessation of emissions requirements of 25.207 met?                                                                                                                                | Yes      |
| Are the applicable power-flux-density limits of 25.208 met, and is the appropriate technical showing provided within the application?                                                     |          |
| For NGSO applications, are the applicable equivalent-power-flux-density limits of 25.208 met, and is the appropriate technical showing provided within the application?                   | N/A      |
| Are the applicable full-frequency-reuse requirements of 25.210 met?                                                                                                                       |          |
| If the application is for a 17/24 GHz BSS space station, will it be operated at an offset location with full power and interference protection in accordance with 25.262(b)?              |          |

**Attachments**

Information not provided.