



312 File Number: **SATMOD2025031300070**

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## Filing Description

| Question    | Response                                     |
|-------------|----------------------------------------------|
| Description | Tomorrow.io Weather Monitoring Constellation |

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**Satellite  
Information**

| Question                                                     | Response    |
|--------------------------------------------------------------|-------------|
| Select Orbit Type                                            | NGSO        |
| Space Station or Satellite Network Name                      | Tomorrow.io |
| Estimated Lifetime of Satellite(s) From Date of Launch       | 5 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 |
|-------------------------------------|-------------|---------------------------|-----------|
| Earth Exploration-Satellite Service |             | 8025.0 MHz<br>-8400.0 MHz | Transmit  |
| Earth Exploration-Satellite Service |             | 2025.0 MHz<br>-2110.0 MHz | Receive   |

**Orbital  
Information For  
Non-  
Geostationary  
Satellites**

| Question                                               | Response   |
|--------------------------------------------------------|------------|
| Total Number of Satellites in the active constellation | 18         |
| Orbit Epoch Date                                       | 01/01/2025 |
| Celestial Reference Body                               | Earth      |

## Orbital Plane 1:

| Question                                                      | Response       |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 2              |
| Inclination Angle                                             | 97.6 degrees   |
| Right Ascension of Ascending Node                             | 80.1 degrees   |
| Argument of Perigee                                           | 0.0 degrees    |
| Orbital Period                                                | 5739.0 seconds |
| Apogee                                                        | 550.0 km       |
| Perigee                                                       | 550.0 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                | 0.0                                            |
| 2                | 180.0                                          |

## Orbital Plane 2:

| Question                                                      | Response       |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 2              |
| Inclination Angle                                             | 97.4 degrees   |
| Right Ascension of Ascending Node                             | 258.9 degrees  |
| Argument of Perigee                                           | 0.0 degrees    |
| Orbital Period                                                | 5739.0 seconds |
| Apogee                                                        | 550.0 km       |
| Perigee                                                       | 550.0 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                | 180.0                                          |
| 2                | 0.0                                            |

Orbital Plane 3:

| Question                                                      | Response       |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 2              |
| Inclination Angle                                             | 44.9 degrees   |
| Right Ascension of Ascending Node                             | 304.1 degrees  |
| Argument of Perigee                                           | 0.0 degrees    |
| Orbital Period                                                | 5739.0 seconds |
| Apogee                                                        | 550.0 km       |
| Perigee                                                       | 550.0 km       |
| Active Service Arc Begin Angle with respect to Ascending Node | -44.9 degrees  |
| Active Service Arc End Angle with respect to Ascending Node   | 44.9 degrees   |

Mean Anomaly For Each Satellite

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 0.0                                            |
| 2                | 180.0                                          |

Orbital Plane 4:

| Question                          | Response      |
|-----------------------------------|---------------|
| Number of Satellites in Plane     | 2             |
| Inclination Angle                 | 45.0 degrees  |
| Right Ascension of Ascending Node | 172.9 degrees |

|                                                               |                |
|---------------------------------------------------------------|----------------|
| Argument of Perigee                                           | 0.0 degrees    |
| Orbital Period                                                | 5739.0 seconds |
| Apogee                                                        | 550.0 km       |
| Perigee                                                       | 550.0 km       |
| Active Service Arc Begin Angle with respect to Ascending Node | -45.0 degrees  |
| Active Service Arc End Angle with respect to Ascending Node   | 45.0 degrees   |

### Mean Anomaly For Each Satellite

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 180.0                                          |
| 2                | 0.0                                            |

## Orbital Plane 5:

| Question                                                      | Response       |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 2              |
| Inclination Angle                                             | 45.0 degrees   |
| Right Ascension of Ascending Node                             | 50.0 degrees   |
| Argument of Perigee                                           | 0.0 degrees    |
| Orbital Period                                                | 5739.0 seconds |
| Apogee                                                        | 550.0 km       |
| Perigee                                                       | 550.0 km       |
| Active Service Arc Begin Angle with respect to Ascending Node | -45.0 degrees  |
| Active Service Arc End Angle with respect to Ascending Node   | 45.0 degrees   |

### Mean Anomaly For Each Satellite

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 0.0                                            |

|   |       |
|---|-------|
| 2 | 180.0 |
|---|-------|

## Orbital Plane 6:

| Question                                                      | Response       |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 2              |
| Inclination Angle                                             | 97.5 degrees   |
| Right Ascension of Ascending Node                             | 355.6 degrees  |
| Argument of Perigee                                           | 0.0 degrees    |
| Orbital Period                                                | 5739.0 seconds |
| Apogee                                                        | 550.0 km       |
| Perigee                                                       | 550.0 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                | 180.0                                          |
| 2                | 0.0                                            |

## Orbital Plane 7:

| Question                          | Response       |
|-----------------------------------|----------------|
| Number of Satellites in Plane     | 2              |
| Inclination Angle                 | 97.6 degrees   |
| Right Ascension of Ascending Node | 170.0 degrees  |
| Argument of Perigee               | 0.0 degrees    |
| Orbital Period                    | 5739.0 seconds |
| Apogee                            | 550.0 km       |
| Perigee                           | 550.0 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                | 0.0                                            |
| 2                | 180.0                                          |

### Orbital Plane 8:

| Question                                                      | Response       |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 2              |
| Inclination Angle                                             | 88.0 degrees   |
| Right Ascension of Ascending Node                             | 180.0 degrees  |
| Argument of Perigee                                           | 0.0 degrees    |
| Orbital Period                                                | 5739.0 seconds |
| Apogee                                                        | 550.0 km       |
| Perigee                                                       | 550.0 km       |
| Active Service Arc Begin Angle with respect to Ascending Node | -88.0 degrees  |
| Active Service Arc End Angle with respect to Ascending Node   | 88.0 degrees   |

### Mean Anomaly For Each Satellite

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 0.0                                            |
| 2                | 180.0                                          |

### Orbital Plane 9:

| Question                      | Response |
|-------------------------------|----------|
| Number of Satellites in Plane | 2        |

|                                                               |                |
|---------------------------------------------------------------|----------------|
| Inclination Angle                                             | 88.0 degrees   |
| Right Ascension of Ascending Node                             | 0.0 degrees    |
| Argument of Perigee                                           | 0.0 degrees    |
| Orbital Period                                                | 5739.0 seconds |
| Apogee                                                        | 550.0 km       |
| Perigee                                                       | 550.0 km       |
| Active Service Arc Begin Angle with respect to Ascending Node | -88.0 degrees  |
| Active Service Arc End Angle with respect to Ascending Node   | 88.0 degrees   |

**Mean Anomaly For Each Satellite**

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 180.0                                          |
| 2                | 0.0                                            |

Receiving  
Beams 1:

| Question                                                | Response               |
|---------------------------------------------------------|------------------------|
| Beam ID                                                 | SRX                    |
| Receive Beam Frequency                                  | 2025.0 MHz -2110.0 MHz |
| Beam Type                                               | Steerable              |
| Polarization                                            | RHCP                   |
| Peak Gain                                               | 5.6 dBi                |
| Antenna Pointing Error                                  | 0.0 degrees            |
| Antenna Rotational Error                                | 0.0 degrees            |
| Polarization Switchable                                 |                        |
| Polarization Alignment Relative to the Equatorial Plane | 45.0 degrees           |
| G/T at Max. Gain Point                                  | -26.5 dB/K             |
| Min. Saturation Flux Density                            | -114.8 dBW/m2          |
| Max. Saturation Flux Density                            | -81.0 dBW/m2           |
| Co- or Cross Polar Mode                                 | X                      |
| Service Area Description                                | Visible Earth          |

Receiving  
Channels (32)

| Channel ID | Channel Bandwidth (MHz) | Center Frequency s (MHz) | Feeder Link, Service Link or TT&C |
|------------|-------------------------|--------------------------|-----------------------------------|
| SU12       | 0.2                     | 2054.875                 | Service Link                      |
| SU1        | 0.2                     | 2052.125                 | Service Link                      |
| SU32       | 0.01                    | 2055.875                 | Service Link                      |
| SU31       | 0.01                    | 2055.625                 | Service Link                      |
| SU30       | 0.01                    | 2055.375                 | Service Link                      |
| SU29       | 0.01                    | 2055.125                 | Service Link                      |
| SU28       | 0.01                    | 2054.875                 | Service Link                      |
| SU27       | 0.01                    | 2054.625                 | Service Link                      |
| SU6        | 0.2                     | 2053.375                 | Service Link                      |
| SU7        | 0.2                     | 2053.625                 | Service Link                      |
| SU9        | 0.2                     | 2054.125                 | Service Link                      |
| SU11       | 0.2                     | 2054.625                 | Service Link                      |
| SU10       | 0.2                     | 2054.375                 | Service Link                      |
| SU5        | 0.2                     | 2053.125                 | Service Link                      |
| SU4        | 0.2                     | 2052.875                 | Service Link                      |
| SU3        | 0.2                     | 2052.625                 | Service Link                      |
| SU2        | 0.2                     | 2052.375                 | Service Link                      |
| SU8        | 0.2                     | 2053.875                 | Service Link                      |
| SU13       | 0.2                     | 2055.125                 | Service Link                      |
| SU14       | 0.2                     | 2055.375                 | Service Link                      |
| SU16       | 0.2                     | 2055.875                 | Service Link                      |
| SU15       | 0.2                     | 2055.625                 | Service Link                      |
| SU17       | 0.01                    | 2052.125                 | Service Link                      |
| SU18       | 0.01                    | 2052.375                 | Service Link                      |

|             |      |          |                              |
|-------------|------|----------|------------------------------|
| <b>SU19</b> | 0.01 | 2052.625 | <a href="#">Service Link</a> |
| <b>SU20</b> | 0.01 | 2052.875 | <a href="#">Service Link</a> |
| <b>SU21</b> | 0.01 | 2053.125 | <a href="#">Service Link</a> |
| <b>SU22</b> | 0.01 | 2053.375 | <a href="#">Service Link</a> |
| <b>SU23</b> | 0.01 | 2053.625 | <a href="#">Service Link</a> |
| <b>SU24</b> | 0.01 | 2053.875 | <a href="#">Service Link</a> |
| <b>SU26</b> | 0.01 | 2054.375 | <a href="#">Service Link</a> |
| <b>SU25</b> | 0.01 | 2054.125 | <a href="#">Service Link</a> |

Transmitting  
Beams 1:

| Question                                                | Response               |
|---------------------------------------------------------|------------------------|
| Beam ID                                                 | XTX                    |
| Transmit Beam Frequency                                 | 8025.0 MHz -8400.0 MHz |
| Beam Type                                               | Steerable              |
| Polarization                                            | RHCP                   |
| Peak Gain                                               | 6.0 dBi                |
| Antenna Pointing Error                                  | 0.0 degrees            |
| Antenna Rotational Error                                | 0.0 degrees            |
| Polarization Switchable                                 |                        |
| Polarization Alignment Relative to the Equatorial Plane | 45.0 degrees           |
| Max. Transmit EIRP Density                              | -57.0 dBW/Hz           |
| Max. Transmit EIRP                                      | 9.0 dBW                |
| Co- or Cross Polar Mode                                 | X                      |
| Service Area Description                                | Visible Earth          |

Max. Power Flux Density

|         | * 0° - 5°           | * 5° - 10°          | * 10° - 15°         | * 15° - 20°         | * 20° - 25°         | * 25° - 90°         |
|---------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|         | (dBW/m <sup>2</sup> | (dBW/m <sup>2</sup> | (dBW/m <sup>2</sup> | (dBW/m <sup>2</sup> | (dBW/m <sup>2</sup> | (dBW/m <sup>2</sup> |
| * BW:   | /BW):               | /BW):               | /BW):               | /BW):               | /BW):               | /BW):               |
| 4.0 kHz | -159.4              | -157.6              | -156.0              | -154.6              | -153.3              | -147.0              |

**Transmitting  
Channels (4)**

| Channel ID | Channel Bandwidth (MHz) | Center Frequency s (MHz) | Feeder Link, Service Link or TT&C |
|------------|-------------------------|--------------------------|-----------------------------------|
| XD12       | 8.0                     | 8080.0                   | Service Link                      |
| XD22       | 0.8                     | 8080.0                   | Service Link                      |
| XD21       | 0.8                     | 8030.0                   | Service Link                      |
| XD11       | 8.0                     | 8030.0                   | Service Link                      |

## 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

| File Name                                            | Beam | Field                     | Attachment Type       | Description |
|------------------------------------------------------|------|---------------------------|-----------------------|-------------|
| <a href="#"><u>Tomorrow-1 GIMS<br/>FCC -.mdb</u></a> |      | NGSO Antenna<br>Gain Data | GIMS file (*.<br>mdb) |             |