



312 File Number: **SESMOD2017011200029**

---

## Filing Description

| Question    | Response                                                                                                                                                     |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Globalstar notifies the Commission of orbital adjustments to the non-geostationary mobile satellite service space stations in its Big LEO MSS constellation. |

---

Satellite  
Information

| Question                                                     | Response   |
|--------------------------------------------------------------|------------|
| Select Orbit Type                                            | NGSO       |
| Space Station or Satellite Network Name                      | GLOBALSTAR |
| Estimated Lifetime of Satellite(s) From Date of Launch       | 15 Years   |
| Will the space station(s) operate on a Common Carrier basis? | No         |

**Operating  
Frequency  
Bands (4)**

| Nature of service                        | Description                | Frequency Band (s)          | Mode Type |
|------------------------------------------|----------------------------|-----------------------------|-----------|
| Mobile-Satellite Service                 |                            | 2483.5 MHz<br>-2500.0 MHz   | Transmit  |
| Other Satellite Service (please specify) | Feeder Link to support MSS | 5091.0 MHz<br>-5250.0 MHz   | Receive   |
| Other Satellite Service (please specify) | Feeder Link to support MSS | 6875.0 MHz<br>-7055.0 MHz   | Transmit  |
| Mobile-Satellite Service                 |                            | 1610.0 MHz<br>-1618.725 MHz | Receive   |

**Orbital  
Information For  
Non-  
Geostationary  
Satellites**

| Question                                               | Response   |
|--------------------------------------------------------|------------|
| Total Number of Satellites in the active constellation | 24         |
| Orbit Epoch Date                                       | 01/22/2017 |
| Celestial Reference Body                               | Earth      |

## Orbital Plane 1:

| Question                                                      | Response       |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 3              |
| Inclination Angle                                             | 52.0 degrees   |
| Right Ascension of Ascending Node                             | 0.0 degrees    |
| Argument of Perigee                                           | 90.0 degrees   |
| Orbital Period                                                | 6840.0 seconds |
| Apogee                                                        | 1414.0 km      |
| Perigee                                                       | 1414.0 km      |
| Active Service Arc Begin Angle with respect to Ascending Node | 0.0 degrees    |
| Active Service Arc End Angle with respect to Ascending Node   | 360.0 degrees  |

### Mean Anomaly For Each Satellite

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 30.0                                           |
| 2                | 270.0                                          |
| 3                | 150.0                                          |

## Orbital Plane 2:

| Question                                                      | Response       |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 3              |
| Inclination Angle                                             | 52.0 degrees   |
| Right Ascension of Ascending Node                             | 45.0 degrees   |
| Argument of Perigee                                           | 90.0 degrees   |
| Orbital Period                                                | 6840.0 seconds |
| Apogee                                                        | 1414.0 km      |
| Perigee                                                       | 1414.0 km      |
| Active Service Arc Begin Angle with respect to Ascending Node | 0.0 degrees    |

|                                                             |               |
|-------------------------------------------------------------|---------------|
| Active Service Arc End Angle with respect to Ascending Node | 360.0 degrees |
|-------------------------------------------------------------|---------------|

### Mean Anomaly For Each Satellite

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 210.0                                          |
| 2                | 90.0                                           |
| 3                | 330.0                                          |

### Orbital Plane 3:

| Question                                                      | Response       |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 3              |
| Inclination Angle                                             | 52.0 degrees   |
| Right Ascension of Ascending Node                             | 90.0 degrees   |
| Argument of Perigee                                           | 90.0 degrees   |
| Orbital Period                                                | 6840.0 seconds |
| Apogee                                                        | 1414.0 km      |
| Perigee                                                       | 1414.0 km      |
| Active Service Arc Begin Angle with respect to Ascending Node | 0.0 degrees    |
| Active Service Arc End Angle with respect to Ascending Node   | 360.0 degrees  |

### Mean Anomaly For Each Satellite

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 270.0                                          |
| 2                | 150.0                                          |
| 3                | 30.0                                           |

### Orbital Plane 4:

| Question | Response |
|----------|----------|
|----------|----------|

|                                                               |                |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 3              |
| Inclination Angle                                             | 52.0 degrees   |
| Right Ascension of Ascending Node                             | 135.0 degrees  |
| Argument of Perigee                                           | 90.0 degrees   |
| Orbital Period                                                | 6840.0 seconds |
| Apogee                                                        | 1414.0 km      |
| Perigee                                                       | 1414.0 km      |
| Active Service Arc Begin Angle with respect to Ascending Node | 0.0 degrees    |
| Active Service Arc End Angle with respect to Ascending Node   | 360.0 degrees  |

### Mean Anomaly For Each Satellite

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 90.0                                           |
| 2                | 330.0                                          |
| 3                | 210.0                                          |

### Orbital Plane 5:

| Question                                                      | Response       |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 3              |
| Inclination Angle                                             | 52.0 degrees   |
| Right Ascension of Ascending Node                             | 180.0 degrees  |
| Argument of Perigee                                           | 90.0 degrees   |
| Orbital Period                                                | 6840.0 seconds |
| Apogee                                                        | 1414.0 km      |
| Perigee                                                       | 1414.0 km      |
| Active Service Arc Begin Angle with respect to Ascending Node | 0.0 degrees    |
| Active Service Arc End Angle with respect to Ascending Node   | 360.0 degrees  |

Mean Anomaly For Each Satellite

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 270.0                                          |
| 2                | 150.0                                          |
| 3                | 30.0                                           |

Orbital Plane 6:

| Question                                                      | Response       |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 3              |
| Inclination Angle                                             | 52.0 degrees   |
| Right Ascension of Ascending Node                             | 225.0 degrees  |
| Argument of Perigee                                           | 90.0 degrees   |
| Orbital Period                                                | 6840.0 seconds |
| Apogee                                                        | 1414.0 km      |
| Perigee                                                       | 1414.0 km      |
| Active Service Arc Begin Angle with respect to Ascending Node | 0.0 degrees    |
| Active Service Arc End Angle with respect to Ascending Node   | 360.0 degrees  |

Mean Anomaly For Each Satellite

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 210.0                                          |
| 2                | 90.0                                           |
| 3                | 330.0                                          |

Orbital Plane 7:

| Question                      | Response     |
|-------------------------------|--------------|
| Number of Satellites in Plane | 3            |
| Inclination Angle             | 52.0 degrees |

|                                                               |                |
|---------------------------------------------------------------|----------------|
| Right Ascension of Ascending Node                             | 270.0 degrees  |
| Argument of Perigee                                           | 90.0 degrees   |
| Orbital Period                                                | 6840.0 seconds |
| Apogee                                                        | 1414.0 km      |
| Perigee                                                       | 1414.0 km      |
| Active Service Arc Begin Angle with respect to Ascending Node | 0.0 degrees    |
| Active Service Arc End Angle with respect to Ascending Node   | 360.0 degrees  |

### Mean Anomaly For Each Satellite

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 270.0                                          |
| 2                | 150.0                                          |
| 3                | 30.0                                           |

### Orbital Plane 8:

| Question                                                      | Response       |
|---------------------------------------------------------------|----------------|
| Number of Satellites in Plane                                 | 3              |
| Inclination Angle                                             | 52.0 degrees   |
| Right Ascension of Ascending Node                             | 315.0 degrees  |
| Argument of Perigee                                           | 90.0 degrees   |
| Orbital Period                                                | 6840.0 seconds |
| Apogee                                                        | 1414.0 km      |
| Perigee                                                       | 1414.0 km      |
| Active Service Arc Begin Angle with respect to Ascending Node | 0.0 degrees    |
| Active Service Arc End Angle with respect to Ascending Node   | 360.0 degrees  |

### Mean Anomaly For Each Satellite

| Satellite Number | Mean Anomaly (degrees) at the Orbit Epoch Date |
|------------------|------------------------------------------------|
| 1                | 90.0                                           |
| 2                | 330.0                                          |
| 3                | 210.0                                          |

## Receiving Beams 1:

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | L01                                           |
| Receive Beam Frequency                                  | 1610.0 MHz -1618.725 MHz                      |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                                  | -12.1 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 2:

| Question                 | Response                 |
|--------------------------|--------------------------|
| Beam ID                  | L02                      |
| Receive Beam Frequency   | 1610.0 MHz -1618.725 MHz |
| Beam Type                | Fixed                    |
| Polarization             | LHCP                     |
| Peak Gain                | dBi                      |
| Antenna Pointing Error   | 0.0 degrees              |
| Antenna Rotational Error | 0.0 degrees              |

### Receiving Beams 3:

|                                                         |                                               |
|---------------------------------------------------------|-----------------------------------------------|
| Polarization Switchable                                 |                                               |
| Polarization Alignment Relative to the Equatorial Plane | 45.0 degrees                                  |
| G/T at Max. Gain Point                                  | -7.07 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | L03                                           |
| Receive Beam Frequency                                  | 1610.0 MHz -1618.725 MHz                      |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                                  | -6.89 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 4:

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | L04                                           |
| Receive Beam Frequency                                  | 1610.0 MHz -1618.725 MHz                      |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                                  | -7.23 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 5:

| Question                 | Response                 |
|--------------------------|--------------------------|
| Beam ID                  | L05                      |
| Receive Beam Frequency   | 1610.0 MHz -1618.725 MHz |
| Beam Type                | Fixed                    |
| Polarization             | LHCP                     |
| Peak Gain                | 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                                  | -7.03 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 6:

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | L06                                           |
| Receive Beam Frequency                                  | 1610.0 MHz -1618.725 MHz                      |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                                  | -6.94 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 7:

| Question | Response |
|----------|----------|
|----------|----------|

|                                                         |                                               |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | L07                                           |
| Receive Beam Frequency                                  | 1610.0 MHz -1618.725 MHz                      |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                                  | -7.16 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 8:

| Question                                                | Response                 |
|---------------------------------------------------------|--------------------------|
| Beam ID                                                 | L08                      |
| Receive Beam Frequency                                  | 1610.0 MHz -1618.725 MHz |
| Beam Type                                               | Fixed                    |
| Polarization                                            | LHCP                     |
| Peak Gain                                               | 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       | -7.09 dB/K                                    |
| Min. Saturation Flux Density | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode      | X                                             |
| Service Area Description     | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 9:

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | L09                                           |
| Receive Beam Frequency                                  | 1610.0 MHz -1618.725 MHz                      |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                                  | -6.98 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 10:

| Question | Response |
|----------|----------|
| Beam ID  | L10      |

|                                                         |                                               |
|---------------------------------------------------------|-----------------------------------------------|
| Receive Beam Frequency                                  | 1610.0 MHz -1618.725 MHz                      |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                                  | -6.98 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 11:

| Question                                                | Response                 |
|---------------------------------------------------------|--------------------------|
| Beam ID                                                 | L11                      |
| Receive Beam Frequency                                  | 1610.0 MHz -1618.725 MHz |
| Beam Type                                               | Fixed                    |
| Polarization                                            | LHCP                     |
| Peak Gain                                               | 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                                  | -7.1 dB/K                |

|                              |                                               |
|------------------------------|-----------------------------------------------|
| Min. Saturation Flux Density | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode      | X                                             |
| Service Area Description     | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 12:

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | L12                                           |
| Receive Beam Frequency                                  | 1610.0 MHz -1618.725 MHz                      |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                                  | -7.16 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 13:

| Question               | Response                 |
|------------------------|--------------------------|
| Beam ID                | L13                      |
| Receive Beam Frequency | 1610.0 MHz -1618.725 MHz |

|                                                         |                                               |
|---------------------------------------------------------|-----------------------------------------------|
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                                  | -6.94 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 14:

| Question                                                | Response                 |
|---------------------------------------------------------|--------------------------|
| Beam ID                                                 | L14                      |
| Receive Beam Frequency                                  | 1610.0 MHz -1618.725 MHz |
| Beam Type                                               | Fixed                    |
| Polarization                                            | LHCP                     |
| Peak Gain                                               | 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                                  | -7.03 dB/K               |
| Min. Saturation Flux Density                            | -999.0 dBW/m2            |

|                              |                                               |
|------------------------------|-----------------------------------------------|
| Max. Saturation Flux Density | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode      | X                                             |
| Service Area Description     | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 15:

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | L15                                           |
| Receive Beam Frequency                                  | 1610.0 MHz -1618.725 MHz                      |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                                  | -7.23 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 16:

| Question               | Response                 |
|------------------------|--------------------------|
| Beam ID                | L16                      |
| Receive Beam Frequency | 1610.0 MHz -1618.725 MHz |
| Beam Type              | Fixed                    |

|                                                         |                                               |
|---------------------------------------------------------|-----------------------------------------------|
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                                  | -6.89 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.0 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

## Receiving Beams 17:

| Question                                                | Response               |
|---------------------------------------------------------|------------------------|
| Beam ID                                                 | C1LH                   |
| Receive Beam Frequency                                  | 5091.0 MHz -5250.0 MHz |
| Beam Type                                               | Fixed                  |
| Polarization                                            | LHCP                   |
| Peak Gain                                               | 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                                  | -20.6 dB/K             |
| Min. Saturation Flux Density                            | -999.0 dBW/m2          |
| Max. Saturation Flux Density                            | -151.2 dBW/m2          |

**Receiving  
Beams 18:**

| Co- or Cross Polar Mode                                 | X                                             |
|---------------------------------------------------------|-----------------------------------------------|
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |
|                                                         |                                               |
| Question                                                | Response                                      |
| Beam ID                                                 | C1RH                                          |
| Receive Beam Frequency                                  | 5091.0 MHz -5250.0 MHz                        |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | RHCP                                          |
| Peak Gain                                               | 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                                  | -20.6 dB/K                                    |
| Min. Saturation Flux Density                            | -999.0 dBW/m2                                 |
| Max. Saturation Flux Density                            | -151.2 dBW/m2                                 |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

## Receiving Channels (18)

| Channel ID  | Channel Bandwidth (MHz) | Center Frequency s (MHz) | Feeder Link, Service Link or TT&C |
|-------------|-------------------------|--------------------------|-----------------------------------|
| <b>CSY3</b> | 16.5                    | 5143.97                  | Feeder Link                       |
| <b>CSY4</b> | 16.5                    | 5163.35                  | Feeder Link                       |
| <b>CSX8</b> | 16.5                    | 5240.87                  | Feeder Link                       |
| <b>CSX7</b> | 16.5                    | 5221.49                  | Feeder Link                       |
| <b>CSY2</b> | 16.5                    | 5124.59                  | Feeder Link                       |
| <b>CSY1</b> | 16.5                    | 5105.21                  | Feeder Link                       |
| <b>CSY8</b> | 16.5                    | 5240.87                  | Feeder Link                       |
| <b>CSX4</b> | 16.5                    | 5163.35                  | Feeder Link                       |
| <b>CSY7</b> | 16.5                    | 5221.49                  | Feeder Link                       |
| <b>CSY6</b> | 16.5                    | 5201.11                  | Feeder Link                       |
| <b>CSY5</b> | 16.5                    | 5182.73                  | Feeder Link                       |
| <b>CSX2</b> | 16.5                    | 5124.59                  | Feeder Link                       |
| <b>CSX1</b> | 16.5                    | 5105.21                  | Feeder Link                       |
| <b>L</b>    | 8.725                   | 1614.3625                | Service Link                      |
| <b>CMD</b>  | 1.0                     | 5091.5                   | TT&C                              |
| <b>CSX6</b> | 16.5                    | 5201.11                  | Feeder Link                       |
| <b>CSX5</b> | 16.5                    | 5182.73                  | Feeder Link                       |
| <b>CSX3</b> | 16.5                    | 5143.97                  | Feeder Link                       |

Transmitting  
Beams 1:

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | S01                                           |
| Transmit Beam Frequency                                 | 2483.5 MHz -2500.0 MHz                        |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                              | -39.0 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 33.2 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

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):               |
| Hz    | -126.0              | -122.7              | -119.5              | -116.2              | -113.0              | -113.0              |

Transmitting  
Beams 2:

| Question                | Response               |
|-------------------------|------------------------|
| Beam ID                 | C2LH                   |
| Transmit Beam Frequency | 6875.0 MHz -7055.0 MHz |
| Beam Type               | Fixed                  |

|                                                         |                                               |
|---------------------------------------------------------|-----------------------------------------------|
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | dBi                                           |
| Antenna Pointing Error                                  | 0.0 degrees                                   |
| Antenna Rotational Error                                | 0.0 degrees                                   |
| Polarization Switchable                                 | No                                            |
| Polarization Alignment Relative to the Equatorial Plane | 45.0 degrees                                  |
| Max. Transmit EIRP Density                              | -51.5 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 17.3 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

**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):               |
| Hz | -134.0              | -131.5              | -129.0              | -126.5              | -124.0              | -124.0              |

**Transmitting Beams 3:**

| Question                 | Response               |
|--------------------------|------------------------|
| Beam ID                  | S02                    |
| Transmit Beam Frequency  | 2483.5 MHz -2500.0 MHz |
| Beam Type                | Fixed                  |
| Polarization             | LHCP                   |
| Peak Gain                | 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                              | -38.6 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 33.6 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

### 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):               |
| Hz    | -126.0              | -122.7              | -119.5              | -116.2              | -113.0              | -113.0              |

### Transmitting Beams 4:

| Question                                                | Response               |
|---------------------------------------------------------|------------------------|
| Beam ID                                                 | S03                    |
| Transmit Beam Frequency                                 | 2483.5 MHz -2500.0 MHz |
| Beam Type                                               | Fixed                  |
| Polarization                                            | LHCP                   |
| Peak Gain                                               | 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                              | -38.6 dBW/Hz           |
| Max. Transmit EIRP                                      | 33.6 dBW               |
| Co- or Cross Polar Mode                                 | X                      |

|                          |                                               |
|--------------------------|-----------------------------------------------|
| Service Area Description | Global Coverage between 73N and 73S latitudes |
|--------------------------|-----------------------------------------------|

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): |
| Hz | -126.0                    | -122.7                    | -119.5                    | -116.2                    | -113.0                    | -113.0                    |

Transmitting Beams 5:

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | S04                                           |
| Transmit Beam Frequency                                 | 2483.5 MHz -2500.0 MHz                        |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                              | -38.6 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 33.6 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

Max. Power Flux Density

Transmitting  
Beams 6:

|     | * 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):               |
| Hz  | -126.0              | -122.7              | -119.5              | -116.2              | -113.0              | -113.0              |

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | S05                                           |
| Transmit Beam Frequency                                 | 2483.5 MHz -2500.0 MHz                        |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                              | -38.6 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 33.6 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

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):               |
| Hz  | -126.0              | -122.7              | -119.5              | -116.2              | -113.0              | -113.0              |

Transmitting  
Beams 7:

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | C2RH                                          |
| Transmit Beam Frequency                                 | 6875.0 MHz -7055.0 MHz                        |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | RHCP                                          |
| Peak Gain                                               | dBi                                           |
| Antenna Pointing Error                                  | 0.0 degrees                                   |
| Antenna Rotational Error                                | 0.0 degrees                                   |
| Polarization Switchable                                 | No                                            |
| Polarization Alignment Relative to the Equatorial Plane | 45.0 degrees                                  |
| Max. Transmit EIRP Density                              | -51.5 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 17.3 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

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):               |
| Hz    | -126.0              | -131.5              | -129.0              | -126.5              | -124.0              | -124.0              |

Transmitting  
Beams 8:

| Question                | Response               |
|-------------------------|------------------------|
| Beam ID                 | S06                    |
| Transmit Beam Frequency | 2483.5 MHz -2500.0 MHz |
| Beam Type               | Fixed                  |
| Polarization            | LHCP                   |

|                                                         |                                               |
|---------------------------------------------------------|-----------------------------------------------|
| Peak Gain                                               | 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                              | -38.6 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 33.6 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

### 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):               |
| Hz    | -126.0              | -122.7              | -119.5              | -116.2              | -113.0              | -113.0              |

### Transmitting Beams 9:

| Question                 | Response               |
|--------------------------|------------------------|
| Beam ID                  | S07                    |
| Transmit Beam Frequency  | 2483.5 MHz -2500.0 MHz |
| Beam Type                | Fixed                  |
| Polarization             | LHCP                   |
| Peak Gain                | 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                              | -38.6 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 33.6 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

### 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):               |
| Hz    | -126.0              | -122.7              | -119.5              | -116.2              | -113.0              | -113.0              |

### Transmitting Beams 10:

| Question                                                | Response               |
|---------------------------------------------------------|------------------------|
| Beam ID                                                 | S08                    |
| Transmit Beam Frequency                                 | 2483.5 MHz -2500.0 MHz |
| Beam Type                                               | Fixed                  |
| Polarization                                            | LHCP                   |
| Peak Gain                                               | 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                              | -36.7 dBW/Hz           |
| Max. Transmit EIRP                                      | 35.5 dBW               |
| Co- or Cross Polar Mode                                 | X                      |

|                          |                                               |
|--------------------------|-----------------------------------------------|
| Service Area Description | Global Coverage between 73N and 73S latitudes |
|--------------------------|-----------------------------------------------|

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): |
| Hz | -126.0                    | -122.7                    | -119.5                    | -116.2                    | -113.0                    | -113.0                    |

Transmitting Beams 11:

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | S09                                           |
| Transmit Beam Frequency                                 | 2483.5 MHz -2500.0 MHz                        |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                              | -36.7 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 35.5 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

Max. Power Flux Density

Transmitting  
Beams 12:

|     | * 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):               |
| Hz  | -126.0              | -122.7              | -119.5              | -116.2              | -113.0              | -113.0              |

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | S10                                           |
| Transmit Beam Frequency                                 | 2483.5 MHz -2500.0 MHz                        |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                              | -36.7 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 35.5 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

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):               |
| Hz  | -126.0              | -122.7              | -119.5              | -116.2              | -113.0              | -113.0              |

Transmitting  
Beams 13:

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | S11                                           |
| Transmit Beam Frequency                                 | 2483.5 MHz -2500.0 MHz                        |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                              | -36.6 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 35.6 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

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): |
| Hz                          | -126.0                    | -122.7                    | -119.5                    | -116.2                    | -113.0                    | -113.0                    |

Transmitting  
Beams 14:

| Question                | Response               |
|-------------------------|------------------------|
| Beam ID                 | S12                    |
| Transmit Beam Frequency | 2483.5 MHz -2500.0 MHz |
| Beam Type               | Fixed                  |
| Polarization            | LHCP                   |

|                                                         |                                               |
|---------------------------------------------------------|-----------------------------------------------|
| Peak Gain                                               | 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                              | -36.7 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 35.5 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

### 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):               |
| Hz    | -126.0              | -122.7              | -119.5              | -116.2              | -113.0              | -113.0              |

### Transmitting Beams 15:

| Question                 | Response               |
|--------------------------|------------------------|
| Beam ID                  | S13                    |
| Transmit Beam Frequency  | 2483.5 MHz -2500.0 MHz |
| Beam Type                | Fixed                  |
| Polarization             | LHCP                   |
| Peak Gain                | 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                              | -36.7 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 35.5 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

### 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):               |
| Hz    | -126.0              | -122.7              | -119.5              | -116.2              | -113.0              | -113.0              |

### Transmitting Beams 16:

| Question                                                | Response               |
|---------------------------------------------------------|------------------------|
| Beam ID                                                 | S14                    |
| Transmit Beam Frequency                                 | 2483.5 MHz -2500.0 MHz |
| Beam Type                                               | Fixed                  |
| Polarization                                            | LHCP                   |
| Peak Gain                                               | 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                              | -36.7 dBW/Hz           |
| Max. Transmit EIRP                                      | 35.5 dBW               |
| Co- or Cross Polar Mode                                 | X                      |

|                          |                                               |
|--------------------------|-----------------------------------------------|
| Service Area Description | Global Coverage between 73N and 73S latitudes |
|--------------------------|-----------------------------------------------|

### 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):               |
| Hz    | -126.0              | -122.7              | -119.5              | -116.2              | -113.0              | -113.0              |

### Transmitting Beams 17:

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | S15                                           |
| Transmit Beam Frequency                                 | 2483.5 MHz -2500.0 MHz                        |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                              | -36.7 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 35.5 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

### Max. Power Flux Density

Transmitting  
Beams 18:

|     | * 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):               |
| Hz  | -126.0              | -122.7              | -119.5              | -116.2              | -113.0              | -113.0              |

| Question                                                | Response                                      |
|---------------------------------------------------------|-----------------------------------------------|
| Beam ID                                                 | S16                                           |
| Transmit Beam Frequency                                 | 2483.5 MHz -2500.0 MHz                        |
| Beam Type                                               | Fixed                                         |
| Polarization                                            | LHCP                                          |
| Peak Gain                                               | 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                              | -36.7 dBW/Hz                                  |
| Max. Transmit EIRP                                      | 35.5 dBW                                      |
| Co- or Cross Polar Mode                                 | X                                             |
| Service Area Description                                | Global Coverage between 73N and 73S latitudes |

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):               |
| Hz  | -126.0              | -122.7              | -119.5              | -116.2              | -113.0              | -113.0              |

**Transmitting  
Channels (18)**

| Channel ID | Channel Bandwidth (MHz) | Center Frequency s (MHz) | Feeder Link, Service Link or TT&C |
|------------|-------------------------|--------------------------|-----------------------------------|
| LCX1       | 16.5                    | 6908.99                  | Feeder Link                       |
| S          | 16.5                    | 2491.75                  | Service Link                      |
| LCY7       | 16.5                    | 7025.27                  | Feeder Link                       |
| LCY6       | 16.5                    | 7005.89                  | Feeder Link                       |
| LCY5       | 16.5                    | 6986.51                  | Feeder Link                       |
| LCY4       | 16.5                    | 6967.13                  | Feeder Link                       |
| LCY3       | 16.5                    | 6947.75                  | Feeder Link                       |
| LCY2       | 16.5                    | 6928.37                  | Feeder Link                       |
| LCY1       | 16.5                    | 6908.99                  | Feeder Link                       |
| LCX7       | 16.5                    | 7025.27                  | Feeder Link                       |
| LCX6       | 16.5                    | 7005.89                  | Feeder Link                       |
| LCX4       | 16.5                    | 6967.13                  | Feeder Link                       |
| LCX3       | 16.5                    | 6947.75                  | Feeder Link                       |
| LCX2       | 16.5                    | 6928.37                  | Feeder Link                       |
| LCX5       | 16.5                    | 6986.51                  | Feeder Link                       |
| LCY8       | 16.5                    | 7044.65                  | Feeder Link                       |
| LCX8       | 16.5                    | 7044.65                  | Feeder Link                       |
| TLM        | 3.2                     | 6877.5                   | 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? | Yes      |
| 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?                   | Yes      |
| Are the applicable full-frequency-reuse requirements of 25.210 met?                                                                                                                       | Yes      |
| 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>All Beams.pdf</u></a> |      | NGSO Antenna Gain Data | PDF file (*.pdf) |             |