Approved by OMB 3060-0678
Estimated Burden: up to 80 hours
April 2016

Federal Communications Commission

312 File Number: **SESMFS2018012200052**

## Filing Description

| Question | Response |
|---|---|
| Description | Market Access request for Express-AM5 |

## Satellite Information

| Question | Response |
| --- | --- |
| Select Orbit Type | GSO |
| Space Station or Satellite Network Name | Express-AM5 |
| 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 (9)

| Nature of service | Description | Frequency Band(s) | Mode Type |
|---|---|---|---|
| **Fixed-Satellite Service** | | 3404.0 MHz -3406.0 MHz | Transmit |
| **Fixed-Satellite Service** | | 5745.0 MHz -5747.0 MHz | Receive |
| **Fixed-Satellite Service** | | 10950.0 MHz -11200.0 MHz | Transmit |
| **Fixed-Satellite Service** | | 11200.0 MHz -11450.0 MHz | Transmit |
| **Fixed-Satellite Service** | | 11450.0 MHz -11700.0 MHz | Transmit |
| **Fixed-Satellite Service** | | 13750.0 MHz -14000.0 MHz | Receive |
| **Fixed-Satellite Service** | | 14000.0 MHz -14500.0 MHz | Receive |
| **Fixed-Satellite Service** | | 13000.0 MHz -13250.0 MHz | Receive |
| **Fixed-Satellite Service** | | 12500.0 MHz -12750.0 MHz | Transmit |

## Orbital Information For Geostationary Satellites

| Section | Question | Response |
|---|---|---|
| **Orbital Longitude Information** | Orbital Longitude | 140.0 degrees |
| | Hemisphere of Orbital Longitude | E |
| **Longitudinal Tolerance or East /West Station-Keeping** | Toward West | 0.05 degrees |
| | Toward East | 0.05 degrees |
| **Inclination Excursion or North /South Station-Keeping Tolerance** | Inclination Excursion or North /South Station-Keeping Tolerance | 0.05 degrees |
| **Antenna Axis Attitude Accuracy** | Roll | 0.1 degrees |
| | Pitch | 0.1 degrees |
| | Yaw | 0.1 degrees |

## Receiving Beams 1:

| Question | Response |
|---|---|
| Beam ID | F1H3 |
| Receive Beam Frequency | 14000.0 MHz -14500.0 MHz |
| Beam Type | Fixed |
| Polarization | H |
| Peak Gain | 35.4 dBi |
| Antenna Pointing Error | 0.05 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 0.0 degrees |
| G/T at Max. Gain Point | 8.7 dB/K |
| Min. Saturation Flux Density | -97.0 dBW/m2 |
| Max. Saturation Flux Density | -77.0 dBW/m2 |
| Co- or Cross Polar Mode | C |
| Service Area Description | F1 Service Area from the Service Area Diagrams attachment |

## Receiving Beams 2:

| Question | Response |
|---|---|
| Beam ID | F2H1 |
| Receive Beam Frequency | 13000.0 MHz -13250.0 MHz |
| Beam Type | Fixed |
| Polarization | H |
| Peak Gain | 35.9 dBi |
| Antenna Pointing Error | 0.05 degrees |
| Antenna Rotational Error | 0.0 degrees |

| | |
|---|---|
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 0.0 degrees |
| G/T at Max. Gain Point | 9.8 dB/K |
| Min. Saturation Flux Density | -97.0 dBW/m2 |
| Max. Saturation Flux Density | -77.0 dBW/m2 |
| Co- or Cross Polar Mode | C |
| Service Area Description | F2 Service Area from the Service Area Diagrams attachment |

## Receiving Beams 3:

| Question | Response |
|---|---|
| Beam ID | F2V1 |
| Receive Beam Frequency | 13000.0 MHz -13250.0 MHz |
| Beam Type | Fixed |
| Polarization | V |
| Peak Gain | 35.9 dBi |
| Antenna Pointing Error | 0.05 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 90.0 degrees |
| G/T at Max. Gain Point | 9.8 dB/K |
| Min. Saturation Flux Density | -97.0 dBW/m2 |
| Max. Saturation Flux Density | -77.0 dBW/m2 |
| Co- or Cross Polar Mode | C |
| Service Area Description | F2 Service Area from the Service Area Diagrams attachment |

## Receiving Beams 4:

| Question | Response |
|---|---|
| Beam ID | F1V3 |
| Receive Beam Frequency | 14000.0 MHz -14500.0 MHz |
| Beam Type | Fixed |
| Polarization | V |
| Peak Gain | 35.4 dBi |
| Antenna Pointing Error | 0.05 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 90.0 degrees |
| G/T at Max. Gain Point | 8.7 dB/K |
| Min. Saturation Flux Density | -97.0 dBW/m2 |
| Max. Saturation Flux Density | -77.0 dBW/m2 |
| Co- or Cross Polar Mode | C |
| Service Area Description | F1 Service Area from the Service Area Diagrams attachment |

## Receiving Beams 5:

| Question | Response |
|---|---|
| Beam ID | F2H2 |
| Receive Beam Frequency | 13750.0 MHz -14000.0 MHz |
| Beam Type | Fixed |
| Polarization | H |
| Peak Gain | 35.9 dBi |
| Antenna Pointing Error | 0.05 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |

| | |
|---|---|
| Polarization Alignment Relative to the Equatorial Plane | 0.0 degrees |
| G/T at Max. Gain Point | 9.8 dB/K |
| Min. Saturation Flux Density | -97.0 dBW/m2 |
| Max. Saturation Flux Density | -77.0 dBW/m2 |
| Co- or Cross Polar Mode | C |
| Service Area Description | F2 Service Area from the Service Area Diagrams attachment |

## Receiving Beams 6:

| Question | Response |
|---|---|
| Beam ID | F2V2 |
| Receive Beam Frequency | 13750.0 MHz -14000.0 MHz |
| Beam Type | Fixed |
| Polarization | V |
| Peak Gain | 35.9 dBi |
| Antenna Pointing Error | 0.05 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 90.0 degrees |
| G/T at Max. Gain Point | 35.9 dB/K |
| Min. Saturation Flux Density | -97.0 dBW/m2 |
| Max. Saturation Flux Density | -77.0 dBW/m2 |
| Co- or Cross Polar Mode | C |
| Service Area Description | F2 Service Area from the Service Area Diagrams attachment |

## Receiving Beams 7:

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

| | |
|---|---|
| Beam ID | S1H2 |
| Receive Beam Frequency | 13750.0 MHz -14000.0 MHz |
| Beam Type | Steerable |
| Polarization | H |
| Peak Gain | 38.2 dBi |
| Antenna Pointing Error | 0.1 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 0.0 degrees |
| G/T at Max. Gain Point | 11.7 dB/K |
| Min. Saturation Flux Density | -97.0 dBW/m2 |
| Max. Saturation Flux Density | -77.0 dBW/m2 |
| Co- or Cross Polar Mode | C |
| Service Area Description | S1 Service Area from the Service Area Diagrams attachment |

## Receiving Beams 8:

| Question | Response |
|---|---|
| Beam ID | S1V2 |
| Receive Beam Frequency | 13750.0 MHz -14000.0 MHz |
| Beam Type | Steerable |
| Polarization | V |
| Peak Gain | 38.2 dBi |
| Antenna Pointing Error | 0.1 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 90.0 degrees |

| | |
|---|---|
| G/T at Max. Gain Point | 11.7 dB/K |
| Min. Saturation Flux Density | -97.0 dBW/m2 |
| Max. Saturation Flux Density | -77.0 dBW/m2 |
| Co- or Cross Polar Mode | C |
| Service Area Description | S1 Service Area from the Service Area Diagrams attachment |

## Receiving Beams 9:

| Question | Response |
|---|---|
| Beam ID | CLTC |
| Receive Beam Frequency | 5745.0 MHz -5747.0 MHz |
| Beam Type | Fixed |
| Polarization | LHCP |
| Peak Gain | 20.3 dBi |
| Antenna Pointing Error | 0.07 degrees |
| Antenna Rotational Error | 0.07 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 45.0 degrees |
| G/T at Max. Gain Point | -7.8 dB/K |
| Min. Saturation Flux Density | -123.0 dBW/m2 |
| Max. Saturation Flux Density | -88.0 dBW/m2 |
| Co- or Cross Polar Mode | C |
| Service Area Description | Global Coverage from 140E longitude |

## Receiving Channels (37)

| Channel ID | Channel Bandwidth (MHz) | Center Frequency s (MHz) | Feeder Link, Service Link or TT&C |
|---|---|---|---|
| **TC1** | 1.0 | 5746.0 | TT&C |
| **UF9** | 36.0 | 13187.3 | Service Link |
| **UF8** | 36.0 | 13145.6 | Service Link |
| **UF7** | 36.0 | 13145.6 | Service Link |
| **UF6** | 36.0 | 13103.9 | Service Link |
| **UF5** | 36.0 | 13103.9 | Service Link |
| **UF4** | 36.0 | 13062.2 | Service Link |
| **UF3** | 36.0 | 13062.2 | Service Link |
| **UF2** | 36.0 | 13020.5 | Service Link |
| **UF12** | 36.0 | 13229.0 | Service Link |
| **UD4** | 54.0 | 14093.75 | Service Link |
| **UD3** | 54.0 | 14093.75 | Service Link |
| **UD2** | 54.0 | 14031.25 | Service Link |
| **UD1** | 54.0 | 14031.25 | Service Link |
| **UB8** | 54.0 | 14468.75 | Service Link |
| **UB7** | 54.0 | 14468.75 | Service Link |
| **UB6** | 54.0 | 14406.25 | Service Link |
| **UB5** | 54.0 | 14406.25 | Service Link |
| **UB4** | 54.0 | 14343.75 | Service Link |
| **UB3** | 54.0 | 14343.75 | Service Link |
| **UB2** | 54.0 | 14281.25 | Service Link |
| **UB1** | 54.0 | 14281.25 | Service Link |
| **UA8** | 54.0 | 13968.75 | Service Link |
| **UA7** | 54.0 | 13968.75 | Service Link |

| | | | |
|---|---|---|---|
| **UA6** | 54.0 | 13906.25 | Service Link |
| **UA5** | 54.0 | 13906.25 | Service Link |
| **UA4** | 54.0 | 13843.75 | Service Link |
| **UA3** | 54.0 | 13843.75 | Service Link |
| **UA2** | 54.0 | 13781.25 | Service Link |
| **UA1** | 54.0 | 13781.25 | Service Link |
| **UD5** | 54.0 | 14156.25 | Service Link |
| **UD6** | 54.0 | 14156.25 | Service Link |
| **UD7** | 54.0 | 14218.75 | Service Link |
| **UD8** | 54.0 | 14218.75 | Service Link |
| **UF1** | 36.0 | 13020.5 | Service Link |
| **UF10** | 36.0 | 13187.3 | Service Link |
| **UF11** | 36.0 | 13229.0 | Service Link |

## Transmitting Beams 1:

| Question | Response |
|---|---|
| Beam ID | F1H5 |
| Transmit Beam Frequency | 10950.0 MHz -11200.0 MHz |
| Beam Type | Fixed |
| Polarization | H |
| Peak Gain | 33.2 dBi |
| Antenna Pointing Error | 0.05 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 0.0 degrees |
| Max. Transmit EIRP Density | -23.8 dBW/Hz |
| Max. Transmit EIRP | 53.5 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | F1 Service Area in the Service Area Diagrams attachment |

### Max. Power Flux Density

| * BW: | * 0° - 5° (dBW/$m^2$ /BW): | * 5° - 10° (dBW/$m^2$ /BW): | * 10° - 15° (dBW/$m^2$ /BW): | * 15° - 20° (dBW/$m^2$ /BW): | * 20° - 25° (dBW/$m^2$ /BW): | * 25° - 90° (dBW/$m^2$ /BW): |
|---|---|---|---|---|---|---|
| **4.0 kHz** | -152.4 | -152.1 | -151.8 | -151.4 | -151.1 | -149.9 |

## Transmitting Beams 2:

| Question | Response |
|---|---|
| Beam ID | F1V5 |
| Transmit Beam Frequency | 10950.0 MHz -11200.0 MHz |

| | |
|---|---|
| Beam Type | Fixed |
| Polarization | V |
| Peak Gain | 33.2 dBi |
| Antenna Pointing Error | 0.05 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 90.0 degrees |
| Max. Transmit EIRP Density | -23.8 dBW/Hz |
| Max. Transmit EIRP | 53.5 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | F1 Service Area in the Service Area Diagrams attachment |

### Max. Power Flux Density

| * BW: | * 0° - 5° (dbW/$m^2$ /BW): | * 5° - 10° (dbW/$m^2$ /BW): | * 10° - 15° (dbW/$m^2$ /BW): | * 15° - 20° (dbW/$m^2$ /BW): | * 20° - 25° (dbW/$m^2$ /BW): | * 25° - 90° (dbW/$m^2$ /BW): |
|---|---|---|---|---|---|---|
| **4.0 kHz** | -152.4 | -152.1 | -151.8 | -151.4 | -151.1 | -149.9 |

## Transmitting Beams 3:

| Question | Response |
|---|---|
| Beam ID | F1H7 |
| Transmit Beam Frequency | 11450.0 MHz -11700.0 MHz |
| Beam Type | Fixed |
| Polarization | H |
| Peak Gain | 33.2 dBi |
| Antenna Pointing Error | 0.05 degrees |

| | |
|---|---|
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 0.0 degrees |
| Max. Transmit EIRP Density | -23.8 dBW/Hz |
| Max. Transmit EIRP | 53.5 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | F1 Service Area in the Service Area Diagrams attachment |

### Max. Power Flux Density

| * BW: | * 0° - 5° (dbW/$m^2$ /BW): | * 5° - 10° (dbW/$m^2$ /BW): | * 10° - 15° (dbW/$m^2$ /BW): | * 15° - 20° (dbW/$m^2$ /BW): | * 20° - 25° (dbW/$m^2$ /BW): | * 25° - 90° (dbW/$m^2$ /BW): |
|---|---|---|---|---|---|---|
| **4.0 kHz** | -152.4 | -152.1 | -151.8 | -151.4 | -151.1 | -149.9 |

## Transmitting Beams 4:

| Question | Response |
|---|---|
| Beam ID | F1V7 |
| Transmit Beam Frequency | 11450.0 MHz -11700.0 MHz |
| Beam Type | Fixed |
| Polarization | V |
| Peak Gain | 33.2 dBi |
| Antenna Pointing Error | 0.05 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 90.0 degrees |
| Max. Transmit EIRP Density | -23.8 dBW/Hz |

| | |
|---|---|
| Max. Transmit EIRP | 53.5 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | F1 Service Area in the Service Area Diagrams attachment |

### Max. Power Flux Density

| * BW: | * 0° - 5° (dbW/m$^2$ /BW): | * 5° - 10° (dbW/m$^2$ /BW): | * 10° - 15° (dbW/m$^2$ /BW): | * 15° - 20° (dbW/m$^2$ /BW): | * 20° - 25° (dbW/m$^2$ /BW): | * 25° - 90° (dbW/m$^2$ /BW): |
|---|---|---|---|---|---|---|
| **4.0 kHz** | -152.4 | -152.1 | -151.8 | -151.4 | -151.1 | -149.9 |

## Transmitting Beams 5:

| Question | Response |
|---|---|
| Beam ID | F2H6 |
| Transmit Beam Frequency | 11200.0 MHz -11450.0 MHz |
| Beam Type | Fixed |
| Polarization | H |
| Peak Gain | 34.2 dBi |
| Antenna Pointing Error | 0.05 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 0.0 degrees |
| Max. Transmit EIRP Density | -22.5 dBW/Hz |
| Max. Transmit EIRP | 54.8 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | F2 Service Area in the Service Area Diagrams attachment |

### Max. Power Flux Density

| * BW: | * 0° - 5° (dbW/m$^2$ /BW): | * 5° - 10° (dbW/m$^2$ /BW): | * 10° - 15° (dbW/m$^2$ /BW): | * 15° - 20° (dbW/m$^2$ /BW): | * 20° - 25° (dbW/m$^2$ /BW): | * 25° - 90° (dbW/m$^2$ /BW): |
|---|---|---|---|---|---|---|
| **4.0 kHz** | -152.8 | -151.7 | -151.0 | -150.4 | -150.0 | -148.6 |

## Transmitting Beams 6:

| Question | Response |
|---|---|
| Beam ID | F2V6 |
| Transmit Beam Frequency | 11200.0 MHz -11450.0 MHz |
| Beam Type | Fixed |
| Polarization | V |
| Peak Gain | 34.2 dBi |
| Antenna Pointing Error | 0.05 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 90.0 degrees |
| Max. Transmit EIRP Density | -22.5 dBW/Hz |
| Max. Transmit EIRP | 54.8 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | F2 Service Area in the Service Area Diagrams attachment |

### Max. Power Flux Density

| * BW: | * 0° - 5° (dbW/m$^2$ /BW): | * 5° - 10° (dbW/m$^2$ /BW): | * 10° - 15° (dbW/m$^2$ /BW): | * 15° - 20° (dbW/m$^2$ /BW): | * 20° - 25° (dbW/m$^2$ /BW): | * 25° - 90° (dbW/m$^2$ /BW): |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| **4.0 kHz** | -152.8 | -151.7 | -151.0 | -150.4 | -150.0 | -148.6 |

## Transmitting Beams 7:

| Question | Response |
|---|---|
| Beam ID | F2H8 |
| Transmit Beam Frequency | 12500.0 MHz -12750.0 MHz |
| Beam Type | Fixed |
| Polarization | H |
| Peak Gain | 34.2 dBi |
| Antenna Pointing Error | 0.05 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 0.0 degrees |
| Max. Transmit EIRP Density | -22.5 dBW/Hz |
| Max. Transmit EIRP | 54.8 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | F2 Service Area in the Service Area Diagrams attachment |

### Max. Power Flux Density

| * BW: | * 0° - 5° (dbW/$m^2$ /BW): | * 5° - 10° (dbW/$m^2$ /BW): | * 10° - 15° (dbW/$m^2$ /BW): | * 15° - 20° (dbW/$m^2$ /BW): | * 20° - 25° (dbW/$m^2$ /BW): | * 25° - 90° (dbW/$m^2$ /BW): |
|---|---|---|---|---|---|---|
| **4.0 kHz** | -152.8 | -151.7 | -151.0 | -150.4 | -150.0 | -148.6 |

## Transmitting Beams 8:

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

| | |
|---|---|
| Beam ID | F2V8 |
| Transmit Beam Frequency | 12500.0 MHz -12750.0 MHz |
| Beam Type | Fixed |
| Polarization | V |
| Peak Gain | 34.2 dBi |
| Antenna Pointing Error | 0.05 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 90.0 degrees |
| Max. Transmit EIRP Density | -22.5 dBW/Hz |
| Max. Transmit EIRP | 54.8 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | F2 Service Area in the Service Area Diagrams attachment |

### Max. Power Flux Density

| * BW: | * 0° - 5° (dbW/$m^2$ /BW): | * 5° - 10° (dbW/$m^2$ /BW): | * 10° - 15° (dbW/$m^2$ /BW): | * 15° - 20° (dbW/$m^2$ /BW): | * 20° - 25° (dbW/$m^2$ /BW): | * 25° - 90° (dbW/$m^2$ /BW): |
|---|---|---|---|---|---|---|
| **4.0 kHz** | -152.8 | -151.7 | -151.0 | -150.4 | -150.0 | -148.6 |

## Transmitting Beams 9:

| Question | Response |
|---|---|
| Beam ID | S1H8 |
| Transmit Beam Frequency | 12500.0 MHz -12750.0 MHz |
| Beam Type | Steerable |
| Polarization | H |

| | |
|---|---|
| Peak Gain | 37.5 dBi |
| Antenna Pointing Error | 0.1 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 0.0 degrees |
| Max. Transmit EIRP Density | -22.0 dBW/Hz |
| Max. Transmit EIRP | 55.3 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | S1 Service Area in the Service Area Diagrams attachment |

### Max. Power Flux Density

| * BW: | * 0° - 5° (dbW/$m^2$ /BW): | * 5° - 10° (dbW/$m^2$ /BW): | * 10° - 15° (dbW/$m^2$ /BW): | * 15° - 20° (dbW/$m^2$ /BW): | * 20° - 25° (dbW/$m^2$ /BW): | * 25° - 90° (dbW/$m^2$ /BW): |
|---|---|---|---|---|---|---|
| **4.0 kHz** | -149.3 | -149.2 | -149.0 | -148.9 | -148.8 | -148.1 |

## Transmitting Beams 10:

| Question | Response |
|---|---|
| Beam ID | S1V8 |
| Transmit Beam Frequency | 12500.0 MHz -12750.0 MHz |
| Beam Type | Steerable |
| Polarization | V |
| Peak Gain | 37.5 dBi |
| Antenna Pointing Error | 0.1 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |

| | |
|---|---|
| Polarization Alignment Relative to the Equatorial Plane | 90.0 degrees |
| Max. Transmit EIRP Density | -22.0 dBW/Hz |
| Max. Transmit EIRP | 55.3 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | S1 Service Area in the Service Area Diagrams attachment |

### Max. Power Flux Density

| * BW: | * 0° - 5° (dbW/$m^2$ /BW): | * 5° - 10° (dbW/$m^2$ /BW): | * 10° - 15° (dbW/$m^2$ /BW): | * 15° - 20° (dbW/$m^2$ /BW): | * 20° - 25° (dbW/$m^2$ /BW): | * 25° - 90° (dbW/$m^2$ /BW): |
|---|---|---|---|---|---|---|
| **4.0 kHz** | -149.3 | -149.2 | -149.0 | -148.9 | -148.8 | -148.1 |

## Transmitting Beams 11:

| Question | Response |
|---|---|
| Beam ID | CRT1 |
| Transmit Beam Frequency | 3404.0 MHz -3406.0 MHz |
| Beam Type | Fixed |
| Polarization | RHCP |
| Peak Gain | -1.3 dBi |
| Antenna Pointing Error | 0.07 degrees |
| Antenna Rotational Error | 0.07 degrees |
| Polarization Switchable | No |
| Polarization Alignment Relative to the Equatorial Plane | 45.0 degrees |
| Max. Transmit EIRP Density | -47.3 dBW/Hz |
| Max. Transmit EIRP | 7.4 dBW |
| Co- or Cross Polar Mode | C |

| | |
|---|---|
| Service Area Description | Earth Coverage from 140E longitude |

### Max. Power Flux Density

| * BW: | * 0° - 5° (dbW/$m^2$ /BW): | * 5° - 10° (dbW/$m^2$ /BW): | * 10° - 15° (dbW/$m^2$ /BW): | * 15° - 20° (dbW/$m^2$ /BW): | * 20° - 25° (dbW/$m^2$ /BW): | * 25° - 90° (dbW/$m^2$ /BW): |
|---|---|---|---|---|---|---|
| **4.0 kHz** | -174.6 | -174.5 | -174.3 | -174.2 | -174.1 | -173.4 |

## Transmitting Beams 12:

| Question | Response |
|---|---|
| Beam ID | CRT2 |
| Transmit Beam Frequency | 3404.0 MHz -3406.0 MHz |
| Beam Type | Fixed |
| Polarization | RHCP |
| Peak Gain | -5.4 dBi |
| Antenna Pointing Error | 0.07 degrees |
| Antenna Rotational Error | 0.07 degrees |
| Polarization Switchable | No |
| Polarization Alignment Relative to the Equatorial Plane | 45.0 degrees |
| Max. Transmit EIRP Density | -40.7 dBW/Hz |
| Max. Transmit EIRP | 14.1 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | Earth Coverage from 140E longitude |

### Max. Power Flux Density

| * BW: | * 0° - 5° (dbW/m$^2$ /BW): | * 5° - 10° (dbW/m$^2$ /BW): | * 10° - 15° (dbW/m$^2$ /BW): | * 15° - 20° (dbW/m$^2$ /BW): | * 20° - 25° (dbW/m$^2$ /BW): | * 25° - 90° (dbW/m$^2$ /BW): |
|---|---|---|---|---|---|---|
| **4.0 kHz** | -168.0 | -167.9 | -167.7 | -167.6 | -167.5 | -166.8 |

## Transmitting Beams 13:

| Question | Response |
|---|---|
| Beam ID | B1R5 |
| Transmit Beam Frequency | 11199.0 MHz -11200.0 MHz |
| Beam Type | Fixed |
| Polarization | RHCP |
| Peak Gain | 20.5 dBi |
| Antenna Pointing Error | 0.1 degrees |
| Antenna Rotational Error | 0.0 degrees |
| Polarization Switchable | |
| Polarization Alignment Relative to the Equatorial Plane | 45.0 degrees |
| Max. Transmit EIRP Density | -22.72 dBW/Hz |
| Max. Transmit EIRP | 13.28 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | Earth coverage from 140E longitude |

### Max. Power Flux Density

| * BW: | * 0° - 5° (dbW/m$^2$ /BW): | * 5° - 10° (dbW/m$^2$ /BW): | * 10° - 15° (dbW/m$^2$ /BW): | * 15° - 20° (dbW/m$^2$ /BW): | * 20° - 25° (dbW/m$^2$ /BW): | * 25° - 90° (dbW/m$^2$ /BW): |
|---|---|---|---|---|---|---|
| **4.0 kHz** | -154.0 | -153.7 | -153.3 | -153.0 | -152.7 | -148.8 |

## Transmitting Channels (38)

| Channel ID | Channel Bandwidth (MHz) | Center Frequency s (MHz) | Feeder Link, Service Link or TT&C |
|---|---|---|---|
| **TT1** | 0.3 | 3405.0 | TT&C |
| **DF1** | 36.0 | 11220.5 | Service Link |
| **DF2** | 36.0 | 11220.5 | Service Link |
| **DF3** | 36.0 | 11262.2 | Service Link |
| **DF4** | 36.0 | 11262.2 | Service Link |
| **DF5** | 36.0 | 11303.9 | Service Link |
| **DF6** | 36.0 | 11303.9 | Service Link |
| **DF7** | 36.0 | 11345.6 | Service Link |
| **DF8** | 36.0 | 11345.6 | Service Link |
| **DF9** | 36.0 | 11387.3 | Service Link |
| **DF10** | 36.0 | 11387.3 | Service Link |
| **DF11** | 36.0 | 11429.0 | Service Link |
| **DF12** | 36.0 | 11429.0 | Service Link |
| **B1** | 0.004 | 11199.5 | Service Link |
| **DD8** | 54.0 | 11668.75 | Service Link |
| **DD7** | 54.0 | 11668.75 | Service Link |
| **DD6** | 54.0 | 11606.25 | Service Link |
| **DD5** | 54.0 | 11606.25 | Service Link |
| **DD4** | 54.0 | 11543.75 | Service Link |
| **DD3** | 54.0 | 11543.75 | Service Link |
| **DD2** | 54.0 | 11481.25 | Service Link |
| **DD1** | 54.0 | 11481.25 | Service Link |
| **DB8** | 54.0 | 11168.75 | Service Link |
| **DB7** | 54.0 | 11168.75 | Service Link |

| | | | |
|---|---|---|---|
| **DB6** | 54.0 | 11106.25 | Service Link |
| **DB5** | 54.0 | 11106.25 | Service Link |
| **DB4** | 54.0 | 11043.75 | Service Link |
| **DB3** | 54.0 | 11043.75 | Service Link |
| **DB2** | 54.0 | 10981.25 | Service Link |
| **DB1** | 54.0 | 10981.25 | Service Link |
| **DA8** | 54.0 | 12719.25 | Service Link |
| **DA7** | 54.0 | 12719.25 | Service Link |
| **DA6** | 54.0 | 12656.75 | Service Link |
| **DA5** | 54.0 | 12656.75 | Service Link |
| **DA4** | 54.0 | 12594.25 | Service Link |
| **DA3** | 54.0 | 12594.25 | Service Link |
| **DA2** | 54.0 | 12531.75 | Service Link |
| **DA1** | 54.0 | 12531.75 | 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? | Yes |
| 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? | 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 |
|---|---|---|---|---|
| am5.mdb | | GSO Antenna Gain Contour Data | GIMS file (*.mdb) | GIMS Container with GTX files for all applicable beams |
| AM5 - Service Areas - RevA.pdf | | Service Area Diagram | PDF file (*.pdf) | Document describing the service areas for all applicable beams |