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

Federal Communications Commission

312 File Number: **SATMOD2022110800154**

## Filing Description

| Question | Response |
|---|---|
| Description | This Schedule S is submitted in support of the application of SES Americom, Inc. seeking Commission authority to relocate AMC-11 to 111.1 W.L. |

## Satellite Information

| Question | Response |
| --- | --- |
| Select Orbit Type | GSO |
| Space Station or Satellite Network Name | AMC-11 |
| Estimated Lifetime of Satellite(s) From Date of Launch | 25 Years |
| Will the space station(s) operate on a Common Carrier basis? | No |

## Operating Frequency Bands (2)

| Nature of service | Description | Frequency Band(s) | Mode Type |
|---|---|---|---|
| **Fixed-Satellite Service** | | 3700.0 MHz -4200.0 MHz | Transmit |
| **Fixed-Satellite Service** | | 5925.0 MHz -6425.0 MHz | Receive |

## Orbital Information For Geostationary Satellites

| Section | Question | Response |
|---|---|---|
| **Orbital Longitude Information** | Orbital Longitude | 111.0 degrees |
| | Hemisphere of Orbital Longitude | W |
| **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 | 0.1 degrees |
| **Antenna Axis Attitude Accuracy** | Roll | 0.1 degrees |
| | Pitch | 0.1 degrees |
| | Yaw | 0.1 degrees |

## Receiving Beams 1:

| Question | Response |
|---|---|
| Beam ID | CMD |
| Receive Beam Frequency | 6423.0 MHz -6424.0 MHz |
| Beam Type | Fixed |
| Polarization | H |
| Peak Gain | 12.6 dBi |
| Antenna Pointing Error | 0.1 degrees |
| Antenna Rotational Error | 0.1 degrees |
| Polarization Switchable | No |
| Polarization Alignment Relative to the Equatorial Plane | 0.0 degrees |
| G/T at Max. Gain Point | -14.3 dB/K |
| Min. Saturation Flux Density | -95.0 dBW/m2 |
| Max. Saturation Flux Density | -60.0 dBW/m2 |
| Co- or Cross Polar Mode | C |
| Service Area Description | Global horn, the contour at 8 dB below peak falls entirely beyond the edge of the visible Earth. |

## Receiving Beams 2:

| Question | Response |
|---|---|
| Beam ID | ARV |
| Receive Beam Frequency | 5925.0 MHz -6425.0 MHz |
| Beam Type | Fixed |
| Polarization | V |
| Peak Gain | 30.3 dBi |
| Antenna Pointing Error | 0.1 degrees |

| | |
|---|---|
| Antenna Rotational Error | 0.1 degrees |
| Polarization Switchable | Yes |
| Polarization Alignment Relative to the Equatorial Plane | 90.0 degrees |
| G/T at Max. Gain Point | 5.2 dB/K |
| Min. Saturation Flux Density | -98.0 dBW/m2 |
| Max. Saturation Flux Density | -67.0 dBW/m2 |
| Co- or Cross Polar Mode | C |
| Service Area Description | North America |

## Receiving Beams 3:

| Question | Response |
|---|---|
| Beam ID | ARH |
| Receive Beam Frequency | 5925.0 MHz -6425.0 MHz |
| Beam Type | Fixed |
| Polarization | H |
| Peak Gain | 30.3 dBi |
| Antenna Pointing Error | 0.1 degrees |
| Antenna Rotational Error | 0.1 degrees |
| Polarization Switchable | Yes |
| Polarization Alignment Relative to the Equatorial Plane | 0.0 degrees |
| G/T at Max. Gain Point | 5.2 dB/K |
| Min. Saturation Flux Density | -98.0 dBW/m2 |
| Max. Saturation Flux Density | -67.0 dBW/m2 |
| Co- or Cross Polar Mode | C |
| Service Area Description | North America |

## Receiving Channels (25)

| Channel ID | Channel Bandwidth (MHz) | Center Frequency s (MHz) | Feeder Link, Service Link or TT&C |
|---|---|---|---|
| **22U** | 36.0 | 6365.0 | Service Link |
| **23U** | 36.0 | 6385.0 | Service Link |
| **24U** | 36.0 | 6405.0 | Service Link |
| **18U** | 36.0 | 6285.0 | Service Link |
| **17U** | 36.0 | 6265.0 | Service Link |
| **16U** | 36.0 | 6245.0 | Service Link |
| **15U** | 36.0 | 6225.0 | Service Link |
| **14U** | 36.0 | 6205.0 | Service Link |
| **13U** | 36.0 | 6185.0 | Service Link |
| **07U** | 36.0 | 6065.0 | Service Link |
| **08U** | 36.0 | 6085.0 | Service Link |
| **09U** | 36.0 | 6105.0 | Service Link |
| **10U** | 36.0 | 6125.0 | Service Link |
| **11U** | 36.0 | 6145.0 | Service Link |
| **01U** | 36.0 | 5945.0 | Service Link |
| **02U** | 36.0 | 5965.0 | Service Link |
| **12U** | 36.0 | 6165.0 | Service Link |
| **19U** | 36.0 | 6305.0 | Service Link |
| **20U** | 36.0 | 6325.0 | Service Link |
| **21U** | 36.0 | 6345.0 | Service Link |
| **05U** | 36.0 | 6025.0 | Service Link |
| **06U** | 36.0 | 6045.0 | Service Link |
| **CMD** | 0.4 | 6423.5 | TT&C |
| **04U** | 36.0 | 6005.0 | Service Link |

| | | | |
|---|---|---|---|
| **03U** | 36.0 | 5985.0 | Service Link |

## Transmitting Beams 1:

| Question | Response |
|---|---|
| Beam ID | ATH |
| Transmit Beam Frequency | 3700.0 MHz -4200.0 MHz |
| Beam Type | Fixed |
| Polarization | H |
| Peak Gain | 29.1 dBi |
| Antenna Pointing Error | 0.1 degrees |
| Antenna Rotational Error | 0.1 degrees |
| Polarization Switchable | Yes |
| Polarization Alignment Relative to the Equatorial Plane | 0.0 degrees |
| Max. Transmit EIRP Density | -33.1 dBW/Hz |
| Max. Transmit EIRP | 42.5 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | North America |

### 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): |
|---|---|---|---|---|---|---|
| **1.0 MHz** | -138.5 | -138.9 | -139.0 | -139.3 | -139.3 | -138.8 |

## Transmitting Beams 2:

| Question | Response |
|---|---|
| Beam ID | ATV |
| Transmit Beam Frequency | 3700.0 MHz -4200.0 MHz |

| | |
|---|---|
| Beam Type | Fixed |
| Polarization | V |
| Peak Gain | 29.1 dBi |
| Antenna Pointing Error | 0.1 degrees |
| Antenna Rotational Error | 0.1 degrees |
| Polarization Switchable | Yes |
| Polarization Alignment Relative to the Equatorial Plane | 90.0 degrees |
| Max. Transmit EIRP Density | -33.1 dBW/Hz |
| Max. Transmit EIRP | 42.5 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | North America |

### 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): |
|---|---|---|---|---|---|---|
| **1.0 MHz** | -138.5 | -138.9 | -139.0 | -139.3 | -139.3 | -138.8 |

## Transmitting Beams 3:

| Question | Response |
|---|---|
| Beam ID | TM1 |
| Transmit Beam Frequency | 3700.0 MHz -3701.0 MHz |
| Beam Type | Fixed |
| Polarization | H |
| Peak Gain | 8.4 dBi |
| Antenna Pointing Error | 0.1 degrees |
| Antenna Rotational Error | 0.1 degrees |

| | |
|---|---|
| Polarization Switchable | No |
| Polarization Alignment Relative to the Equatorial Plane | 0.0 degrees |
| Max. Transmit EIRP Density | -47.0 dBW/Hz |
| Max. Transmit EIRP | 13.0 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | Global Horn, the contour at 8 dB below peak falls entirely beyond the edge of the visible Earth. |

### 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): |
|---|---|---|---|---|---|---|
| **1.0 MHz** | -149.5 | -149.4 | -149.3 | -149.1 | -149.0 | -148.3 |

## Transmitting Beams 4:

| Question | Response |
|---|---|
| Beam ID | TM2 |
| Transmit Beam Frequency | 4199.0 MHz -4200.0 MHz |
| Beam Type | Fixed |
| Polarization | V |
| Peak Gain | 8.4 dBi |
| Antenna Pointing Error | 0.1 degrees |
| Antenna Rotational Error | 0.1 degrees |
| Polarization Switchable | No |
| Polarization Alignment Relative to the Equatorial Plane | 90.0 degrees |
| Max. Transmit EIRP Density | -47.0 dBW/Hz |

| | |
|---|---|
| Max. Transmit EIRP | 13.0 dBW |
| Co- or Cross Polar Mode | C |
| Service Area Description | Global Horn, the contour at 8 dB below peak falls entirely beyond the edge of the visible Earth. |

### 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): |
|---|---|---|---|---|---|---|
| **1.0 MHz** | -149.5 | -149.4 | -149.3 | -149.1 | -149.0 | -148.3 |

## Transmitting Beams 5:

| Question | Response |
|---|---|
| Beam ID | TM3 |
| Transmit Beam Frequency | 4199.0 MHz -4200.0 MHz |
| Beam Type | Fixed |
| Polarization | V |
| Peak Gain | 29.5 dBi |
| Antenna Pointing Error | 0.1 degrees |
| Antenna Rotational Error | 0.1 degrees |
| Polarization Switchable | No |
| Polarization Alignment Relative to the Equatorial Plane | 90.0 degrees |
| Max. Transmit EIRP Density | -47.0 dBW/Hz |
| Max. Transmit EIRP | 13.0 dBW |
| Co- or Cross Polar Mode | C |

| | |
|---|---|
| Service Area Description | High gain, very low power beacon, the contour at 8 dB below peak falls entirely beyond the edge of the visible Earth. |

## 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): |
|---|---|---|---|---|---|---|
| **1.0 MHz** | -149.5 | -149.4 | -149.3 | -149.1 | -149.0 | -148.3 |

## Transmitting Channels (26)

| Channel ID | Channel Bandwidth (MHz) | Center Frequency s (MHz) | Feeder Link, Service Link or TT&C |
|---|---|---|---|
| **20D** | 36.0 | 4100.0 | Service Link |
| **08D** | 36.0 | 3860.0 | Service Link |
| **TM2** | 0.12 | 4199.5 | TT&C |
| **TM1** | 0.12 | 3700.5 | TT&C |
| **24D** | 36.0 | 4180.0 | Service Link |
| **16D** | 36.0 | 4020.0 | Service Link |
| **04D** | 36.0 | 3780.0 | Service Link |
| **02D** | 36.0 | 3740.0 | Service Link |
| **01D** | 36.0 | 3720.0 | Service Link |
| **03D** | 36.0 | 3760.0 | Service Link |
| **05D** | 36.0 | 3800.0 | Service Link |
| **12D** | 36.0 | 3940.0 | Service Link |
| **21D** | 36.0 | 4120.0 | Service Link |
| **22D** | 36.0 | 4140.0 | Service Link |
| **23D** | 36.0 | 4160.0 | Service Link |
| **17D** | 36.0 | 4040.0 | Service Link |
| **14D** | 36.0 | 3980.0 | Service Link |
| **15D** | 36.0 | 4000.0 | Service Link |
| **13D** | 36.0 | 3960.0 | Service Link |
| **06D** | 36.0 | 3820.0 | Service Link |
| **07D** | 36.0 | 3840.0 | Service Link |
| **18D** | 36.0 | 4060.0 | Service Link |
| **19D** | 36.0 | 4080.0 | Service Link |
| **09D** | 36.0 | 3880.0 | Service Link |

| | | | |
|---|---|---|---|
| **10D** | 36.0 | 3900.0 | Service Link |
| **11D** | 36.0 | 3920.0 | Service Link |

## Certification Questions

| Question | Response |
| --- | --- |
| Are the applicable service area coverage requirements of 25.143(b)(2)(ii) and (iii), or 25.144(a)(3)(i), or 25.145(c)(1) and (2), or 25.146(i)(1) and (2), or 25.148(c), or 25.225 met? | N/A |
| Are the applicable frequency tolerances of 25.202(e) and out-of-band emission limits of 25.202(f)(1),(2), and (3) met? | Yes |
| Are the cessation of emissions requirements of 25.207 met? | Yes |
| Are the applicable power-flux-density limits of 25.208 met, and is the appropriate technical showing provided within the application? | 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 |
|---|---|---|---|---|
| AMC-11 ARH GtoT -2to-20.gxt | ARH | GSO Antenna Gain Contour Data | GXT file (*.gxt) | North America |
| AMC-11 ARV GtoT -2to-20.gxt | ARV | GSO Antenna Gain Contour Data | GXT file (*.gxt) | North America |
| AMC-11 ATH EIRP -2to-20.gxt | ATH | GSO Antenna Gain Contour Data | GXT file (*.gxt) | |
| AMC-11 ATV EIRP -2to-20.gxt | ATV | GSO Antenna Gain Contour Data | GXT file (*.gxt) | North America |