



312 File Number: **SATMOD2017030100025**

Filing Description

Question	Response
Description	This Schedule S is submitted in support of the modification application of SES Americom, Inc. seeking authority for the re-orientation of the Ka-band transponders on AMC-16 at 85W.L.

Satellite Information

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	AMC-16
Estimated Lifetime of Satellite(s) From Date of Launch	17 Years
Will the space station(s) operate on a Common Carrier basis?	No

Operating Frequency Bands (10)

Nature of service	Description	Frequency Band (s)	Mode Type
Direct-to-Home in the Fixed-Satellite Service		19700.0 MHz -20200.0 MHz	Transmit
Fixed-Satellite Service		19700.0 MHz -20200.0 MHz	Transmit
Direct-to-Home in the Fixed-Satellite Service		29500.0 MHz -30000.0 MHz	Receive
Fixed-Satellite Service		29500.0 MHz -30000.0 MHz	Receive
Direct-to-Home in the Fixed-Satellite Service		28400.0 MHz -28600.0 MHz	Receive
Fixed-Satellite Service		28400.0 MHz -28600.0 MHz	Receive
Fixed-Satellite Service		18580.0 MHz -18800.0 MHz	Transmit
Direct-to-Home in the Fixed-Satellite Service		18580.0 MHz -18800.0 MHz	Transmit
Fixed-Satellite Service		14000.0 MHz -14500.0 MHz	Receive
Direct-to-Home in the Fixed-Satellite Service		11700.0 MHz -12200.0 MHz	Transmit

Orbital Information For Geostationary Satellites

Section	Question	Response
Orbital Longitude Information	Orbital Longitude	85.0 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	0.11 degrees
	Pitch	0.09 degrees
	Yaw	0.0 degrees

Receiving Beams 1:

Question	Response
Beam ID	NALH
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.15 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	5.98 dB/K
Min. Saturation Flux Density	-98.98 dBW/m2
Max. Saturation Flux Density	-80.98 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Continental United States, Alaska, Hawaii, Caribbean, Mexico, Canada

Receiving Beams 2:

Question	Response
Beam ID	NALV
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.15 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	6.06 dB/K
Min. Saturation Flux Density	-99.06 dBW/m2
Max. Saturation Flux Density	-81.06 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Continental United States, Alaska, Hawaii, part of Caribbean, Canada

Receiving Beams 3:

Question	Response
Beam ID	2AU
Receive Beam Frequency	29500.0 MHz -30000.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.15 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	16.82 dB/K
Min. Saturation Flux Density	-116.3 dBW/m2
Max. Saturation Flux Density	-93.9 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Continental United States, Alaska, Hawaii, part of Caribbean, Canada

Receiving Beams 4:

Question	Response
Beam ID	TC1
Receive Beam Frequency	14001.1 MHz -14001.9 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.15 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	0.0 dB/K
Min. Saturation Flux Density	-1.0 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Continental United States, Alaska, Hawaii, part of Caribbean, Canada

Receiving Beams 5:

Question	Response
Beam ID	1AU
Receive Beam Frequency	28400.0 MHz -28600.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.15 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	16.82 dB/K
Min. Saturation Flux Density	-116.3 dBW/m ²
Max. Saturation Flux Density	-93.9 dBW/m ²
Co- or Cross Polar Mode	C
Service Area Description	Continental United States, Alaska, Hawaii, part of Caribbean, Canada

Receiving Channels (37)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
Ka3	125.0	29562.5	Service Link
TC1	0.8	14001.5	TT&C
Ka8	125.0	29812.5	Service Link
Ka6	125.0	29687.5	Service Link
Ka1	125.0	28500.5	Service Link
Ka9	125.0	29812.5	Service Link
Ka4	125.0	29562.5	Service Link
Ka11	125.0	29937.5	Service Link
Ka12	125.0	29937.5	Service Link
Ka10	125.0	29812.5	Service Link
Ka7	125.0	29687.5	Service Link
Ka5	125.0	29562.5	Service Link
Ka2	125.0	28500.5	Service Link
KU11	36.0	14220.0	Service Link
KU10	36.0	14200.0	Service Link
KU1	36.0	14020.0	Service Link
KU18	36.0	14360.0	Service Link
KU19	36.0	14380.0	Service Link
KU2	36.0	14040.0	Service Link
KU20	36.0	14400.0	Service Link
KU21	36.0	14420.0	Service Link
KU22	36.0	14440.0	Service Link
KU23	36.0	14460.0	Service Link
KU24	36.0	14480.0	Service Link

KU3	36.0	14060.0	Service Link
KU17	36.0	14340.0	Service Link
KU16	36.0	14320.0	Service Link
KU15	36.0	14300.0	Service Link
KU14	36.0	14280.0	Service Link
KU13	36.0	14260.0	Service Link
KU12	36.0	14240.0	Service Link
KU4	36.0	14080.0	Service Link
KU5	36.0	14100.0	Service Link
KU6	36.0	14120.0	Service Link
KU7	36.0	14140.0	Service Link
KU8	36.0	14160.0	Service Link
KU9	36.0	14180.0	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	NATH
Transmit Beam Frequency	11700.0 MHz -12200.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.15 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	53.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Continental United States, Alaska, Hawaii, part of Caribbean, Canada

Max. Power Flux Density

Information not provided.

Transmitting Beams 2:

Question	Response
Beam ID	NATV
Transmit Beam Frequency	11700.0 MHz -12200.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-22.56 dBW/Hz
Max. Transmit EIRP	53.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Continental United States, Alaska, Hawaii, part of Caribbean, Canada

Max. Power Flux Density

Information not provided.

Transmitting Beams 3:

Question	Response
Beam ID	1BD
Transmit Beam Frequency	18580.0 MHz -18800.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-18.99 dBW/Hz
Max. Transmit EIRP	61.97 dBW
Co- or Cross Polar Mode	C
Service Area Description	Continental United States, Alaska, Hawaii, part of Caribbean, Canada

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0	-137.8	-135.7	-134.0	-129.7	-124.8	-120.6
MHz						

Transmitting Beams 4:

Question	Response
Beam ID	TM1
Transmit Beam Frequency	11700.425 MHz -11701.075 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-42.43 dBW/Hz
Max. Transmit EIRP	15.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Continental United States, Alaska, Hawaii, part of Caribbean, Canada

Max. Power Flux Density

Information not provided.

Transmitting Beams 5:

Question	Response
Beam ID	TM2
Transmit Beam Frequency	12198.925 MHz -12199.575 MHz

Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-42.43 dBW/Hz
Max. Transmit EIRP	15.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Continental United States, Alaska, Hawaii, part of Caribbean, Canada

Max. Power Flux Density

Information not provided.

Transmitting Beams 6:

Question	Response
Beam ID	TM3
Transmit Beam Frequency	18583.675 MHz -18584.325 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-42.43 dBW/Hz

Max. Transmit EIRP	15.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Continental United States, Alaska, Hawaii, part of Caribbean, Canada

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-143.7	-143.7	-143.7	-143.7	-143.7	-143.7

Transmitting Beams 7:

Question	Response
Beam ID	2BD
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-18.99 dBW/Hz
Max. Transmit EIRP	61.97 dBW
Co- or Cross Polar Mode	C
Service Area Description	Continental United States, Alaska, Hawaii, part of Caribbean, Canada

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m ²)	(dBW/m ²)	(dBW/m ²)	(dBW/m ²)	(dBW/m ²)	(dBW/m ²)
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-137.8	-135.7	-134.0	-129.7	-124.8	-120.6

Transmitting Channels (39)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
Ka7	125.0	19887.5	Service Link
Ka9	125.0	20012.5	Service Link
Ka2	125.0	18700.5	Service Link
Ka12	125.0	20137.5	Service Link
TM2	0.65	12199.25	TT&C
TM1	0.65	11700.75	TT&C
TM3	0.65	18584.0	TT&C
Ka4	125.0	19762.5	Service Link
KU17	36.0	12040.0	Service Link
Ka5	125.0	19762.5	Service Link
Ka10	125.0	20012.5	Service Link
KU16	36.0	12020.0	Service Link
Ka8	125.0	20012.5	Service Link
Ka6	125.0	19887.5	Service Link
Ka3	125.0	19762.5	Service Link
Ka1	125.0	18700.5	Service Link
Ka11	125.0	20137.5	Service Link
KU1	36.0	11720.0	Service Link
KU15	36.0	12000.0	Service Link
KU24	36.0	12180.0	Service Link
KU23	36.0	12160.0	Service Link
KU22	36.0	12140.0	Service Link
KU21	36.0	12120.0	Service Link
KU20	36.0	12100.0	Service Link

KU19	36.0	12080.0	Service Link
KU18	36.0	12060.0	Service Link
KU10	36.0	11900.0	Service Link
KU11	36.0	11920.0	Service Link
KU12	36.0	11940.0	Service Link
KU13	36.0	11960.0	Service Link
KU14	36.0	11980.0	Service Link
KU2	36.0	11740.0	Service Link
KU3	36.0	11760.0	Service Link
KU4	36.0	11780.0	Service Link
KU5	36.0	11800.0	Service Link
KU6	36.0	11820.0	Service Link
KU7	36.0	11840.0	Service Link
KU8	36.0	11860.0	Service Link
KU9	36.0	11880.0	Service Link

Certification Questions

Question	Response
<p>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?</p>	<p>N/A</p>
<p>Are the applicable frequency tolerances of 25.202(e) and out-of-band emission limits of 25.202(f)(1),(2), and (3) met?</p>	<p>Yes</p>
<p>Are the cessation of emissions requirements of 25.207 met?</p>	<p>Yes</p>
<p>Are the applicable power-flux-density limits of 25.208 met, and is the appropriate technical showing provided within the application?</p>	<p>Yes</p>
<p>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?</p>	<p>N/A</p>
<p>Are the applicable full-frequency-reuse requirements of 25.210 met?</p>	<p>Yes</p>
<p>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)?</p>	

Attachments

File Name	Beam	Field	Attachment Type	Description
1A GT.gxt	1AU	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
KURV.gxt	NALV	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
KURH.gxt	NALH	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
1B EIRP.gxt	1BD	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
3A EIRP.gxt	2BD	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
4C GT.gxt	2AU	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
KURH.gxt	NALH	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
KURV.gxt	NALV	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
KUTH.gxt	NATH	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
KUTV.gxt	NATV	GSO Antenna Gain Contour Data	GXT file (*.gxt)	