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

Federal Communications Commission

312 File Number: **SATMOD2018030500019**

Filing Description

Question	Response
Description	Intelsat 9 move to 66.15EL

Satellite Information

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	Intelsat 9
Estimated Lifetime of Satellite(s) From Date of Launch	20 Years
Will the space station(s) operate on a Common Carrier basis?	No

Operating Frequency Bands (5)

Nature of service	Description	Frequency Band(s)	Mode Type
Fixed-Satellite Service		5925.0 MHz -6425.0 MHz	Receive
Fixed-Satellite Service		3700.0 MHz -4200.0 MHz	Transmit
Fixed-Satellite Service		14000.0 MHz -14500.0 MHz	Receive
Fixed-Satellite Service		11700.0 MHz -12200.0 MHz	Transmit
Fixed-Satellite Service		11450.0 MHz -11700.0 MHz	Transmit

Orbital Information For Geostationary Satellites

Section	Question	Response
Orbital Longitude Information	Orbital Longitude	66.0 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	4.0 degrees
Antenna Axis Attitude Accuracy	Roll	0.1 degrees
	Pitch	0.1 degrees
	Yaw	0.1 degrees

Receiving Beams 1:

Question	Response
Beam ID	AMVU
Receive Beam Frequency	5925.0 MHz -6425.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	-0.8 dB/K
Min. Saturation Flux Density	-93.3 dBW/m2
Max. Saturation Flux Density	-77.3 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Central Africa

Receiving Beams 2:

Question	Response
Beam ID	CMD
Receive Beam Frequency	14494.0 MHz -14495.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	-99.0 dB/K
Min. Saturation Flux Density	-103.1 dBW/m2
Max. Saturation Flux Density	-103.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global Gain contour attachment not provided pursuant to Section 25.114(c)(4)(vi)(A) of the FCC rules

Receiving Beams 3:

Question	Response
Beam ID	AMHU
Receive Beam Frequency	5925.0 MHz -6425.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	-0.2 dB/K
Min. Saturation Flux Density	-94.8 dBW/m2
Max. Saturation Flux Density	-78.8 dBW/m2
Co- or Cross Polar Mode	C

Service Area Description	Central Africa

Receiving Beams 4:

Question	Response
Beam ID	CMDP
Receive Beam Frequency	14000.0 MHz -14001.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-99.0 dB/K
Min. Saturation Flux Density	-102.3 dBW/m2
Max. Saturation Flux Density	-102.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global Gain contour attachment not provided pursuant to Section 25.114(c)(4)(vi)(A) of the FCC rules

Receiving Beams 5:

Question	Response
Beam ID	CMDB
Receive Beam Frequency	14494.0 MHz -14495.0 MHz
Beam Type	Fixed
Polarization	V

Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	-99.0 dB/K
Min. Saturation Flux Density	-90.1 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global Gain contour attachment not provided pursuant to Section 25.114(c)(4)(vi)(A) of the FCC rules

Receiving Beams 6:

Question	Response
Beam ID	BRHU
Receive Beam Frequency	14000.0 MHz -14260.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	3.3 dB/K

Min. Saturation Flux Density	-96.8 dBW/m2
Max. Saturation Flux Density	-80.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Indian Ocean

Receiving Beams 7:

Question	Response
Beam ID	AEVU
Receive Beam Frequency	14000.0 MHz -14240.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	0.0 dB/K
Min. Saturation Flux Density	-93.1 dBW/m2
Max. Saturation Flux Density	-77.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Africa & China

Receiving Beams 8:

Question	Response
Beam ID	MXHU
Receive Beam Frequency	14260.0 MHz -14500.0 MHz

Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	8.4 dB/K
Min. Saturation Flux Density	-101.6 dBW/m2
Max. Saturation Flux Density	-85.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	North Africa

Receiving Beams 9:

Question	Response
Beam ID	MXVU
Receive Beam Frequency	14240.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	8.6 dB/K
Min. Saturation Flux Density	-102.2 dBW/m2

Max. Saturation Flux Density	-86.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	North Africa

Receiving Channels (51)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
CU03	36.0	5985.0	Service Link
CU05	36.0	6025.0	Service Link
CU07	36.0	6065.0	Service Link
CU17	36.0	6265.0	Service Link
CU23	36.0	6385.0	Service Link
KU08	36.0	14160.0	Service Link
KU09	36.0	14180.0	Service Link
KU16	36.0	14320.0	Service Link
KU18	36.0	14360.0	Service Link
CMD1	1.0	14494.5	TT&C
KU24	36.0	14480.0	Service Link
KU05	36.0	14100.0	Service Link
CU01	36.0	5945.0	Service Link
CU14	36.0	6185.0	Service Link
KU12	36.0	14240.0	Service Link
KU21	36.0	14420.0	Service Link
CU12	36.0	6145.0	Service Link
CU16	36.0	6225.0	Service Link
CU10	36.0	6105.0	Service Link
CU22	36.0	6345.0	Service Link
CU19	36.0	6305.0	Service Link
CU02	36.0	5945.0	Service Link
CU21	36.0	6345.0	Service Link
KU01	36.0	14020.0	Service Link

KU03	36.0	14060.0	Service Link
CU11	36.0	6145.0	Service Link
KU23	36.0	14460.0	Service Link
KU13	36.0	14260.0	Service Link
KU14	36.0	14280.0	Service Link
KU17	36.0	14340.0	Service Link
CU08	36.0	6065.0	Service Link
CU04	36.0	5985.0	Service Link
CU06	36.0	6025.0	Service Link
CMD3	1.0	14494.5	TT&C
CMD2	1.0	14000.5	TT&C
KU15	36.0	14300.0	Service Link
CU13	36.0	6185.0	Service Link
CU15	36.0	6225.0	Service Link
KU20	36.0	14400.0	Service Link
KU19	36.0	14380.0	Service Link
CU20	36.0	6305.0	Service Link
KU22	36.0	14440.0	Service Link
KU04	36.0	14080.0	Service Link
CU18	36.0	6265.0	Service Link
KU10	36.0	14200.0	Service Link
KU11	36.0	14220.0	Service Link
CU09	36.0	6105.0	Service Link
KU06	36.0	14120.0	Service Link
CU24	36.0	6385.0	Service Link
KU02	36.0	14040.0	Service Link

KU07	36.0	14140.0	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	AMHD
Transmit Beam Frequency	3700.0 MHz -4200.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-31.6 dBW/Hz
Max. Transmit EIRP	42.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Central Africa

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	-158.8	-158.7	-158.6	-158.5	-158.4	-157.6

Transmitting Beams 2:

Question	Response
Beam ID	TLM
Transmit Beam Frequency	11700.0 MHz -11702.5 MHz

Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-47.8 dBW/Hz
Max. Transmit EIRP	9.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global Gain contour attachment not provided pursuant to Section 25.114(c)(4)(vi)(A) of the FCC rules

Max. Power Flux Density

Information not provided.

Transmitting Beams 3:

Question	Response
Beam ID	TLMP
Transmit Beam Frequency	11700.0 MHz -11702.5 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-42.7 dBW/Hz
Max. Transmit EIRP	14.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global Gain contour attachment not provided pursuant to Section 25.114(c)(4)(vi)(A) of the FCC rules

Max. Power Flux Density

Information not provided.

Transmitting Beams 4:

Question	Response
Beam ID	AMVD
Transmit Beam Frequency	3700.0 MHz -4200.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-31.5 dBW/Hz
Max. Transmit EIRP	42.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	Central Africa

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	-158.7	-158.6	-158.5	-158.4	-158.3	-157.5

Transmitting Beams 5:

Question	Response
Beam ID	AEHD
Transmit Beam Frequency	11450.0 MHz -11700.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-24.7 dBW/Hz
Max. Transmit EIRP	49.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Africa & China

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	-151.9	-151.8	-151.7	-151.6	-151.5	-150.7

Transmitting Beams 6:

Question	Response
Beam ID	TLMB
Transmit Beam Frequency	11700.0 MHz -11702.5 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-46.3 dBW/Hz
Max. Transmit EIRP	10.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global Gain contour attachment not provided pursuant to Section 25.114(c)(4)(vi)(A) of the FCC rules

Max. Power Flux Density

Information not provided.

Transmitting Beams 7:

Question	Response
Beam ID	UPCH
Transmit Beam Frequency	11698.987 MHz -11699.013 MHz
Beam Type	Fixed

Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.9 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-30.8 dBW/Hz
Max. Transmit EIRP	13.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global Gain contour attachment not provided pursuant to Section 25.114(c)(4)(vi)(A) of the FCC rules

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	-158.0	-157.9	-157.8	-157.7	-157.6	-156.8

Transmitting Beams 8:

Question	Response
Beam ID	UPCV
Transmit Beam Frequency	11702.987 MHz -11703.013 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees

Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-31.7 dBW/Hz
Max. Transmit EIRP	12.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global Gain contour attachment not provided pursuant to Section 25.114(c)(4)(vi)(A) of the FCC rules

Max. Power Flux Density

Information not provided.

Transmitting Beams 9:

Question	Response
Beam ID	BRVD
Transmit Beam Frequency	11700.0 MHz -11960.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-26.2 dBW/Hz
Max. Transmit EIRP	48.1 dBW
Co- or Cross Polar Mode	C

Service Area Description	Indian Ocean

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	-151.9	-151.8	-151.7	-151.6	-151.5	-150.7

Transmitting Beams 10:

Question	Response
Beam ID	MXHD
Transmit Beam Frequency	11900.0 MHz -12200.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-20.1 dBW/Hz
Max. Transmit EIRP	54.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	North Africa

Max. Power Flux Density

Information not provided.

Transmitting

Beams 11:

Question	Response
Beam ID	MXVD
Transmit Beam Frequency	11900.0 MHz -12200.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-20.1 dBW/Hz
Max. Transmit EIRP	54.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	North Africa

Max. Power Flux Density

Information not provided.

Transmitting Channels (52)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
CD09	36.0	3880.0	Service Link
CD10	36.0	3880.0	Service Link
KD04	36.0	11780.0	Service Link
CD07	36.0	3840.0	Service Link
CD05	36.0	3800.0	Service Link
CD06	36.0	3800.0	Service Link
CD03	36.0	3760.0	Service Link
CD04	36.0	3760.0	Service Link
CD01	36.0	3720.0	Service Link
CD02	36.0	3720.0	Service Link
CD23	36.0	4160.0	Service Link
CD12	36.0	3920.0	Service Link
CD22	36.0	4120.0	Service Link
ULP2	0.025	11703.0	TT&C
ULP1	0.025	11699.0	TT&C
TLM2	0.5	11702.0	TT&C
TLM1	0.5	11700.5	TT&C
KD15	36.0	12000.0	Service Link
KD14	36.0	11980.0	Service Link
KD10	36.0	11900.0	Service Link
KD09	36.0	11637.0	Service Link
KD08	36.0	11860.0	Service Link
KD06	36.0	11820.0	Service Link
KD13	36.0	11960.0	Service Link

KD12	36.0	11940.0	Service Link
KD11	36.0	11677.0	Service Link
CD24	36.0	4160.0	Service Link
KD01	36.0	11477.0	Service Link
CD17	36.0	4040.0	Service Link
CD18	36.0	4040.0	Service Link
CD19	36.0	4080.0	Service Link
CD20	36.0	4080.0	Service Link
CD21	36.0	4120.0	Service Link
KD03	36.0	11517.0	Service Link
CD08	36.0	3840.0	Service Link
KD07	36.0	11597.0	Service Link
KD23	36.0	12160.0	Service Link
CD16	36.0	4000.0	Service Link
KD05	36.0	11557.0	Service Link
KD16	36.0	12020.0	Service Link
CD15	36.0	4000.0	Service Link
KD24	36.0	12180.0	Service Link
CD13	36.0	3960.0	Service Link
CD14	36.0	3960.0	Service Link
CD11	36.0	3920.0	Service Link
KD22	36.0	12140.0	Service Link
KD21	36.0	12120.0	Service Link
KD20	36.0	12100.0	Service Link
KD19	36.0	12080.0	Service Link
KD18	36.0	12060.0	Service Link

KD17	36.0	12040.0	Service Link
KD02	36.0	11740.0	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
IS-9 at 66.15el beams.mdb		GSO Antenna Gain Contour Data	GIMS file (*.mdb)	Beam Diagrams for Intelsat 9 at 66.15EL