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

Federal Communications Commission

312 File Number: **SATMOD2018050100036**

Filing Description

Question	Response
Description	Intelsat 5 move to 137 W.L.

Satellite Information

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	Intelsat 5
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 (4)

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		11450.0 MHz -11700.0 MHz	Transmit
Fixed-Satellite Service		13750.0 MHz -14500.0 MHz	Receive

Orbital Information For Geostationary Satellites

Section	Question	Response
Orbital Longitude Information	Orbital Longitude	137.0 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	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	CMDB
Receive Beam Frequency	14497.5 MHz -14498.5 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
G/T at Max. Gain Point	-12.6 dB/K
Min. Saturation Flux Density	-104.8 dBW/m2
Max. Saturation Flux Density	-89.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Command

Receiving Beams 2:

Question	Response
Beam ID	CMDG
Receive Beam Frequency	14497.5 MHz -14498.5 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
G/T at Max. Gain Point	-12.6 dB/K
Min. Saturation Flux Density	-104.8 dBW/m2
Max. Saturation Flux Density	-89.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Command

Receiving Beams 3:

Question	Response
Beam ID	CMDP
Receive Beam Frequency	13998.5 MHz -13999.5 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
G/T at Max. Gain Point	-25.3 dB/K
Min. Saturation Flux Density	-92.5 dBW/m2
Max. Saturation Flux Density	-77.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Command

Receiving

Beams 4:

Question	Response
Beam ID	PCHU
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	0.6 dB/K
Min. Saturation Flux Density	-96.6 dBW/m2
Max. Saturation Flux Density	-81.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Asia Pacific and Western United States

Receiving Beams 5:

Question	Response
Beam ID	PCVU
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	0.2 dB/K
Min. Saturation Flux Density	-96.2 dBW/m2
Max. Saturation Flux Density	-81.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Asia Pacific and Western United States

Receiving Beams 6:

Question	Response
Beam ID	PKHV
Receive Beam Frequency	14000.0 MHz -14250.0 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	90.0 degrees
G/T at Max. Gain Point	-12.0 dB/K
Min. Saturation Flux Density	-91.9 dBW/m2
Max. Saturation Flux Density	-76.9 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Asia Pacific and Western United States

Receiving Channels (20)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
CMD1	1.0	13999.0	TT&C
CMD2	1.0	14498.0	TT&C
CU01	36.0	5945.0	Service Link
CU02	36.0	5985.0	Service Link
CU03	36.0	6025.0	Service Link
CU04	36.0	6065.0	Service Link
CU05	36.0	6105.0	Service Link
CU06	36.0	6145.0	Service Link
CU07	36.0	6185.0	Service Link
CU08	36.0	6225.0	Service Link
CU09	36.0	6265.0	Service Link
CU10	36.0	6305.0	Service Link
CU11	36.0	6345.0	Service Link
CU12	36.0	6385.0	Service Link
KU01	36.0	14019.0	Service Link
KU02	36.0	14060.0	Service Link
KU03	36.0	14101.0	Service Link
KU04	36.0	14142.0	Service Link
KU05	36.0	14183.0	Service Link
KU06	36.0	14224.0	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	PCHD
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	-33.96 dBW/Hz
Max. Transmit EIRP	41.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Asia Pacific and Western United States

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	-161.2	-161.1	-161.0	-160.9	-160.8	-160.0

Transmitting Beams 2:

Question	Response
Beam ID	PCVD
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	-34.56 dBW/Hz
Max. Transmit EIRP	41.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Asia Pacific and Western United States

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	-161.8	-161.7	-161.6	-161.5	-161.4	-160.6

Transmitting Beams 3:

Question	Response
Beam ID	TLMB
Transmit Beam Frequency	11450.75 MHz -11452.25 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	-47.99 dBW/Hz
Max. Transmit EIRP	9.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Telemetry

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	-175.2	-175.1	-175.0	-174.9	-174.8	-174.8

Transmitting Beams 4:

Question	Response
Beam ID	TLMG
Transmit Beam Frequency	11450.75 MHz -11452.25 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	-47.79 dBW/Hz

Max. Transmit EIRP	9.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	Telemetry

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	-175.0	-174.9	-174.8	-174.7	-174.6	-173.8

Transmitting Beams 5:

Question	Response
Beam ID	TLMP
Transmit Beam Frequency	11450.75 MHz -11452.25 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	-46.79 dBW/Hz
Max. Transmit EIRP	10.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	Telemetry

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	-174.0	-173.9	-173.8	-173.7	-173.6	-173.6

Transmitting Beams 6:

Question	Response
Beam ID	UPCL
Transmit Beam Frequency	11453.987 MHz -11454.013 MHz
Beam Type	Fixed
Polarization	LHCP
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	-45.59 dBW/Hz
Max. Transmit EIRP	11.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	Uplink Power Control

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	-163.2	-163.1	-163.0	-162.9	-162.8	-162.8

Transmitting Beams 7:

Question	Response
Beam ID	UPCR
Transmit Beam Frequency	11453.987 MHz -11454.013 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	-45.59 dBW/Hz
Max. Transmit EIRP	11.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	Uplink Power Control

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	-159.8	-159.7	-159.6	-159.5	-159.4	-159.4

Transmitting Beams 8:

Question	Response
Beam ID	S1VD
Transmit Beam Frequency	11450.0 MHz -11700.0 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	-22.96 dBW/Hz
Max. Transmit EIRP	52.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Steerable

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	-150.2	-150.1	-150.0	-149.9	-149.8	-149.0

Transmitting Channels (21)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
KD01	36.0	11476.0	Service Link
KD02	36.0	11517.0	Service Link
KD03	36.0	11558.0	Service Link
KD04	36.0	11599.0	Service Link
KD05	36.0	11640.0	Service Link
KD06	36.0	11681.0	Service Link
CD01	36.0	3720.0	Service Link
CD02	36.0	3760.0	Service Link
CD03	36.0	3800.0	Service Link
CD04	36.0	3840.0	Service Link
CD05	36.0	3880.0	Service Link
CD06	36.0	3920.0	Service Link
CD07	36.0	3960.0	Service Link
CD08	36.0	4000.0	Service Link
CD09	36.0	4040.0	Service Link
CD10	36.0	4080.0	Service Link
CD11	36.0	4120.0	Service Link
CD12	36.0	4160.0	Service Link
TLM1	0.5	11451.0	TT&C
TLM2	0.5	11452.0	TT&C
UPC1	0.025	11454.0	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?	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
is5_137w.mdb		GSO Antenna Gain Contour Data	GIMS file (*.mdb)	IS5 at 137W.L. beams