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

Federal Communications Commission

312 File Number: **SATMOD2018110500082**

Filing Description

Question	Response
Description	Galaxy 13 at 127 W.L. Renewal

Satellite Information

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	Galaxy 13
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 (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	127.0 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	NAHU
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	-10.0 dB/K
Min. Saturation Flux Density	-101.0 dBW/m2
Max. Saturation Flux Density	-71.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	the United States including Alaska and Hawaii

Receiving Beams 2:

Question	Response
Beam ID	NAVU
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	-10.0 dB/K
Min. Saturation Flux Density	-101.0 dBW/m2
Max. Saturation Flux Density	-71.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The United States including Alaska and Hawaii

Receiving Beams 3:

Question	Response
Beam ID	CMRU
Receive Beam Frequency	5926.0 MHz -5927.5 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	6.0 dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	13.0 dB/K
Min. Saturation Flux Density	-85.0 dBW/m2
Max. Saturation Flux Density	-70.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 4:

Question	Response
Beam ID	CMHU
Receive Beam Frequency	6420.0 MHz -6421.5 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	6.0 dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	13.0 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-95.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Channels (26)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
CU20	36.0	6325.0	Service Link
CU19	36.0	6305.0	Service Link
CU18	36.0	6285.0	Service Link
CMD2	1.5	6420.75	TT&C
CMD1	1.5	5926.75	TT&C
CU01	36.0	5945.0	Service Link
CU02	36.0	5965.0	Service Link
CU03	36.0	5985.0	Service Link
CU05	36.0	6025.0	Service Link
CU06	36.0	6045.0	Service Link
CU07	36.0	6065.0	Service Link
CU08	36.0	6085.0	Service Link
CU09	36.0	6105.0	Service Link
CU10	36.0	6125.0	Feeder Link
CU11	36.0	6145.0	Service Link
CU12	36.0	6165.0	Service Link
CU13	36.0	6185.0	Service Link
CU14	36.0	6205.0	Service Link
CU15	36.0	6225.0	Service Link
CU16	36.0	6245.0	Service Link
CU17	36.0	6265.0	Service Link
CU21	36.0	6345.0	Service Link
CU24	36.0	6405.0	Service Link
CU22	36.0	6365.0	Service Link

CU23	36.0	6385.0	Service Link
CU04	36.0	6005.0	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	NAHD
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	-35.5 dBW/Hz
Max. Transmit EIRP	40.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	The United States, Alaska and Hawaii

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	-162.8	-162.6	-162.5	-162.4	-162.3	-161.5

Transmitting Beams 2:

Question	Response
Beam ID	NAVD
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	-35.5 dBW/Hz
Max. Transmit EIRP	40.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	The United States, Alaska and Hawaii

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	-162.8	-162.6	-162.5	-162.4	-162.3	-161.5

Transmitting Beams 3:

Question	Response
Beam ID	T1VD
Transmit Beam Frequency	4198.0 MHz -4199.0 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	0.0 degrees
Max. Transmit EIRP Density	-49.95 dBW/Hz
Max. Transmit EIRP	10.05 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-162.8	-162.6	-162.5	-162.4	-162.3	-161.5

Transmitting Beams 4:

Question	Response
Beam ID	T1RD
Transmit Beam Frequency	4198.0 MHz -4199.0 MHz
Beam Type	Fixed
Polarization	RHCP
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	45.0 degrees
Max. Transmit EIRP Density	-49.95 dBW/Hz

Max. Transmit EIRP	10.05 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-162.8	-162.6	-162.5	-162.4	-162.3	-161.5

Transmitting Beams 5:

Question	Response
Beam ID	T2VD
Transmit Beam Frequency	4199.0 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	0.0 degrees
Max. Transmit EIRP Density	-49.95 dBW/Hz
Max. Transmit EIRP	10.05 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-162.8	-162.6	-162.5	-162.4	-162.3	-161.5

Transmitting Beams 6:

Question	Response
Beam ID	T2RD
Transmit Beam Frequency	4199.0 MHz -4200.0 MHz
Beam Type	Fixed
Polarization	RHCP
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	45.0 degrees
Max. Transmit EIRP Density	-49.95 dBW/Hz
Max. Transmit EIRP	10.05 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-162.8	-162.6	-162.5	-162.4	-162.3	-161.5

Transmitting Channels (25)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
TLM2	1.0	4199.5	TT&C
CD21	36.0	4120.0	Service Link
CD22	36.0	4140.0	Service Link
CD23	36.0	4160.0	Service Link
CD24	36.0	4180.0	Service Link
TLM1	1.0	4198.5	TT&C
CD20	36.0	4100.0	Service Link
CD19	36.0	4080.0	Service Link
CD18	36.0	4060.0	Service Link
CD17	36.0	4040.0	Service Link
CD16	36.0	4020.0	Service Link
CD15	36.0	4000.0	Service Link
CD14	36.0	3980.0	Service Link
CD13	36.0	3960.0	Service Link
CD12	36.0	3940.0	Service Link
CD11	36.0	3920.0	Service Link
CD10	36.0	3900.0	Service Link
CD09	36.0	3880.0	Service Link
CD08	36.0	3860.0	Service Link
CD06	36.0	3820.0	Service Link
CD05	36.0	3800.0	Service Link
CD04	36.0	3780.0	Service Link
CD03	36.0	3760.0	Service Link
CD02	36.0	3740.0	Service Link

CD01	36.0	3720.0	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
g13_127w.mdb		GSO Antenna Gain Contour Data	GIMS file (*.mdb)	GXT Files for G13 at 127WL