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

Federal Communications Commission

312 File Number: **SATMOD2021020500016**

Filing Description

Question	Response
Description	Galaxy 15 License renewal at 133 W.L/ 227 E.L

Satellite Information

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	Galaxy 15
Estimated Lifetime of Satellite(s) From Date of Launch	15 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		5925.0 MHz -6425.0 MHz	Receive
Fixed-Satellite Service		3700.0 MHz -4200.15 MHz	Transmit

Orbital Information For Geostationary Satellites

Section	Question	Response
Orbital Longitude Information	Orbital Longitude	133.0 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	0.0 degrees
Antenna Axis Attitude Accuracy	Roll	0.1 degrees
	Pitch	0.1 degrees
	Yaw	0.1 degrees

Receiving Beams 1:

Question	Response
Beam ID	CAHU
Receive Beam Frequency	5925.0 MHz -6425.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	31.12 dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	Yes
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	4.0 dB/K
Min. Saturation Flux Density	-117.0 dBW/m2
Max. Saturation Flux Density	-82.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	CONUS H Up

Receiving Beams 2:

Question	Response
Beam ID	CAVU
Receive Beam Frequency	5925.0 MHz -6425.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	30.9 dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees

Polarization Switchable	Yes
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	4.0 dB/K
Min. Saturation Flux Density	-116.7 dBW/m2
Max. Saturation Flux Density	-81.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	CONUS V Up

Receiving Beams 3:

Question	Response
Beam ID	CMV1
Receive Beam Frequency	6420.0 MHz -6421.0 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	-99.0 dB/K
Min. Saturation Flux Density	-90.0 dBW/m2
Max. Saturation Flux Density	-89.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	TC DISH

Receiving

Beams 4:

Question	Response
Beam ID	CMR1
Receive Beam Frequency	6420.0 MHz -6421.0 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
G/T at Max. Gain Point	-99.0 dB/K
Min. Saturation Flux Density	-90.0 dBW/m2
Max. Saturation Flux Density	-89.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	TC OMNI and GLOBAL

Receiving Channels (25)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
CU18	36.0	6165.0	Service Link
CU17	36.0	6125.0	Service Link
CU16	36.0	6085.0	Service Link
CU15	36.0	6045.0	Service Link
CU14	36.0	6005.0	Service Link
CU13	36.0	5965.0	Service Link
CU06	36.0	6145.0	Service Link
CU24	36.0	6405.0	Service Link
CU23	36.0	6365.0	Service Link
CU22	36.0	6325.0	Service Link
CU21	36.0	6285.0	Service Link
CU20	36.0	6245.0	Service Link
CU19	36.0	6205.0	Service Link
CMV1	1.0	6420.5	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
CU12	36.0	6385.0	Service Link
CU11	36.0	6345.0	Service Link
CU10	36.0	6305.0	Service Link
CU09	36.0	6265.0	Service Link
CU08	36.0	6225.0	Service Link

CU07	36.0	6185.0	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	CAHD
Transmit Beam Frequency	3700.0 MHz -4200.15 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	28.19 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	-33.0 dBW/Hz
Max. Transmit EIRP	42.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	CONUS H Dn

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	-160.2	-160.1	-160.0	-159.9	-159.8	-159.0

Transmitting Beams 2:

Question	Response
Beam ID	CAVD
Transmit Beam Frequency	3700.0 MHz -4200.15 MHz

Beam Type	Fixed
Polarization	V
Peak Gain	28.09 dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	Yes
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-33.2 dBW/Hz
Max. Transmit EIRP	42.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	CONUS V Dn

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	-160.4	-160.3	-160.2	-160.1	-160.0	-159.2

Transmitting Beams 3:

Question	Response
Beam ID	TLME
Transmit Beam Frequency	4197.75 MHz -4198.25 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	-39.6 dBW/Hz
Max. Transmit EIRP	17.43 dBW
Co- or Cross Polar Mode	C
Service Area Description	TM H DISH

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	-166.8	-166.7	-166.6	-166.5	-166.4	-165.6

Transmitting Beams 4:

Question	Response
Beam ID	TLMF
Transmit Beam Frequency	4197.75 MHz -4198.25 MHz
Beam Type	Fixed
Polarization	LHCP
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	-39.6 dBW/Hz

Max. Transmit EIRP	17.43 dBW
Co- or Cross Polar Mode	C
Service Area Description	TM OMNI LHCP

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	-166.8	-166.7	-166.6	-166.5	-166.4	-165.6

Transmitting Beams 5:

Question	Response
Beam ID	TLMA
Transmit Beam Frequency	4199.625 MHz -4200.125 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	-39.6 dBW/Hz
Max. Transmit EIRP	17.43 dBW
Co- or Cross Polar Mode	C
Service Area Description	TM2 DISH H Dn

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	-166.8	-166.7	-166.6	-166.5	-166.4	-165.6

Transmitting Beams 6:

Question	Response
Beam ID	TLMB
Transmit Beam Frequency	4199.625 MHz -4200.125 MHz
Beam Type	Fixed
Polarization	LHCP
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	-39.6 dBW/Hz
Max. Transmit EIRP	17.43 dBW
Co- or Cross Polar Mode	C
Service Area Description	TM2 OMNI LCHP Dn

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	-166.8	-166.7	-116.6	-166.5	-166.4	-165.6

Transmitting Channels (26)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
CD14	3.6	3780.0	Service Link
CD15	36.0	3820.0	Service Link
CD16	36.0	3860.0	Service Link
CD17	36.0	3900.0	Service Link
CD18	36.0	3940.0	Service Link
CD19	36.0	3980.0	Service Link
CD20	36.0	4020.0	Service Link
CD21	36.0	4060.0	Service Link
CD22	36.0	4100.0	Service Link
TLMA	0.5	4198.0	TT&C
CD24	36.0	4180.0	Service Link
CD23	36.0	4140.0	Service Link
CD13	36.0	3740.0	Service Link
CD12	36.0	4160.0	Service Link
CD11	36.0	4120.0	Service Link
CD10	36.0	4080.0	Service Link
CD09	36.0	4040.0	Service Link
CD08	36.0	4000.0	Service Link
CD07	36.0	3960.0	Service Link
CD06	36.0	3920.0	Service Link
CD05	36.0	3880.0	Service Link
CD04	36.0	3840.0	Service Link
CD03	36.0	3800.0	Service Link
CD02	36.0	3760.0	Service Link

CD01	36.0	3720.0	Service Link
TLME	0.5	4199.875	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
g-15.mdb		GSO Antenna Gain Contour Data	GIMS file (*.mdb)	