



312 File Number: **SATMOD2022052300053**

Filing Description

Question	Response
Description	Galaxy -17 License extension

Satellite
Information

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	Galaxy -17
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		11200.0 MHz -12200.0 MHz	Transmit
Fixed-Satellite Service		14000.0 MHz -14500.0 MHz	Receive
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	91.0 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	CAHU
Receive Beam Frequency	5925.0 MHz -6425.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	32.08 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	5.4 dB/K
Min. Saturation Flux Density	-116.8 dBW/m2
Max. Saturation Flux Density	-69.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	This C band East reflector beam has a RPM RF of plus minus 2 degree Roll North South and plus minus 2 degree Pitch East West with Platform bias of plus minus 1 degree Roll NS, plus minus 2.5 degree Pitch EW

Receiving Beams 2:

Question	Response
Beam ID	CAVU
Receive Beam Frequency	5925.0 MHz -6425.0 MHz
Beam Type	Steerable
Polarization	V
Peak Gain	32.33 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	5.4 dB/K
Min. Saturation Flux Density	-117.0 dBW/m2
Max. Saturation Flux Density	-69.7 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	This C band East reflector beam has a RPM RF of plus minus 2 degree Roll North South and plus minus 2 degree Pitch East West with Platform bias of plus minus 1 degree Roll NS, plus minus2.5 degree Pitch EW

Receiving

Beams 3:

Question	Response
Beam ID	NKHU
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	33.66 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	7.1 dB/K
Min. Saturation Flux Density	-117.2 dBW/m2
Max. Saturation Flux Density	-69.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	the West Ku band uplink reflector is fixed to the Platform with bias of plus minus 1 degree Roll NS, plus minus 2.5 degree Pitch EW

Receiving Beams 4:

Question	Response
Beam ID	NKVU
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed

Polarization	V
Peak Gain	33.63 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	7.2 dB/K
Min. Saturation Flux Density	-116.5 dBW/m2
Max. Saturation Flux Density	-68.4 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	the West Ku band uplink reflector is fixed to the Platform with bias of plus minus 1 degree Roll NS, plus minus 2.5 degree Pitch EW

Receiving Beams 5:

Question	Response
Beam ID	CMD1
Receive Beam Frequency	5925.0 MHz -5926.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	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	-99.0 dB/K
Min. Saturation Flux Density	-81.0 dBW/m2
Max. Saturation Flux Density	-80.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	CM1 Horizontal

Receiving Beams 6:

Question	Response
Beam ID	CMD2
Receive Beam Frequency	5925.0 MHz -5926.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	Yes
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-99.0 dB/K
Min. Saturation Flux Density	-81.0 dBW/m2
Max. Saturation Flux Density	-80.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	CM1 LHCP

Receiving Beams 7:

Question	Response
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Beam ID	CMD3
Receive Beam Frequency	6424.0 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	Yes
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	-99.0 dB/K
Min. Saturation Flux Density	-81.0 dBW/m2
Max. Saturation Flux Density	-80.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	CM2 Vertical

Receiving Beams 8:

Question	Response
Beam ID	CMD4
Receive Beam Frequency	6424.0 MHz -6425.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	Yes

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-99.0 dB/K
Min. Saturation Flux Density	-81.0 dBW/m2
Max. Saturation Flux Density	-80.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	CMD2 RHCP

Receiving Channels (44)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
K23U	36.0	14460.0	Service Link
K03U	36.0	14060.0	Service Link
K05U	36.0	14100.0	Service Link
K07U	36.0	14140.0	Service Link
K24U	36.0	14480.0	Service Link
C21U	36.0	6345.0	Service Link
K08U	36.0	14160.0	Service Link
C12U	36.0	6165.0	Service Link
C10U	36.0	6125.0	Service Link
C08U	36.0	6085.0	Service Link
C06U	36.0	6045.0	Service Link
C04U	36.0	6005.0	Service Link
C02U	36.0	5965.0	Service Link
C13U	36.0	6185.0	Service Link
C11U	36.0	6145.0	Service Link
C09U	36.0	6105.0	Feeder Link
C07U	36.0	6065.0	Service Link
C05U	36.0	6025.0	Service Link
C03U	36.0	5985.0	Service Link
C01U	36.0	5945.0	Service Link
K01U	36.0	14020.0	Service Link
K09U	36.0	14180.0	Service Link
C14U	36.0	6205.0	Service Link
C15U	36.0	6225.0	Service Link

C16U	36.0	6245.0	Service Link
C17U	36.0	6265.0	Service Link
K10U	36.0	14200.0	Service Link
K06U	36.0	14120.0	Service Link
K04U	36.0	14080.0	Service Link
K21U	36.0	14420.0	Service Link
C22U	36.0	6365.0	Service Link
C19U	36.0	6305.0	Service Link
C18U	36.0	6285.0	Service Link
C20U	36.0	6325.0	Service Link
C23U	36.0	6385.0	Service Link
CM02	1.0	6424.5	TT&C
C24U	36.0	6405.0	Service Link
K02U	36.0	14040.0	Service Link
K11U	36.0	14220.0	Service Link
K13U	36.0	14260.0	Service Link
K15U	36.0	14300.0	Service Link
K17U	36.0	14340.0	Service Link
CM01	1.0	5925.5	TT&C
K19U	36.0	14380.0	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	CAHD
Transmit Beam Frequency	3700.0 MHz -4200.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	29.76 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
Max. Transmit EIRP Density	-30.7 dBW/Hz
Max. Transmit EIRP	44.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	This C band East reflector beam has a RPM RF of plus minus 2 degree Roll North South and plus minus 2 degree Pitch East West with Platform bias of plus minus 1 degree Roll NS, plus minus 2.5 degree Pitch EW

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* BW:	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):
4.0 kHz	-157.9	-157.8	-157.7	-157.6	-157.5	-156.7

Transmitting Beams 2:

Question	Response
Beam ID	CAVD
Transmit Beam Frequency	3700.0 MHz -4200.0 MHz
Beam Type	Steerable
Polarization	V
Peak Gain	29.26 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	-31.2 dBW/Hz
Max. Transmit EIRP	44.4 dBW
Co- or Cross Polar Mode	C

Service Area Description	This C band East reflector beam has a RPM RF of plus minus 2 degree Roll North South and plus minus 2 degree Pitch East West with Platform bias of plus minus 1 degree Roll NS, plus minus2.5 degree Pitch EW
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Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):
4.0 kHz	-154.4	-158.3	-158.2	-158.1	-158.0	-157.2

Transmitting Beams 3:

Question	Response
Beam ID	NKHD
Transmit Beam Frequency	11200.0 MHz -12200.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	32.96 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	-23.9 dBW/Hz

Max. Transmit EIRP	51.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	This Ku band West reflector beam has a RPM RF of plus minus 2 degree Roll North South and plus minus 2 degree Pitch East West with Platform bias of plus minus 1 degree Roll NS, plus minus 2.5 degree Pitch EW

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* (dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):
4.0 kHz	-151.1	-151.0	-150.9	-150.8	-150.7	-149.9

Transmitting Beams 4:

Question	Response
Beam ID	NKVD
Transmit Beam Frequency	11200.0 MHz -12200.0 MHz
Beam Type	Steerable
Polarization	V
Peak Gain	33.0 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	-23.4 dBW/Hz
Max. Transmit EIRP	52.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	This Ku band West reflector beam has a RPM RF of plus minus 2 degree Roll North South and plus minus 2 degree Pitch East West with Platform bias of plus minus 1 degree Roll NS, plus minus 2.5 degree Pitch EW

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):
4.0 kHz	-150.6	-150.5	-150.4	-150.3	-150.2	-149.4

Transmitting Beams 5:

Question	Response
Beam ID	TLMA
Transmit Beam Frequency	4196.95 MHz -4197.3 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	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
Max. Transmit EIRP Density	-35.9 dBW/Hz
Max. Transmit EIRP	19.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	TM1 Horizontal

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):
4.0 kHz	-163.2	-163.1	-163.0	-162.9	-162.7	-162.0

Transmitting Beams 6:

Question	Response
Beam ID	TLMB
Transmit Beam Frequency	4196.95 MHz -4197.3 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	-35.9 dBW/Hz
Max. Transmit EIRP	19.5 dBW

Co- or Cross Polar Mode	C
Service Area Description	TM1 LHCP

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):
4.0 kHz	-163.2	-163.1	-163.0	-162.9	-162.7	-162.0

Transmitting Beams 7:

Question	Response
Beam ID	TLMD
Transmit Beam Frequency	4198.7 MHz -4199.05 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	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
Max. Transmit EIRP Density	-35.9 dBW/Hz
Max. Transmit EIRP	19.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	TM2 Horizontal

Max. Power Flux Density

Transmitting
Beams 8:

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* (dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):
4.0 kHz	-163.2	-163.1	-163.0	-162.9	-162.7	-162.0

Question	Response
Beam ID	TLME
Transmit Beam Frequency	4198.7 MHz -4199.05 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	-35.9 dBW/Hz
Max. Transmit EIRP	19.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	TM2 LHCP

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* (dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):
4.0 kHz	-163.2	-163.1	-163.0	-162.9	-162.7	-162.0

Transmitting Beams 9:

Question	Response
Beam ID	UPC1
Transmit Beam Frequency	11700.987 MHz -11701.012 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.01 degrees
Antenna Rotational Error	0.34 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-22.0 dBW/Hz
Max. Transmit EIRP	21.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	UPC1 Vertical

Max. Power Flux Density

Information not provided.

Transmitting Beams 10:

Question	Response
Beam ID	UPC2
Transmit Beam Frequency	12194.987 MHz -12195.012 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	-22.6 dBW/Hz
Max. Transmit EIRP	21.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	UPC2 Horizontal

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
TLM1	0.35	4197.125	TT&C
K24D	36.0	12180.0	Service Link
K04D	36.0	11780.0	Service Link
K08D	36.0	11860.0	Service Link
K23D	36.0	12160.0	Service Link
UPC2	0.025	12195.0	TT&C
UPC1	0.025	11701.0	TT&C
TLM2	0.35	4198.875	TT&C
K22D	36.0	12140.0	Service Link
K20D	36.0	12100.0	Service Link
K19D	36.0	12080.0	Service Link
K18D	36.0	12060.0	Service Link
K17D	36.0	12040.0	Service Link
K14D	36.0	11980.0	Service Link
K12D	36.0	11940.0	Service Link
K11D	36.0	11920.0	Service Link
K07D	36.0	11840.0	Service Link
K06D	36.0	11820.0	Service Link
K05D	36.0	11800.0	Service Link
K02D	36.0	11740.0	Service Link
K01D	36.0	11720.0	Service Link
C24D	36.0	4180.0	Service Link
C23D	36.0	4160.0	Service Link
C21D	36.0	4120.0	Service Link

C20D	36.0	4100.0	Service Link
C19D	36.0	4080.0	Service Link
C18D	36.0	4060.0	Service Link
C17D	36.0	4040.0	Service Link
C16D	36.0	4020.0	Service Link
C15D	36.0	4000.0	Service Link
K03D	36.0	11760.0	Service Link
C01D	36.0	3720.0	Feeder Link
C02D	36.0	3740.0	Service Link
C03D	36.0	3760.0	Service Link
C04D	36.0	3780.0	Service Link
C05D	36.0	3800.0	Service Link
C06D	36.0	3820.0	Service Link
C07D	36.0	3840.0	Service Link
C08D	36.0	3860.0	Service Link
C09D	36.0	3880.0	Service Link
C10D	36.0	3900.0	Service Link
C11D	36.0	3920.0	Service Link
C12D	36.0	3940.0	Service Link
C13D	36.0	3960.0	Service Link
C14D	36.0	3980.0	Service Link
C22D	36.0	4140.0	Service Link
K21D	36.0	12120.0	Service Link
K09D	36.0	11880.0	Service Link
K10D	36.0	11900.0	Service Link
K13D	36.0	11960.0	Service Link

K15D	36.0	12000.0	Service Link
K16D	36.0	12020.0	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
<u>G-17extension.mdb</u>		GSO Antenna Gain Contour Data	GIMS file (*.mdb)	