Approved by OMB 3060-0678
Estimated Burden: up to 80 hours
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Federal Communications Commission

312 File Number: **SATMOD2019110800128**

Filing Description

Question	Response
Description	The ECHOSTAR-9 satellite is in operation at 121 degrees W.L. The satellite includes Ku and Ka band payloads. This application updates the service area and provides technical information in the latest Schedule S format.

Satellite Information

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	EchoStar-9
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 (9)

Nature of service	Description	Frequency Band(s)	Mode Type
Fixed-Satellite Service		11700.0 MHz -12200.0 MHz	Transmit
Fixed-Satellite Service		14000.0 MHz -14500.0 MHz	Receive
Fixed-Satellite Service		28400.0 MHz -28600.0 MHz	Receive
Fixed-Satellite Service		18600.0 MHz -18800.0 MHz	Transmit
Fixed-Satellite Service		18300.0 MHz -18500.0 MHz	Transmit
Fixed-Satellite Service		29300.0 MHz -29700.0 MHz	Receive
Fixed-Satellite Service		29800.0 MHz -30000.0 MHz	Receive
Fixed-Satellite Service		19700.0 MHz -19900.0 MHz	Transmit
Fixed-Satellite Service		20000.0 MHz -20200.0 MHz	Transmit

Orbital Information For Geostationary Satellites

Section	Question	Response
Orbital Longitude Information	Orbital Longitude	121.0 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	0.05 degrees
Antenna Axis Attitude Accuracy	Roll	0.0 degrees
	Pitch	0.0 degrees
	Yaw	0.0 degrees

Receiving Beams 1:

Question	Response
Beam ID	ANR1
Receive Beam Frequency	28400.0 MHz -28600.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	8.49 dB/K
Min. Saturation Flux Density	-104.9 dBW/m2
Max. Saturation Flux Density	-83.99 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 2:

Question	Response
Beam ID	SRL1
Receive Beam Frequency	29800.0 MHz -30000.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	16.16 dB/K
Min. Saturation Flux Density	-112.6 dBW/m2
Max. Saturation Flux Density	-91.66 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 3:

Question	Response
Beam ID	KURH
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	7.7 dB/K
Min. Saturation Flux Density	-104.3 dBW/m2
Max. Saturation Flux Density	-83.3 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The United States, parts of Mexico and Canada, and countries/territories in the Caribbean

Receiving Beams 4:

Question	Response
Beam ID	KURV
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	-7.77 dB/K
Min. Saturation Flux Density	-104.3 dBW/m2
Max. Saturation Flux Density	-83.3 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The United States, parts of Canada and Mexico, countries/territories in the Caribbean

Receiving Beams 5:

Question	Response
Beam ID	SRR2
Receive Beam Frequency	29500.0 MHz -29700.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	16.88 dB/K
Min. Saturation Flux Density	-113.4 dBW/m2
Max. Saturation Flux Density	-92.4 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 6:

Question	Response
Beam ID	DRR
Receive Beam Frequency	29500.0 MHz -29700.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	17.67 dB/K
Min. Saturation Flux Density	-114.1 dBW/m2
Max. Saturation Flux Density	-93.17 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving

Beams 7:

Question	Response
Beam ID	PHRL
Receive Beam Frequency	29500.0 MHz -29700.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	16.53 dB/K
Min. Saturation Flux Density	-113.0 dBW/m2
Max. Saturation Flux Density	-92.03 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 8:

Question	Response
Beam ID	ANR2
Receive Beam Frequency	29300.0 MHz -29500.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	11.94 dB/K
Min. Saturation Flux Density	-108.4 dBW/m2
Max. Saturation Flux Density	-87.44 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 9:

Question	Response
Beam ID	HRL
Receive Beam Frequency	29500.0 MHz -29700.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	14.06 dB/K
Min. Saturation Flux Density	-110.5 dBW/m2
Max. Saturation Flux Density	-89.56 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 10:

Question	Response

Beam ID	HRR1
Receive Beam Frequency	28400.0 MHz -28600.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	6.46 dB/K
Min. Saturation Flux Density	-102.9 dBW/m2
Max. Saturation Flux Density	-81.96 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 11:

Question	Response
Beam ID	HRR2
Receive Beam Frequency	29300.0 MHz -29500.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	10.16 dB/K
Min. Saturation Flux Density	-106.6 dBW/m2
Max. Saturation Flux Density	-85.66 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 12:

Question	Response
Beam ID	NRL
Receive Beam Frequency	29500.0 MHz -29700.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	16.02 dB/K
Min. Saturation Flux Density	-112.5 dBW/m2
Max. Saturation Flux Density	-91.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 13:

Question	Response

Beam ID	MCL
Receive Beam Frequency	29500.0 MHz -29700.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	16.09 dB/K
Min. Saturation Flux Density	-112.6 dBW/m2
Max. Saturation Flux Density	-91.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 14:

Question	Response
Beam ID	MCR1
Receive Beam Frequency	28400.0 MHz -28600.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.98 dB/K
Min. Saturation Flux Density	-106.5 dBW/m2
Max. Saturation Flux Density	-85.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 15:

Question	Response
Beam ID	MCR2
Receive Beam Frequency	29300.0 MHz -29500.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	12.88 dB/K
Min. Saturation Flux Density	-109.4 dBW/m2
Max. Saturation Flux Density	-88.4 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 16:

Question	Response

Beam ID	NRR2
Receive Beam Frequency	29300.0 MHz -29500.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	12.76 dB/K
Min. Saturation Flux Density	-109.2 dBW/m2
Max. Saturation Flux Density	-88.26 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 17:

Question	Response
Beam ID	NRR1
Receive Beam Frequency	28400.0 MHz -28600.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.64 dB/K
Min. Saturation Flux Density	-106.1 dBW/m2
Max. Saturation Flux Density	-85.14 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 18:

Question	Response
Beam ID	ANL
Receive Beam Frequency	29500.0 MHz -29700.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	16.87 dB/K
Min. Saturation Flux Density	-113.4 dBW/m2
Max. Saturation Flux Density	-92.4 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 19:

Question	Response

Beam ID	SFRL
Receive Beam Frequency	29500.0 MHz -29700.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	17.57 dB/K
Min. Saturation Flux Density	-114.0 dBW/m2
Max. Saturation Flux Density	-93.07 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 20:

Question	Response
Beam ID	SFRR
Receive Beam Frequency	29800.0 MHz -30000.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	18.06 dB/K
Min. Saturation Flux Density	-114.5 dBW/m2
Max. Saturation Flux Density	-93.56 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

Receiving Beams 21:

Question	Response
Beam ID	TCH
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	99.0 dB/K
Min. Saturation Flux Density	-92.0 dBW/m2
Max. Saturation Flux Density	-82.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth (-8 dBi contour falls off the edge of the Earth)

Receiving Beams 22:

Question	Response

Beam ID	TCV
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 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	-92.0 dBW/m2
Max. Saturation Flux Density	-82.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth (-8 dBi contour falls off the edge of the Earth)

Receiving Channels (38)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
UR9	26.0	14140.64	Service Link
UR4	26.0	14067.74	Service Link
UR5	26.0	14082.32	Service Link
UR13	26.0	14198.96	Service Link
UR32	26.0	14475.98	Service Link
UR12	26.0	14184.38	Service Link
UR11	26.0	14024.0	Service Link
UR10	26.0	14155.22	Service Link
UR1	26.0	14169.8	Service Link
AR2	200.0	28500.0	Service Link
AR1	200.0	29400.0	Service Link
UR8	26.0	14126.06	Service Link
UR7	26.0	14111.48	Service Link
UR6	26.0	14096.9	Service Link
UR31	26.0	14461.4	Service Link
UR30	26.0	14446.82	Service Link
UR3	26.0	14053.16	Service Link
UR29	26.0	14432.24	Service Link
UR26	26.0	14388.5	Service Link
UR23	26.0	14344.76	Service Link
UR22	26.0	14330.18	Service Link
UR21	26.0	14315.6	Service Link
UR20	26.0	14301.02	Service Link
UR2	26.0	14038.58	Service Link

AR3	200.0	29900.0	Service Link
UR24	26.0	14359.34	Service Link
UR25	26.0	14373.92	Service Link
UR28	26.0	14417.66	Service Link
UR27	26.0	14403.08	Service Link
TC1	0.016	14003.0	TT&C
TC2	0.016	14497.0	TT&C
UR14	26.0	14213.54	Service Link
UR15	26.0	14228.12	Service Link
AR4	200.0	29600.0	Service Link
UR16	26.0	14242.7	Service Link
UR17	26.0	14257.28	Service Link
UR18	26.0	14271.86	Service Link
UR19	26.0	14286.44	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	KUTV
Transmit Beam Frequency	11700.0 MHz -12200.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-19.28 dBW/Hz
Max. Transmit EIRP	54.86 dBW
Co- or Cross Polar Mode	C
Service Area Description	The United States, parts of Canada and Mexico, and countries/territories in the Caribbean

Max. Power Flux Density

Information not provided.

Transmitting Beams 2:

Question	Response
Beam ID	KUTH
Transmit Beam Frequency	11700.0 MHz -12200.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees

Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-20.7 dBW/Hz
Max. Transmit EIRP	53.45 dBW
Co- or Cross Polar Mode	C
Service Area Description	The United States, parts of Canada and Mexico, and countries/territories in the Caribbean

Max. Power Flux Density

Information not provided.

Transmitting Beams 3:

Question	Response
Beam ID	SEAL
Transmit Beam Frequency	19700.0 MHz -19900.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-17.38 dBW/Hz
Max. Transmit EIRP	65.33 dBW
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

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):
1.0 MHz	-139.5	-139.3	-139.2	-139.1	-132.7	-119.0

Transmitting Beams 4:

Question	Response
Beam ID	SEAR
Transmit Beam Frequency	20000.0 MHz -20200.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-17.38 dBW/Hz
Max. Transmit EIRP	65.63 dBW
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

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):

1.0 MHz	-139.5	-139.3	-139.2	-139.1	-134.3	-119.2

Transmitting Beams 5:

Question	Response
Beam ID	SFL
Transmit Beam Frequency	20000.0 MHz -20200.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-17.55 dBW/Hz
Max. Transmit EIRP	65.46 dBW
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

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):
1.0 MHz	-139.6	-139.5	-139.4	-139.3	-139.2	-119.1

Transmitting Beams 6:

Question	Response

Beam ID	SFR
Transmit Beam Frequency	19700.0 MHz -19900.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-17.74 dBW/Hz
Max. Transmit EIRP	65.27 dBW
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

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):
1.0 MHz	-139.8	-139.7	-139.6	-139.5	-139.4	-119.4

Transmitting Beams 7:

Question	Response
Beam ID	DEL1
Transmit Beam Frequency	18600.0 MHz -18800.0 MHz
Beam Type	Spot
Polarization	LHCP

Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-18.42 dBW/Hz
Max. Transmit EIRP	64.59 dBW
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

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):
1.0 MHz	-140.5	-140.4	-140.3	-140.2	-123.8	-120.2

Transmitting Beams 8:

Question	Response
Beam ID	DEL2
Transmit Beam Frequency	18300.0 MHz -18500.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-18.65 dBW/Hz
Max. Transmit EIRP	64.36 dBW
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

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):
1.0 MHz	-140.7	-140.6	-140.5	-140.4	-125.3	-120.2

Transmitting Beams 9:

Question	Response
Beam ID	DER
Transmit Beam Frequency	19700.0 MHz -19900.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-17.47 dBW/Hz
Max. Transmit EIRP	65.54 dBW
Co- or Cross Polar Mode	C

Service Area Description	-8 dBi gain contour

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):
1.0 MHz	-139.5	-139.4	-139.3	-139.2	-139.1	-118.9

Transmitting Beams 10:

Question	Response
Beam ID	PHL
Transmit Beam Frequency	19700.0 MHz -19900.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-17.31 dBW/Hz
Max. Transmit EIRP	65.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

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):
1.0 MHz	-139.4	-139.3	-139.2	-139.0	-138.9	-118.9

Transmitting Beams 11:

Question	Response
Beam ID	PHR1
Transmit Beam Frequency	18600.0 MHz -18800.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-18.17 dBW/Hz
Max. Transmit EIRP	64.84 dBW
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

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):
1.0 MHz	-140.2	-140.1	-140.0	-139.9	-139.8	-119.8

Transmitting Beams 12:

Question	Response
Beam ID	PHR2
Transmit Beam Frequency	18300.0 MHz -18500.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-18.39 dBW/Hz
Max. Transmit EIRP	64.62 dBW
Co- or Cross Polar Mode	C
Service Area Description	-8 dBi gain contour

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):
1.0 MHz	-140.5	-140.3	-140.2	-140.1	-140.0	-120.0

Transmitting Beams 13:

Question	Response
Beam ID	TLMH
Transmit Beam Frequency	11700.0 MHz -12200.0 MHz

Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-38.0 dBW/Hz
Max. Transmit EIRP	15.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth (-8 dBi contour falls off the edge of the Earth)

Max. Power Flux Density

Information not provided.

Transmitting Beams 14:

Question	Response
Beam ID	TLMV
Transmit Beam Frequency	11700.0 MHz -12200.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.13 degrees
Antenna Rotational Error	0.02 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-38.0 dBW/Hz

Max. Transmit EIRP	15.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth (-8 dBi contour falls off the edge of the Earth)

Max. Power Flux Density

Information not provided.

Transmitting Channels (38)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
UT16	26.0	11942.7	Service Link
UT15	26.0	11928.12	Service Link
UT14	26.0	11913.54	Service Link
UT32	26.0	12175.98	Service Link
TLM1	1.0	12198.0	TT&C
TLM2	1.0	11705.5	TT&C
UT1	26.0	11724.0	Service Link
UT10	26.0	11855.22	Service Link
UT11	26.0	11869.8	Service Link
UT12	26.0	11884.38	Service Link
UT13	26.0	11898.96	Service Link
UT6	26.0	11796.9	Service Link
UT5	26.0	11782.32	Service Link
UT4	26.0	11767.74	Service Link
UT31	26.0	12161.4	Service Link
UT30	26.0	12146.82	Service Link
UT3	26.0	11753.16	Service Link
UT29	26.0	12132.24	Service Link
UT28	26.0	12117.66	Service Link
UT27	26.0	12103.08	Service Link
UT26	26.0	12088.5	Service Link
UT25	26.0	12073.92	Service Link
AT1	200.0	18700.0	Service Link
UT23	26.0	12044.76	Service Link

UT22	26.0	12030.18	Service Link
UT21	26.0	12015.6	Service Link
UT20	26.0	12001.02	Service Link
AT2	200.0	18400.0	Service Link
UT24	26.0	12059.34	Service Link
UT7	26.0	11811.48	Service Link
UT8	26.0	11826.06	Service Link
AT3	200.0	19800.0	Service Link
AT4	200.0	20100.0	Service Link
UT17	26.0	11957.28	Service Link
UT18	26.0	11971.86	Service Link
UT19	26.0	11986.44	Service Link
UT2	26.0	11738.58	Service Link
UT9	26.0	11840.64	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?	Yes
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
DEL1.gxt	DEL1	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
DER.gxt	DER	GSO Antenna Gain Contour Data	GXT file (*.gxt)	Denver
DEL2.gxt	DEL2	GSO Antenna Gain Contour Data	GXT file (*.gxt)	Denver
PHL.gxt	PHL	GSO Antenna Gain Contour Data	GXT file (*.gxt)	Phoenix
PHR1.gxt	PHR1	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
PHR2.gxt	PHR2	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
SEAL.gxt	SEAL	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
SEAR.gxt	SEAR	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
ANR1.gxt	ANR1	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
ANR2.gxt	ANR2	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
ANR3.gxt	ANL	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
DRR.gxt	DRR	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
HRL.gxt	HRL	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
HRR1.gxt	HRR1	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
HRR2.gxt	HRR2	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
MCL.gxt	MCL	GSO Antenna Gain Contour Data	GXT file (*.gxt)	

MCR1.gxt	MCR1	GSO Antenna Gain Contour Data	GXT file (*.gxt)
MCR2.gxt	MCR2	GSO Antenna Gain Contour Data	GXT file (*.gxt)
NRL.gxt	NRL	GSO Antenna Gain Contour Data	GXT file (*.gxt)
NRR1.gxt	NRR1	GSO Antenna Gain Contour Data	GXT file (*.gxt)
NRR2.gxt	NRR2	GSO Antenna Gain Contour Data	GXT file (*.gxt)
PHR.gxt	PHRL	GSO Antenna Gain Contour Data	GXT file (*.gxt)
SRL.gxt	SRL1	GSO Antenna Gain Contour Data	GXT file (*.gxt)
SRR.gxt	SRR2	GSO Antenna Gain Contour Data	GXT file (*.gxt)
KUTV.gxt	KUTV	GSO Antenna Gain Contour Data	GXT file (*.gxt)
KURH.gxt	KURH	GSO Antenna Gain Contour Data	GXT file (*.gxt)
KURV.gxt	KURV	GSO Antenna Gain Contour Data	GXT file (*.gxt)
KUTH.gxt	KUTH	GSO Antenna Gain Contour Data	GXT file (*.gxt)
SFL.gxt	SFL	GSO Antenna Gain Contour Data	GXT file (*.gxt)
SFR.gxt	SFR	GSO Antenna Gain Contour Data	GXT file (*.gxt)
SFRL.gxt	SFRL	GSO Antenna Gain Contour Data	GXT file (*.gxt)
SFRR.gxt	SFRR	GSO Antenna Gain Contour Data	GXT file (*.gxt)