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

Federal Communications Commission

312 File Number: **SATMOD2019021200011**

Filing Description

Question	Response
Description	Additional frequencies and user beams for ECHOSTAR XXIV

Satellite Information

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	ECHOSTAR XXIV
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 (10)

Nature of service	Description	Frequency Band(s)	Mode Type
Fixed-Satellite Service		18300.0 MHz -19300.0 MHz	Transmit
Fixed-Satellite Service		29992.0 MHz -29996.0 MHz	Receive
Fixed-Satellite Service		28100.0 MHz -28600.0 MHz	Receive
Fixed-Satellite Service		29300.0 MHz -29900.0 MHz	Receive
Fixed-Satellite Service		50400.0 MHz -51400.0 MHz	Receive
Fixed-Satellite Service		47200.0 MHz -50200.0 MHz	Receive
Fixed-Satellite Service		40000.0 MHz -42000.0 MHz	Transmit
Fixed-Satellite Service		27500.0 MHz -28000.0 MHz	Receive
Fixed-Satellite Service		19700.0 MHz -20200.0 MHz	Transmit
Fixed-Satellite Service		28600.0 MHz -29100.0 MHz	Receive

Orbital Information For Geostationary Satellites

Section	Question	Response
Orbital Longitude Information	Orbital Longitude	95.0 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	0.03 degrees
	Pitch	0.03 degrees
	Yaw	0.03 degrees

Receiving Beams 1:

Question	Response
Beam ID	UR1L
Receive Beam Frequency	29300.0 MHz -29900.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	60.0 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	29.8 dB/K
Min. Saturation Flux Density	-88.0 dBW/m2
Max. Saturation Flux Density	-68.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 2:

Question	Response
Beam ID	UR1R
Receive Beam Frequency	29300.0 MHz -29900.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	60.0 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	29.8 dB/K
Min. Saturation Flux Density	-88.0 dBW/m2
Max. Saturation Flux Density	-68.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 3:

Question	Response
Beam ID	UR3L
Receive Beam Frequency	29300.0 MHz -29900.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	51.3 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	20.7 dB/K
Min. Saturation Flux Density	-88.0 dBW/m2
Max. Saturation Flux Density	-68.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 4:

Question	Response
Beam ID	UR3R
Receive Beam Frequency	29300.0 MHz -29900.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	51.3 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	20.7 dB/K
Min. Saturation Flux Density	-88.0 dBW/m2
Max. Saturation Flux Density	-68.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 5:

Question	Response
Beam ID	UR5L
Receive Beam Frequency	29300.0 MHz -29900.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	52.5 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	22.2 dB/K
Min. Saturation Flux Density	-88.0 dBW/m2
Max. Saturation Flux Density	-68.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 6:

Question	Response
Beam ID	UR5R
Receive Beam Frequency	29300.0 MHz -29900.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	52.5 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	22.2 dB/K
Min. Saturation Flux Density	-88.0 dBW/m2
Max. Saturation Flux Density	-68.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 7:

Question	Response
Beam ID	GR1L
Receive Beam Frequency	27500.0 MHz -28000.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	61.0 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	28.8 dB/K
Min. Saturation Flux Density	-94.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 8:

Question	Response
Beam ID	GR1R
Receive Beam Frequency	27500.0 MHz -28000.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	61.0 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	28.8 dB/K
Min. Saturation Flux Density	-94.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 9:

Question	Response
Beam ID	GR4L
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	61.0 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	28.8 dB/K
Min. Saturation Flux Density	-94.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 10:

Question	Response
Beam ID	GR4R
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	61.0 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	28.8 dB/K
Min. Saturation Flux Density	-94.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 11:

Question	Response
Beam ID	GR6L
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	61.0 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	28.8 dB/K
Min. Saturation Flux Density	-94.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 12:

Question	Response
Beam ID	GR6R
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	61.0 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	28.8 dB/K
Min. Saturation Flux Density	-94.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 13:

Question	Response
Beam ID	GR2R
Receive Beam Frequency	28100.0 MHz -28600.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	61.0 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	28.8 dB/K
Min. Saturation Flux Density	-94.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 14:

Question	Response
Beam ID	GR2L
Receive Beam Frequency	28100.0 MHz -28600.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	61.0 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	28.8 dB/K
Min. Saturation Flux Density	-94.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 15:

Question	Response
Beam ID	CMD1
Receive Beam Frequency	29992.0 MHz -29996.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	60.0 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	29.8 dB/K
Min. Saturation Flux Density	-88.0 dBW/m2
Max. Saturation Flux Density	-68.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 16:

Question	Response
Beam ID	GR3R
Receive Beam Frequency	28600.0 MHz -29100.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	61.0 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	28.8 dB/K
Min. Saturation Flux Density	-94.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Beams 17:

Question	Response
Beam ID	GR3L
Receive Beam Frequency	28600.0 MHz -29100.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	61.0 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	28.8 dB/K
Min. Saturation Flux Density	-94.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

Receiving Channels (8)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
CM1	2.0	29993.0	TT&C
UA	600.0	29600.0	Service Link
GWKC	500.0	28850.0	Feeder Link
GWVB	1000.0	50900.0	Feeder Link
GWVA	3000.0	48700.0	Feeder Link
GWKB	500.0	28350.0	Feeder Link
GWKA	500.0	27750.0	Feeder Link
CM2	2.0	29995.0	TT&C

Transmitting Beams 1:

Question	Response
Beam ID	VT5R
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	50.9 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-32.2 dBW/Hz
Max. Transmit EIRP	57.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-135.5	-135.4	-135.3	-135.1	-135.0	-134.3

Transmitting Beams 2:

Question	Response
Beam ID	GT1L
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz

Beam Type	Spot
Polarization	LHCP
Peak Gain	60.5 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.6 dBW/Hz
Max. Transmit EIRP	66.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-139.9	-139.8	-139.7	-139.5	-139.4	-138.7

Transmitting Beams 3:

Question	Response
Beam ID	GT1R
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	60.5 dBi
Antenna Pointing Error	0.03 degrees

Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-36.6 dBW/Hz
Max. Transmit EIRP	56.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-139.9	-139.8	-139.7	-139.5	-139.4	-138.7

Transmitting Beams 4:

Question	Response
Beam ID	UT4L
Transmit Beam Frequency	40500.0 MHz -41000.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	59.9 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees

Max. Transmit EIRP Density	-18.9 dBW/Hz
Max. Transmit EIRP	68.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	

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	-139.9	-139.8	-139.7	-139.5	-139.4	-138.7

Transmitting Beams 5:

Question	Response
Beam ID	UT4R
Transmit Beam Frequency	40500.0 MHz -41000.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	59.9 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-18.9 dBW/Hz
Max. Transmit EIRP	68.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	

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	-139.9	-139.8	-139.7	-139.5	-139.4	-138.7

Transmitting Beams 6:

Question	Response
Beam ID	UT1L
Transmit Beam Frequency	18300.0 MHz -19300.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	59.4 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-24.9 dBW/Hz
Max. Transmit EIRP	65.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-128.2	-128.1	-128.0	-127.8	-127.7	-127.0

Transmitting Beams 7:

Question	Response
Beam ID	UT1R
Transmit Beam Frequency	18300.0 MHz -19300.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	59.4 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-24.9 dBW/Hz
Max. Transmit EIRP	65.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-128.2	-128.1	-128.0	-127.8	-127.7	-127.0

Transmitting Beams 8:

Question	Response

Beam ID	VT1L
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	59.4 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-24.9 dBW/Hz
Max. Transmit EIRP	65.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-128.2	-128.1	-128.0	-127.8	-127.7	-127.0

Transmitting Beams 9:

Question	Response
Beam ID	VT1R
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Spot
Polarization	RHCP

Peak Gain	59.4 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-24.9 dBW/Hz
Max. Transmit EIRP	65.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-128.2	-128.1	-128.0	-127.8	-127.7	-127.0

Transmitting Beams 10:

Question	Response
Beam ID	UT3L
Transmit Beam Frequency	18300.0 MHz -19300.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	50.4 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-30.8 dBW/Hz
Max. Transmit EIRP	56.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-134.1	-134.0	-133.9	-133.7	-133.6	-132.9

Transmitting Beams 11:

Question	Response
Beam ID	UT3R
Transmit Beam Frequency	18300.0 MHz -19300.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	50.4 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-30.8 dBW/Hz
Max. Transmit EIRP	56.2 dBW

Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-134.1	-134.0	-133.9	-133.7	-133.6	-132.9

Transmitting Beams 12:

Question	Response
Beam ID	VT3L
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	50.4 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-30.8 dBW/Hz
Max. Transmit EIRP	56.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-134.1	-134.0	-133.9	-133.7	-133.6	-132.9

Transmitting Beams 13:

Question	Response
Beam ID	VT3R
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	50.4 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-30.8 dBW/Hz
Max. Transmit EIRP	56.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-134.1	-134.0	-133.9	-133.7	-133.6	-132.9

Transmitting Beams 14:

Question	Response
Beam ID	UT5L
Transmit Beam Frequency	18300.0 MHz -19300.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	50.9 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-32.2 dBW/Hz
Max. Transmit EIRP	57.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-135.5	-135.4	-135.3	-135.1	-135.0	-134.3

Transmitting Beams 15:

Question	Response

Beam ID	UT5R
Transmit Beam Frequency	18300.0 MHz -19300.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	50.9 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-32.2 dBW/Hz
Max. Transmit EIRP	57.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-135.5	-135.4	-135.3	-135.1	-135.0	-134.3

Transmitting Beams 16:

Question	Response
Beam ID	VT5L
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Spot
Polarization	LHCP

Peak Gain	50.9 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.03 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-32.2 dBW/Hz
Max. Transmit EIRP	57.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	The Americas (see representative isoline gain contour HNS 95W isoline contour.gxt)

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	-135.5	-135.4	-135.3	-135.1	-135.0	-134.3

Transmitting Channels (7)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
UD	500.0	40750.0	Service Link
UB	500.0	19950.0	Service Link
GWA	2000.0	41000.0	Feeder Link
TM1	2.0	20197.0	TT&C
TM2	2.0	20199.0	TT&C
UA	500.0	18550.0	Service Link
UC	500.0	19050.0	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
HNS 95W isoline contour -4 dB r2.gxt	UT4R	Service Area Diagram	GXT file (*.gxt)	Representative isoline gain contour (the Americas)
HNS 95W isoline contour -4 dB r2.gxt	UT4L	Service Area Diagram	GXT file (*.gxt)	Representative isoline gain contour (the Americas)
HNS 95W isoline contour -4 dB r2.gxt		Service Area Diagram	GXT file (*.gxt)	Representative isoline gain contour (the Americas)
000000001_HNS 95W_UT4R_E_C_CO.gxt	UT4R	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
000000001_HNS 95W_UT4L_E_C_CO.gxt	UT4L	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
000000001_HNS 95W_VT5R_E_C_CO.gxt	VT5R	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
000000001_HNS 95W_VT5L_E_C_CO.gxt	VT5L	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
000000001_HNS 95W_VT3R_E_C_CO.gxt	VT3R	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
000000001_HNS 95W_VT3L_E_C_CO.gxt	VT3L	GSO Antenna Gain Contour Data	GXT file (*.gxt)	

000000001_HNS 95W_VT1R_E_C_CO. gxt	VT1R	GSO Antenna Gain Contour Data	GXT file (*. gxt)
000000001_HNS 95W_VT1L_E_C_CO. gxt	VT1L	GSO Antenna Gain Contour Data	GXT file (*. gxt)
000000001_HNS 95W_UT5R_E_C_CO. gxt	UT5R	GSO Antenna Gain Contour Data	GXT file (*. gxt)
000000001_HNS 95W_UT5L_E_C_CO. gxt	UT5L	GSO Antenna Gain Contour Data	GXT file (*. gxt)
000000001_HNS 95W_UT3R_E_C_CO. gxt	UT3R	GSO Antenna Gain Contour Data	GXT file (*. gxt)
000000001_HNS 95W_UT3L_E_C_CO. gxt	UT3L	GSO Antenna Gain Contour Data	GXT file (*. gxt)
000000001_HNS 95W_UT1R_E_C_CO. gxt	UT1R	GSO Antenna Gain Contour Data	GXT file (*. gxt)
000000001_HNS 95W_UT1L_E_C_CO. gxt	UT1L	GSO Antenna Gain Contour Data	GXT file (*. gxt)
000000001_HNS 95W_UR5R_R_C_CO. gxt	UR5R	GSO Antenna Gain Contour Data	GXT file (*. gxt)
000000001_HNS 95W_UR5L_R_C_CO. gxt	UR5L	GSO Antenna Gain Contour Data	GXT file (*. gxt)

000000001_HNS 95W_UR3R_R_C_CO.gxt	UR3R	GSO Antenna Gain Contour Data	GXT file (*.gxt)
000000001_HNS 95W_UR3L_R_C_CO.gxt	UR3L	GSO Antenna Gain Contour Data	GXT file (*.gxt)
000000001_HNS 95W_UR1R_R_C_CO.gxt	UR1R	GSO Antenna Gain Contour Data	GXT file (*.gxt)
000000001_HNS 95W_UR1L_R_C_CO.gxt	UR1L	GSO Antenna Gain Contour Data	GXT file (*.gxt)
000000001_HNS 95W_GT1R_E_C_CO.gxt	GT1R	GSO Antenna Gain Contour Data	GXT file (*.gxt)
000000001_HNS 95W_GR6R_R_C_CO.gxt	GR6R	GSO Antenna Gain Contour Data	GXT file (*.gxt)
000000001_HNS 95W_GR6L_R_C_CO.gxt	GR6L	GSO Antenna Gain Contour Data	GXT file (*.gxt)
000000001_HNS 95W_GR4R_R_C_CO.gxt	GR4R	GSO Antenna Gain Contour Data	GXT file (*.gxt)
000000001_HNS 95W_GR4L_R_C_CO.gxt	GR4L	GSO Antenna Gain Contour Data	GXT file (*.gxt)
000000001_HNS 95W_GR2R_R_C_CO.gxt	GR2R	GSO Antenna Gain Contour Data	GXT file (*.gxt)

000000001_HNS 95W_GR2L_R_C_CO. gxt	GR2L	GSO Antenna Gain Contour Data	GXT file (*. gxt)	
000000001_HNS 95W_GR1R_R_C_CO. gxt	GR1R	GSO Antenna Gain Contour Data	GXT file (*. gxt)	
000000001_HNS 95W_GR1L_R_C_CO. gxt	GR1L	GSO Antenna Gain Contour Data	GXT file (*. gxt)	
000000001_HNS 95W_CMD1_E_C_CO. gxt	CMD1	GSO Antenna Gain Contour Data	GXT file (*. gxt)	
000000001_HNS 95W_GT1L_E_C_CO. gxt	GT1L	GSO Antenna Gain Contour Data	GXT file (*. gxt)	
000000001_HNS 95W_GR3R_R_C_CO. gxt	GR3R	GSO Antenna Gain Contour Data	GXT file (*. gxt)	Generic beam contour for gateways
000000001_HNS 95W_GR3L_R_C_CO. gxt	GR3L	GSO Antenna Gain Contour Data	GXT file (*. gxt)	Generic beam contour for gateways