



312 File Number: **SATAMD2017092900137**

Filing Description

Question	Response
Description	The Boeing Company requests authority to launch and operate a non-geostationary satellite orbit ("NGSO") fixed satellite service ("FSS") operating in V-band and an inter-satellite service operating in Ka-band and V-band.

**Satellite
Information**

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	V-band Constellation
Estimated Lifetime of Satellite(s) From Date of Launch	10 Years
Will the space station(s) operate on a Common Carrier basis?	No

Operating Frequency Bands (11)

Nature of service	Description	Frequency Band (s)	Mode Type
Fixed-Satellite Service		47200.0 MHz -50200.0 MHz	Receive
Fixed-Satellite Service		50400.0 MHz -51400.0 MHz	Receive
Fixed-Satellite Service		37500.0 MHz -42000.0 MHz	Transmit
Other Satellite Service (please specify)	Inter-Satellite Service	17800.0 MHz -19300.0 MHz	Receive
Other Satellite Service (please specify)	Inter-Satellite Service	19700.0 MHz -20200.0 MHz	Receive
Other Satellite Service (please specify)	Inter-Satellite Service	27500.0 MHz -29100.0 MHz	Transmit
Other Satellite Service (please specify)	Inter-Satellite Service	29500.0 MHz -30000.0 MHz	Transmit
Other Satellite Service (please specify)	Inter-Satellite Service	37500.0 MHz -40000.0 MHz	Receive
Other Satellite Service (please specify)	Inter-Satellite Service	40000.0 MHz -42000.0 MHz	Receive
Other Satellite Service (please specify)	Inter-Satellite Service	47200.0 MHz -50200.0 MHz	Transmit
Other Satellite Service (please specify)	Inter-Satellite Service	50400.0 MHz -51400.0 MHz	Transmit

**Orbital
Information For
Non-
Geostationary
Satellites**

Question	Response
Total Number of Satellites in the active constellation	147
Orbit Epoch Date	01/01/2018
Celestial Reference Body	Earth

Orbital Plane 1:

Question	Response
Number of Satellites in Plane	12
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6379.1 seconds
Apogee	1056.0 km
Perigee	1056.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-54.0 degrees
Active Service Arc End Angle with respect to Ascending Node	54.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	300.0
2	270.0
3	240.0
4	210.0
5	180.0
6	150.0
7	120.0
8	90.0
9	60.0
10	30.0
11	0.0
12	330.0

Orbital Plane 2:

Question	Response
Number of Satellites in Plane	12
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	32.7 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6379.1 seconds
Apogee	1056.0 km
Perigee	1056.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-54.0 degrees
Active Service Arc End Angle with respect to Ascending Node	54.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	300.0
2	270.0
3	240.0
4	210.0
5	180.0
6	150.0
7	120.0
8	90.0
9	60.0
10	30.0
11	0.0
12	330.0

Orbital Plane 3:

Question	Response
Number of Satellites in Plane	12
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	65.5 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6379.1 seconds
Apogee	1056.0 km
Perigee	1056.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-54.0 degrees
Active Service Arc End Angle with respect to Ascending Node	54.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	300.0
2	270.0
3	240.0
4	210.0
5	180.0
6	150.0
7	120.0
8	90.0
9	60.0
10	30.0
11	0.0
12	330.0

Orbital Plane 4:

Question	Response
Number of Satellites in Plane	12
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	98.2 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6379.1 seconds
Apogee	1056.0 km
Perigee	1056.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-54.0 degrees
Active Service Arc End Angle with respect to Ascending Node	54.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	300.0
2	270.0
3	240.0
4	210.0
5	180.0
6	150.0
7	120.0
8	90.0
9	60.0
10	30.0
11	0.0
12	330.0

Orbital Plane 5:

Question	Response
Number of Satellites in Plane	12
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	130.9 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6379.1 seconds
Apogee	1056.0 km
Perigee	1056.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-54.0 degrees
Active Service Arc End Angle with respect to Ascending Node	54.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	300.0
2	270.0
3	240.0
4	210.0
5	180.0
6	150.0
7	120.0
8	90.0
9	60.0
10	30.0
11	0.0
12	330.0

Orbital Plane 6:

Question	Response
Number of Satellites in Plane	12
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	163.6 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6379.1 seconds
Apogee	1056.0 km
Perigee	1056.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-54.0 degrees
Active Service Arc End Angle with respect to Ascending Node	54.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	300.0
2	270.0
3	240.0
4	210.0
5	180.0
6	150.0
7	120.0
8	90.0
9	60.0
10	30.0
11	0.0
12	330.0

Orbital Plane 7:

Question	Response
Number of Satellites in Plane	12
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	196.4 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6379.1 seconds
Apogee	1056.0 km
Perigee	1056.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-54.0 degrees
Active Service Arc End Angle with respect to Ascending Node	54.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	270.0
2	240.0
3	210.0
4	180.0
5	150.0
6	120.0
7	90.0
8	60.0
9	30.0
10	0.0
11	330.0
12	300.0

Orbital Plane 8:

Question	Response
Number of Satellites in Plane	12
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	229.1 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6379.1 seconds
Apogee	1056.0 km
Perigee	1056.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-54.0 degrees
Active Service Arc End Angle with respect to Ascending Node	54.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	270.0
2	240.0
3	210.0
4	180.0
5	150.0
6	120.0
7	90.0
8	60.0
9	30.0
10	0.0
11	300.0
12	330.0

Orbital Plane 9:

Question	Response
Number of Satellites in Plane	12
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	261.8 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6379.1 seconds
Apogee	1056.0 km
Perigee	1056.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-54.0 degrees
Active Service Arc End Angle with respect to Ascending Node	54.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	270.0
2	240.0
3	210.0
4	180.0
5	150.0
6	120.0
7	90.0
8	60.0
9	30.0
10	0.0
11	300.0
12	330.0

Orbital Plane 10:

Question	Response
Number of Satellites in Plane	12
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	294.5 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6379.1 seconds
Apogee	1056.0 km
Perigee	1056.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-54.0 degrees
Active Service Arc End Angle with respect to Ascending Node	54.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	270.0
2	240.0
3	210.0
4	180.0
5	150.0
6	120.0
7	90.0
8	60.0
9	30.0
10	0.0
11	300.0
12	330.0

Orbital Plane 11:

Question	Response
Number of Satellites in Plane	12
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	327.3 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6379.1 seconds
Apogee	1056.0 km
Perigee	1056.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-54.0 degrees
Active Service Arc End Angle with respect to Ascending Node	54.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	330.0
2	300.0
3	270.0
4	240.0
5	210.0
6	180.0
7	150.0
8	120.0
9	90.0
10	60.0
11	0.0
12	30.0

Orbital Plane 12:

Question	Response
Number of Satellites in Plane	2
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	205.4 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86170.5 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	-63.4 degrees
Active Service Arc End Angle with respect to Ascending Node	63.4 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.1
2	201.1

Orbital Plane 13:

Question	Response
Number of Satellites in Plane	2
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	133.4 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86170.5 seconds
Apogee	44221.4 km
Perigee	27354.9 km

Active Service Arc Begin Angle with respect to Ascending Node	-63.4 degrees
Active Service Arc End Angle with respect to Ascending Node	63.4 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	72.1
2	273.1

Orbital Plane 14:

Question	Response
Number of Satellites in Plane	2
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	61.3 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86170.5 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	-63.4 degrees
Active Service Arc End Angle with respect to Ascending Node	63.4 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	144.0
2	345.0

Orbital Plane 15:

Question	Response
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Number of Satellites in Plane	2
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	349.4 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86170.5 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	-63.4 degrees
Active Service Arc End Angle with respect to Ascending Node	63.4 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	215.9
2	56.9

Orbital Plane 16:

Question	Response
Number of Satellites in Plane	2
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	277.4 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86170.5 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	-63.4 degrees

Active Service Arc End Angle with respect to Ascending Node 63.4 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	129.0
2	288.0

Orbital Plane 17:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	205.4 degrees
Argument of Perigee	270.0 degrees
Orbital Period	86170.5 seconds
Apogee	40004.7 km
Perigee	31571.5 km
Active Service Arc Begin Angle with respect to Ascending Node	-63.4 degrees
Active Service Arc End Angle with respect to Ascending Node	63.4 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	3.6

Orbital Plane 18:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees

Right Ascension of Ascending Node	133.4 degrees
Argument of Perigee	270.0 degrees
Orbital Period	86170.5 seconds
Apogee	40004.7 km
Perigee	31571.5 km
Active Service Arc Begin Angle with respect to Ascending Node	-63.4 degrees
Active Service Arc End Angle with respect to Ascending Node	63.4 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	75.6

Orbital Plane 19:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	61.3 degrees
Argument of Perigee	270.0 degrees
Orbital Period	86170.5 seconds
Apogee	40004.7 km
Perigee	31571.5 km
Active Service Arc Begin Angle with respect to Ascending Node	-63.4 degrees
Active Service Arc End Angle with respect to Ascending Node	63.4 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	147.6

Orbital Plane 20:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	349.4 degrees
Argument of Perigee	270.0 degrees
Orbital Period	86170.5 seconds
Apogee	40004.7 km
Perigee	31571.5 km
Active Service Arc Begin Angle with respect to Ascending Node	-63.4 degrees
Active Service Arc End Angle with respect to Ascending Node	63.4 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	219.5

Orbital Plane 21:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	277.4 degrees
Argument of Perigee	270.0 degrees
Orbital Period	86170.5 seconds

Apogee	40004.7 km
Perigee	31571.5 km
Active Service Arc Begin Angle with respect to Ascending Node	-63.4 degrees
Active Service Arc End Angle with respect to Ascending Node	63.4 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	291.6

Receiving Beams 1:

Question	Response
Beam ID	X4L0
Receive Beam Frequency	17800.0 MHz -19300.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	40.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	14.0 dB/K
Min. Saturation Flux Density	-999.9 dBW/m2
Max. Saturation Flux Density	-999.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible GSO arc with 3 dB beamwidth of 1.7 deg

Receiving Beams 2:

Question	Response
Beam ID	X5L0
Receive Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	40.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	14.0 dB/K
Min. Saturation Flux Density	-999.9 dBW/m2
Max. Saturation Flux Density	-999.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible GSO arc with 3 dB beamwidth of 1.7 deg

Receiving Beams 3:

Question	Response
Beam ID	X4R0
Receive Beam Frequency	17800.0 MHz -19300.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	40.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	14.0 dB/K
Min. Saturation Flux Density	-999.9 dBW/m2
Max. Saturation Flux Density	-999.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible GSO arc with 3 dB beamwidth of 1.7 deg

Receiving Beams 4:

Question	Response
Beam ID	X5R0
Receive Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	40.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	14.0 dB/K
Min. Saturation Flux Density	-999.9 dBW/m ²
Max. Saturation Flux Density	-999.8 dBW/m ²
Co- or Cross Polar Mode	C
Service Area Description	Visible GSO arc with 3 dB beamwidth of 1.7 deg

Receiving Beams 5:

Question	Response
Beam ID	X6L0
Receive Beam Frequency	37500.0 MHz -40000.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	45.4 dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	18.5 dB/K
Min. Saturation Flux Density	-999.9 dBW/m2
Max. Saturation Flux Density	-999.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible sky above satellite with 3 dB beamwidth of 0.9 deg

Receiving Beams 6:

Question	Response
Beam ID	X7L0
Receive Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	45.4 dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	18.5 dB/K
Min. Saturation Flux Density	-999.9 dBW/m2
Max. Saturation Flux Density	-999.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible sky above satellite with 3 dB beamwidth of 0.9 deg

Receiving Beams 7:

Question	Response
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Beam ID	X6R0
Receive Beam Frequency	37500.0 MHz -40000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	45.4 dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	18.5 dB/K
Min. Saturation Flux Density	-999.9 dBW/m2
Max. Saturation Flux Density	-999.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible sky above satellite with 3 dB beamwidth of 0.9 deg

Receiving Beams 8:

Question	Response
Beam ID	X7R0
Receive Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	45.4 dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees

G/T at Max. Gain Point	18.5 dB/K
Min. Saturation Flux Density	-999.9 dBW/m2
Max. Saturation Flux Density	-999.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible sky above satellite with 3 dB beamwidth of 0.9 deg

Receiving Beams 9:

Question	Response
Beam ID	G2L0
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	55.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	25.3 dB/K
Min. Saturation Flux Density	-149.0 dBW/m2
Max. Saturation Flux Density	-69.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 10:

Question	Response
Beam ID	G2R0

Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	55.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	25.3 dB/K
Min. Saturation Flux Density	-149.0 dBW/m2
Max. Saturation Flux Density	-69.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 11:

Question	Response
Beam ID	G3L0
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	55.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	25.3 dB/K

Min. Saturation Flux Density	-149.0 dBW/m2
Max. Saturation Flux Density	-69.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 12:

Question	Response
Beam ID	L2L0
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	49.8 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	19.1 dB/K
Min. Saturation Flux Density	-113.8 dBW/m2
Max. Saturation Flux Density	-68.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 13:

Question	Response
Beam ID	G3R0
Receive Beam Frequency	50400.0 MHz -51400.0 MHz

Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	55.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	25.3 dB/K
Min. Saturation Flux Density	-149.0 dBW/m2
Max. Saturation Flux Density	-69.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 14:

Question	Response
Beam ID	GTLC
Receive Beam Frequency	51150.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-25.5 dB/K
Min. Saturation Flux Density	-110.6 dBW/m2

Max. Saturation Flux Density	-70.4 dBW/m ²
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 5 deg elevation angle

Receiving Beams 15:

Question	Response
Beam ID	GTRC
Receive Beam Frequency	51150.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-25.5 dB/K
Min. Saturation Flux Density	-110.6 dBW/m ²
Max. Saturation Flux Density	-70.4 dBW/m ²
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 5 deg elevation angle

Receiving Beams 16:

Question	Response
Beam ID	L2L1
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable

Polarization	LHCP
Peak Gain	42.2 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	11.5 dB/K
Min. Saturation Flux Density	-106.2 dBW/m2
Max. Saturation Flux Density	-61.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

**Receiving
Beams 17:**

Question	Response
Beam ID	LTLC
Receive Beam Frequency	51150.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-25.5 dB/K
Min. Saturation Flux Density	-107.5 dBW/m2
Max. Saturation Flux Density	-61.5 dBW/m2

Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 5 deg elevation angle

Receiving Beams 18:

Question	Response
Beam ID	L2R0
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	49.8 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	19.1 dB/K
Min. Saturation Flux Density	-113.8 dBW/m2
Max. Saturation Flux Density	-68.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 19:

Question	Response
Beam ID	L2R1
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP

Peak Gain	42.2 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	11.5 dB/K
Min. Saturation Flux Density	-106.2 dBW/m2
Max. Saturation Flux Density	-61.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

**Receiving
Beams 20:**

Question	Response
Beam ID	L3L0
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	49.8 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	19.1 dB/K
Min. Saturation Flux Density	-113.8 dBW/m2
Max. Saturation Flux Density	-68.1 dBW/m2
Co- or Cross Polar Mode	C

Service Area Description	Visible Earth above 25 deg elevation angle
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Receiving Beams 21:

Question	Response
Beam ID	L3L1
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	42.2 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	11.5 dB/K
Min. Saturation Flux Density	-106.2 dBW/m2
Max. Saturation Flux Density	-61.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 22:

Question	Response
Beam ID	L3R0
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	49.8 dBi

Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	19.1 dB/K
Min. Saturation Flux Density	-113.8 dBW/m2
Max. Saturation Flux Density	-68.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

**Receiving
Beams 23:**

Question	Response
Beam ID	L3R1
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	42.2 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	11.5 dB/K
Min. Saturation Flux Density	-106.2 dBW/m2
Max. Saturation Flux Density	-61.5 dBW/m2
Co- or Cross Polar Mode	C

**Receiving
Beams 24:**

Service Area Description	Visible Earth above 25 deg elevation angle
Question	Response
Beam ID	LTRC
Receive Beam Frequency	51150.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-25.5 dB/K
Min. Saturation Flux Density	-107.5 dBW/m ²
Max. Saturation Flux Density	-61.5 dBW/m ²
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 5 deg elevation angle

Receiving Channels (17)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
VF03	1000.0	50900.0	Feeder Link
VTC	250.0	51275.0	TT&C
VF04	1000.0	50900.0	Feeder Link
VS01	3000.0	48700.0	Service Link
VS02	3000.0	48700.0	Service Link
VS03	1000.0	50900.0	Service Link
VS04	1000.0	50900.0	Service Link
VF02	3000.0	48700.0	Feeder Link
VF01	3000.0	48700.0	Feeder Link
VX03	2000.0	41000.0	Service Link
VX02	2500.0	38750.0	Service Link
VX01	2500.0	38750.0	Service Link
KX04	500.0	19950.0	Service Link
KX03	500.0	19950.0	Service Link
KX02	1500.0	18550.0	Service Link
KX01	1500.0	18550.0	Service Link
VX04	2000.0	41000.0	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	X0L0
Transmit Beam Frequency	27500.0 MHz -29100.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	43.6 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.0 dBW/Hz
Max. Transmit EIRP	61.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible GSO arc with 3 dB beamwidth of 1.2 deg

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):
1.0 MHz	-130.0	-126.0	-124.0	-122.0	-122.0	-122.0

Transmitting Beams 2:

Question	Response
Beam ID	X1L0
Transmit Beam Frequency	29500.0 MHz -30000.0 MHz

Beam Type	Steerable
Polarization	LHCP
Peak Gain	43.6 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.0 dBW/Hz
Max. Transmit EIRP	61.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible GSO arc with 3 dB beamwidth of 1.2 deg

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):
1.0 MHz	-130.0	-126.0	-124.0	-122.0	-122.0	-122.0

Transmitting Beams 3:

Question	Response
Beam ID	X0R0
Transmit Beam Frequency	27500.0 MHz -29100.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	43.6 dBi
Antenna Pointing Error	0.1 degrees

Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.0 dBW/Hz
Max. Transmit EIRP	61.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible GSO arc with 3 dB beamwidth of 1.2 deg

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):
1.0 MHz	-130.0	-126.0	-124.0	-122.0	-122.0	-122.0

Transmitting Beams 4:

Question	Response
Beam ID	X1R0
Transmit Beam Frequency	29500.0 MHz -30000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	43.6 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.0 dBW/Hz

Max. Transmit EIRP	61.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible GSO arc with 3 dB beamwidth of 1.2 deg

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):
1.0 MHz	-130.0	-126.0	-124.0	-122.0	-122.0	-122.0

Transmitting Beams 5:

Question	Response
Beam ID	X2L0
Transmit Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	48.0 dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-20.5 dBW/Hz
Max. Transmit EIRP	66.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible sky above satellite with 3 dB beamwidth of 0.7 deg

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):
1.0 MHz	-130.0	-126.0	-124.0	-122.0	-122.0	-122.0

Transmitting Beams 6:

Question	Response
Beam ID	X3L0
Transmit Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	48.0 dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-20.5 dBW/Hz
Max. Transmit EIRP	66.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible sky above satellite with 3 dB beamwidth of 0.7 deg

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):

1.0	-130.0	-126.0	-124.0	-122.0	-122.0	-122.0
MHz						

Transmitting Beams 7:

Question	Response
Beam ID	X2R0
Transmit Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	48.0 dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-20.5 dBW/Hz
Max. Transmit EIRP	66.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible sky above satellite with 3 dB beamwidth of 0.7 deg

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):
1.0	-130.0	-126.0	-124.0	-122.0	-122.0	-122.0
MHz						

Transmitting Beams 8:

Question	Response
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Beam ID	X3R0
Transmit Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	48.0 dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-20.5 dBW/Hz
Max. Transmit EIRP	66.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible sky above satellite with 3 dB beamwidth of 0.7 deg

Max. Power Flux Density

	* 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	-130.0	-126.0	-124.0	-122.0	-122.0	-122.0

Transmitting Beams 9:

Question	Response
Beam ID	LTLT
Transmit Beam Frequency	41750.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP

Peak Gain	5.0 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-31.1 dBW/Hz
Max. Transmit EIRP	12.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 5 deg elevation angle

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):
1.0 MHz	-118.0	-115.5	-113.0	-110.5	-108.0	-108.0

Transmitting Beams 10:

Question	Response
Beam ID	G0L0
Transmit Beam Frequency	37500.0 MHz -40000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	55.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-1.8 dBW/Hz
Max. Transmit EIRP	92.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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):
1.0 MHz	-120.0	-116.3	-112.5	-108.8	-105.0	-105.0

Transmitting Beams 11:

Question	Response
Beam ID	G0R0
Transmit Beam Frequency	37500.0 MHz -40000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	55.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-1.8 dBW/Hz
Max. Transmit EIRP	92.2 dBW
Co- or Cross Polar Mode	C

Service Area Description

Visible Earth above 25 deg
elevation angle

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):
1.0 MHz	-120.0	-116.3	-112.5	-108.8	-105.0	-105.0

Transmitting Beams 12:

Question	Response
Beam ID	G1L0
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	54.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-1.8 dBW/Hz
Max. Transmit EIRP	91.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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):
1.0 MHz	-115.0	-112.5	-110.0	-107.5	-105.0	-105.0

Transmitting Beams 13:

Question	Response
Beam ID	G1R0
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	54.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-1.8 dBW/Hz
Max. Transmit EIRP	91.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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):
1.0 MHz	-115.0	-112.5	-110.0	-107.5	-105.0	-105.0

Transmitting Beams 14:

Question	Response
Beam ID	GTLT
Transmit Beam Frequency	41750.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-4.5 dBW/Hz
Max. Transmit EIRP	36.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 5 deg elevation angle

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):
1.0 MHz	-118.0	-115.5	-113.0	-110.5	-108.0	-108.0

Transmitting Beams 15:

Question	Response
Beam ID	GTRT
Transmit Beam Frequency	41750.0 MHz -42000.0 MHz

Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-4.5 dBW/Hz
Max. Transmit EIRP	36.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 5 deg elevation angle

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):
1.0 MHz	-118.0	-115.5	-113.0	-110.5	-108.0	-108.0

Transmitting Beams 16:

Question	Response
Beam ID	LOLO
Transmit Beam Frequency	37500.0 MHz -40000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	49.8 dBi
Antenna Pointing Error	0.03 degrees

Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-33.6 dBW/Hz
Max. Transmit EIRP	60.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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):
1.0 MHz	-120.0	-116.3	-112.5	-108.8	-105.0	-105.0

Transmitting Beams 17:

Question	Response
Beam ID	L0L1
Transmit Beam Frequency	37500.0 MHz -40000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	42.2 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-28.1 dBW/Hz

Max. Transmit EIRP	65.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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):
1.0 MHz	-120.0	-116.3	-112.5	-108.8	-105.0	-105.0

Transmitting Beams 18:

Question	Response
Beam ID	LOR0
Transmit Beam Frequency	37500.0 MHz -40000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	49.8 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-33.6 dBW/Hz
Max. Transmit EIRP	60.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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):
1.0 MHz	-120.0	-116.3	-112.5	-108.8	-105.0	-105.0

Transmitting Beams 19:

Question	Response
Beam ID	L0R1
Transmit Beam Frequency	37500.0 MHz -40000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	42.2 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-28.1 dBW/Hz
Max. Transmit EIRP	65.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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):

1.0	-120.0	-116.3	-112.5	-108.8	-105.0	-105.0
MHz						

Transmitting Beams 20:

Question	Response
Beam ID	L1L0
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	48.8 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-33.6 dBW/Hz
Max. Transmit EIRP	59.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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):
1.0	-115.0	-112.5	-110.0	-107.5	-105.0	-105.0
MHz						

Transmitting Beams 21:

Question	Response
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Beam ID	L1L1
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	41.2 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-28.1 dBW/Hz
Max. Transmit EIRP	64.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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):
1.0 MHz	-115.0	-112.5	-110.0	-107.5	-105.0	-105.0

Transmitting Beams 22:

Question	Response
Beam ID	L1R0
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP

Peak Gain	48.8 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-33.6 dBW/Hz
Max. Transmit EIRP	59.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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):
1.0	-115.0	-112.5	-110.0	-107.5	-105.0	-105.0
MHz						

Transmitting Beams 23:

Question	Response
Beam ID	L1R1
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	41.2 dBi
Antenna Pointing Error	0.03 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-28.1 dBW/Hz
Max. Transmit EIRP	64.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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):
1.0 MHz	-115.0	-112.5	-110.0	-107.5	-105.0	-105.0

Transmitting Beams 24:

Question	Response
Beam ID	LTRT
Transmit Beam Frequency	41750.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	No
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-31.1 dBW/Hz
Max. Transmit EIRP	12.0 dBW
Co- or Cross Polar Mode	C

Service Area Description

Visible Earth above 5 deg
elevation angle

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):
1.0	-118.0	-115.5	-113.0	-110.5	-108.0	-108.0
MHz						

Transmitting Channels (18)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
VTT2	250.0	41875.0	TT&C
VS06	2500.0	38750.0	Service Link
VS07	2000.0	41000.0	Service Link
VTT1	250.0	41875.0	TT&C
VS08	2000.0	41000.0	Service Link
VF05	2500.0	38750.0	Feeder Link
VF06	2500.0	38750.0	Feeder Link
VF07	2000.0	41000.0	Feeder Link
VF08	2000.0	41000.0	Feeder Link
VS05	2500.0	38750.0	Service Link
VX07	1000.0	50900.0	Service Link
VX06	3000.0	48700.0	Service Link
VX05	3000.0	48700.0	Service Link
KX08	500.0	29750.0	Service Link
KX07	500.0	29750.0	Service Link
KX06	1600.0	28300.0	Service Link
KX05	1600.0	28300.0	Service Link
VX08	1000.0	50900.0	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?	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
<u>Receiving Beam Attachment 7 25 2017.pdf</u>	X6R0	NGSO Antenna Gain Data	PDF file (*.pdf)	
<u>Receiving Beam Attachment 7 25 2017.pdf</u>	X6L0	NGSO Antenna Gain Data	PDF file (*.pdf)	
<u>Receiving Beam Attachment 7 25 2017.pdf</u>	X7L0	NGSO Antenna Gain Data	PDF file (*.pdf)	
<u>Receiving Beam Attachment 7 25 2017.pdf</u>	X5R0	NGSO Antenna Gain Data	PDF file (*.pdf)	
<u>Receiving Beam Attachment 7 25 2017.pdf</u>	X5L0	NGSO Antenna Gain Data	PDF file (*.pdf)	
<u>Receiving Beam Attachment 7 25 2017.pdf</u>	X4R0	NGSO Antenna Gain Data	PDF file (*.pdf)	
<u>Receiving Beam Attachment 7 25 2017.pdf</u>	X4L0	NGSO Antenna Gain Data	PDF file (*.pdf)	
<u>G1R0 Rev 01.gxt</u>	G1R0	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>G1L0 Rev 01.gxt</u>	G1L0	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>G0R0 Rev 01.gxt</u>	G0R0	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>G0L0 Rev 01.gxt</u>	G0L0	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>LTRT.gxt</u>	LTRT	NGSO Antenna Gain Data	GXT file (*.gxt)	

<u>L1R1.gxt</u>	L1R1	NGSO Antenna Gain Data	GXT file (*. gxt)
<u>L1R0.gxt</u>	L1R0	NGSO Antenna Gain Data	GXT file (*. gxt)
<u>L1L1.gxt</u>	L1L1	NGSO Antenna Gain Data	GXT file (*. gxt)
<u>L1L0.gxt</u>	L1L0	NGSO Antenna Gain Data	GXT file (*. gxt)
<u>L0R1.gxt</u>	L0R1	NGSO Antenna Gain Data	GXT file (*. gxt)
<u>L0R0.gxt</u>	L0R0	NGSO Antenna Gain Data	GXT file (*. gxt)
<u>L0L1.gxt</u>	L0L1	NGSO Antenna Gain Data	GXT file (*. gxt)
<u>L0L0.gxt</u>	L0L0	NGSO Antenna Gain Data	GXT file (*. gxt)
<u>GTRT.gxt</u>	GTRT	NGSO Antenna Gain Data	GXT file (*. gxt)
<u>GTLT.gxt</u>	GTLT	NGSO Antenna Gain Data	GXT file (*. gxt)
<u>LTRC.gxt</u>	LTRC	NGSO Antenna Gain Data	GXT file (*. gxt)
<u>L3R1.gxt</u>	L3R1	NGSO Antenna Gain Data	GXT file (*. gxt)
<u>L3R0.gxt</u>	L3R0	NGSO Antenna Gain Data	GXT file (*. gxt)

<u>L3L1.gxt</u>	L3L1	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>L3L0.gxt</u>	L3L0	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>L2R1.gxt</u>	L2R1	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>Receiving Beam Attachment 7 25 2017. pdf</u>	X7R0	NGSO Antenna Gain Data	PDF file (*.pdf)
<u>L2R0.gxt</u>	L2R0	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>LTLC.gxt</u>	LTLC	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>L2L1.gxt</u>	L2L1	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>L2L0.gxt</u>	L2L0	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>GTLC.gxt</u>	GTLC	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>G3R0.gxt</u>	G3R0	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>GTRC.gxt</u>	GTRC	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>G3L0.gxt</u>	G3L0	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>G2R0.gxt</u>	G2R0	NGSO Antenna Gain Data	GXT file (*.gxt)

G2L0.gxt

G2L0

NGSO
Antenna Gain
Data

GXT file (*.
gxt)

LTLT.gxt

LTLT

NGSO
Antenna Gain
Data

GXT file (*.
gxt)
