



312 File Number: **SATLOA2016111500121**

Filing Description

Question	Response
Description	Theia Satellite Network

**Satellite
Information**

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	USASAT NGSO-4
Estimated Lifetime of Satellite(s) From Date of Launch	12 Years
Will the space station(s) operate on a Common Carrier basis?	No

Operating Frequency Bands (16)

Nature of service	Description	Frequency Band(s)	Mode Type
Fixed-Satellite Service		10700.0 MHz -11700.0 MHz	Transmit
Fixed-Satellite Service		11700.0 MHz -12200.0 MHz	Transmit
Fixed-Satellite Service		12200.0 MHz -12700.0 MHz	Transmit
Fixed-Satellite Service		12750.0 MHz -13250.0 MHz	Receive
Fixed-Satellite Service		14000.0 MHz -14500.0 MHz	Receive
Fixed-Satellite Service		17800.0 MHz -18300.0 MHz	Transmit
Fixed-Satellite Service		18300.0 MHz -18600.0 MHz	Transmit
Fixed-Satellite Service		18800.0 MHz -19300.0 MHz	Transmit
Fixed-Satellite Service		19300.0 MHz -19700.0 MHz	Transmit
Fixed-Satellite Service		19700.0 MHz -20200.0 MHz	Transmit
Fixed-Satellite Service		27500.0 MHz -29100.0 MHz	Receive
Fixed-Satellite Service		29100.0 MHz -29500.0 MHz	Receive
Fixed-Satellite Service		29500.0 MHz -30000.0 MHz	Receive
Earth Exploration-Satellite Service		25500.0 MHz -27000.0 MHz	Transmit
Earth Exploration-Satellite Service		1215.0 MHz -1300.0 MHz	Transmit
Earth Exploration-Satellite Service		1215.0 MHz -1300.0 MHz	Receive

**Orbital
Information For
Non-
Geostationary
Satellites**

Question	Response
Total Number of Satellites in the active constellation	120
Orbit Epoch Date	01/01/2018
Celestial Reference Body	Earth

Orbital Plane 1:

Question	Response
Number of Satellites in Plane	14
Inclination Angle	98.6047 degrees
Right Ascension of Ascending Node	203.806 degrees
Argument of Perigee	90.0 degrees
Orbital Period	6053.0 seconds
Apogee	809.0 km
Perigee	791.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	158.677
2	132.963
3	107.249
4	81.535
5	55.82
6	184.392
7	210.106
8	235.82
9	261.535
10	287.249
11	312.963

12	338.677
13	30.106
14	4.392

Orbital Plane 2:

Question	Response
Number of Satellites in Plane	14
Inclination Angle	98.6047 degrees
Right Ascension of Ascending Node	228.305 degrees
Argument of Perigee	90.0 degrees
Orbital Period	6053.0 seconds
Apogee	809.0 km
Perigee	791.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	20.984
2	355.269
3	329.555
4	303.841
5	278.127
6	252.412
7	226.698
8	200.984

9	175.269
10	149.555
11	123.841
12	98.127
13	72.412
14	46.698

Orbital Plane 3:

Question	Response
Number of Satellites in Plane	14
Inclination Angle	98.6047 degrees
Right Ascension of Ascending Node	252.804 degrees
Argument of Perigee	90.0 degrees
Orbital Period	6053.0 seconds
Apogee	809.0 km
Perigee	791.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	11.877
2	346.162
3	320.448
4	294.734
5	269.02

6	243.305
7	217.591
8	191.877
9	166.162
10	140.448
11	114.734
12	89.02
13	63.305
14	37.591

Orbital Plane 4:

Question	Response
Number of Satellites in Plane	14
Inclination Angle	98.6047 degrees
Right Ascension of Ascending Node	277.303 degrees
Argument of Perigee	90.0 degrees
Orbital Period	6053.0 seconds
Apogee	809.0 km
Perigee	791.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	28.467
2	2.752

3	337.038
4	311.324
5	285.61
6	259.895
7	234.181
8	208.467
9	182.752
10	157.038
11	131.324
12	105.61
13	79.895
14	54.181

Orbital Plane 5:

Question	Response
Number of Satellites in Plane	14
Inclination Angle	98.6047 degrees
Right Ascension of Ascending Node	301.802 degrees
Argument of Perigee	90.0 degrees
Orbital Period	6053.0 seconds
Apogee	809.0 km
Perigee	791.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	19.361
2	353.646
3	327.932
4	302.218
5	276.504
6	250.789
7	225.075
8	199.361
9	173.646
10	147.932
11	122.218
12	96.504
13	70.789
14	45.075

Orbital Plane 6:

Question	Response
Number of Satellites in Plane	14
Inclination Angle	98.6047 degrees
Right Ascension of Ascending Node	326.301 degrees
Argument of Perigee	90.0 degrees
Orbital Period	6053.0 seconds
Apogee	809.0 km
Perigee	791.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees

Active Service Arc End Angle with respect to Ascending Node 360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	35.949
2	10.234
3	344.52
4	318.806
5	293.092
6	267.377
7	241.663
8	215.949
9	190.234
10	164.52
11	138.806
12	113.092
13	87.377
14	61.663

Orbital Plane 7:

Question	Response
Number of Satellites in Plane	14
Inclination Angle	98.6047 degrees
Right Ascension of Ascending Node	350.8 degrees
Argument of Perigee	90.0 degrees
Orbital Period	6053.0 seconds
Apogee	809.0 km

Perigee	791.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	26.844
2	1.129
3	335.415
4	309.701
5	283.987
6	258.272
7	232.558
8	206.844
9	181.129
10	155.415
11	129.701
12	103.987
13	78.272
14	52.558

Orbital Plane 8:

Question	Response
Number of Satellites in Plane	14
Inclination Angle	98.6047 degrees
Right Ascension of Ascending Node	15.299 degrees

Argument of Perigee	90.0 degrees
Orbital Period	6053.0 seconds
Apogee	809.0 km
Perigee	791.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	43.43
2	17.715
3	352.001
4	326.287
5	300.573
6	274.858
7	249.144
8	223.43
9	197.715
10	172.001
11	146.287
12	120.573
13	94.858
14	69.144

Orbital Plane 9:

Question	Response
Number of Satellites in Plane	1

Inclination Angle	98.3985 degrees
Right Ascension of Ascending Node	203.806 degrees
Argument of Perigee	90.0 degrees
Orbital Period	5989.0 seconds
Apogee	750.0 km
Perigee	750.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	0.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0

Orbital Plane 10:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	98.3985 degrees
Right Ascension of Ascending Node	228.305 degrees
Argument of Perigee	90.0 degrees
Orbital Period	5989.0 seconds
Apogee	750.0 km
Perigee	750.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	0.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0

Orbital Plane 11:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	98.3985 degrees
Right Ascension of Ascending Node	252.804 degrees
Argument of Perigee	90.0 degrees
Orbital Period	5989.0 seconds
Apogee	750.0 km
Perigee	750.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	0.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0

Orbital Plane 12:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	98.3985 degrees
Right Ascension of Ascending Node	277.303 degrees

Argument of Perigee	90.0 degrees
Orbital Period	5989.0 seconds
Apogee	750.0 km
Perigee	750.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	0.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0

Orbital Plane 13:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	98.3985 degrees
Right Ascension of Ascending Node	301.802 degrees
Argument of Perigee	90.0 degrees
Orbital Period	5989.0 seconds
Apogee	750.0 km
Perigee	750.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	0.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
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1	0.0
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Orbital Plane 14:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	98.3985 degrees
Right Ascension of Ascending Node	326.301 degrees
Argument of Perigee	90.0 degrees
Orbital Period	5989.0 seconds
Apogee	750.0 km
Perigee	750.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	0.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0

Orbital Plane 15:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	98.3985 degrees
Right Ascension of Ascending Node	350.8 degrees
Argument of Perigee	90.0 degrees
Orbital Period	5989.0 seconds
Apogee	750.0 km

Perigee	750.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	0.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0

Orbital Plane 16:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	98.3985 degrees
Right Ascension of Ascending Node	15.299 degrees
Argument of Perigee	90.0 degrees
Orbital Period	5989.0 seconds
Apogee	750.0 km
Perigee	750.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	0.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0

Receiving Beams 1:

Question	Response
Beam ID	SRH1
Receive Beam Frequency	1215.0 MHz -1300.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	39.24 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	10.1 dB/K
Min. Saturation Flux Density	-147.1 dBW/m ²
Max. Saturation Flux Density	-63.16 dBW/m ²
Co- or Cross Polar Mode	C
Service Area Description	XAX

Receiving Beams 2:

Question	Response
Beam ID	SRV1
Receive Beam Frequency	1215.0 MHz -1300.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	39.24 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	10.1 dB/K
Min. Saturation Flux Density	-147.1 dBW/m2
Max. Saturation Flux Density	-63.16 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XAX

Receiving Beams 3:

Question	Response
Beam ID	URR1
Receive Beam Frequency	12750.0 MHz -13250.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	27.59 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	0.96 dB/K
Min. Saturation Flux Density	-116.5 dBW/m2
Max. Saturation Flux Density	-93.48 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XAX

Receiving

Beams 4:

Question	Response
Beam ID	URR2
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	28.37 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	1.75 dB/K
Min. Saturation Flux Density	-116.5 dBW/m2
Max. Saturation Flux Density	-93.48 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XAX

Receiving Beams 5:

Question	Response
Beam ID	GUR1
Receive Beam Frequency	27500.0 MHz -29100.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	36.24 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.12 dB/K
Min. Saturation Flux Density	-83.3 dBW/m2
Max. Saturation Flux Density	-73.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XAX

Receiving Beams 6:

Question	Response
Beam ID	GUR2
Receive Beam Frequency	29100.0 MHz -29500.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	36.36 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.24 dB/K
Min. Saturation Flux Density	-83.3 dBW/m2
Max. Saturation Flux Density	-73.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XAX

Receiving Beams 7:

Question	Response
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Beam ID	GUR3
Receive Beam Frequency	29500.0 MHz -30000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	36.51 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.38 dB/K
Min. Saturation Flux Density	-83.3 dBW/m2
Max. Saturation Flux Density	-73.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XAX

Receiving Beams 8:

Question	Response
Beam ID	TCR
Receive Beam Frequency	29980.0 MHz -30000.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-22.1 dB/K
Min. Saturation Flux Density	-112.0 dBW/m2
Max. Saturation Flux Density	-102.4 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XAX

Receiving Beams 9:

Question	Response
Beam ID	URL1
Receive Beam Frequency	12750.0 MHz -13250.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	27.59 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	0.96 dB/K
Min. Saturation Flux Density	-116.5 dBW/m2
Max. Saturation Flux Density	-93.48 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XAX

Receiving Beams 10:

Question	Response
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Beam ID	URL2
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	28.37 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	1.75 dB/K
Min. Saturation Flux Density	-116.5 dBW/m2
Max. Saturation Flux Density	-93.48 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XAX

Receiving Beams 11:

Question	Response
Beam ID	GUL1
Receive Beam Frequency	27500.0 MHz -29100.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	36.24 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.12 dB/K
Min. Saturation Flux Density	-83.3 dBW/m2
Max. Saturation Flux Density	-73.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XAX

**Receiving
Beams 12:**

Question	Response
Beam ID	GUL2
Receive Beam Frequency	29100.0 MHz -29500.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	36.36 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.24 dB/K
Min. Saturation Flux Density	-83.3 dBW/m2
Max. Saturation Flux Density	-73.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XAX

**Receiving
Beams 13:**

Question	Response
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Beam ID	GUL3
Receive Beam Frequency	29500.0 MHz -30000.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	36.51 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.38 dB/K
Min. Saturation Flux Density	-83.3 dBW/m2
Max. Saturation Flux Density	-73.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XAX

Receiving Beams 14:

Question	Response
Beam ID	TCL
Receive Beam Frequency	29980.0 MHz -30000.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-22.1 dB/K
Min. Saturation Flux Density	-112.0 dBW/m2
Max. Saturation Flux Density	-102.4 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XAX

Receiving Channels (39)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
UU02	500.0	14250.0	Service Link
CMD5	2.0	29989.0	TT&C
CMD2	2.0	29983.0	TT&C
CMD3	2.0	29985.0	TT&C
UU24	125.0	13187.5	Service Link
UU23	125.0	13062.5	Service Link
UU22	125.0	12937.5	Service Link
UU21	125.0	12812.5	Service Link
UU14	250.0	14375.0	Service Link
UU13	250.0	14125.0	Service Link
GU2	400.0	29300.0	Feeder Link
GU3	500.0	29750.0	Feeder Link
UU01	500.0	13000.0	Service Link
CMD4	2.0	29987.0	TT&C
SR23	16.06	1250.0	Service Link
SR16	32.06	1280.0	Service Link
SR15	32.06	1270.0	Service Link
SR14	32.06	1260.0	Service Link
SR13	32.06	1250.0	Service Link
SR26	16.06	1280.0	Service Link
SR25	16.06	1270.0	Service Link
SR24	16.06	1260.0	Service Link
SR22	16.06	1240.0	Service Link
SR11	32.06	1233.0	Service Link

SR21	16.06	1233.0	Service Link
UU28	125.0	14437.5	Service Link
UU27	125.0	14312.5	Service Link
UU26	125.0	14187.5	Service Link
UU25	125.0	14062.5	Service Link
UU12	250.0	13125.0	Service Link
UU11	250.0	12875.0	Service Link
CMDA	2.0	29999.0	TT&C
CMD8	2.0	29995.0	TT&C
GU1	1600.0	28300.0	Feeder Link
CMD9	2.0	29997.0	TT&C
CMD6	2.0	29991.0	TT&C
CMD7	2.0	29993.0	TT&C
SR12	32.06	1240.0	Service Link
CMD1	2.0	29981.0	TT&C

Transmitting Beams 1:

Question	Response
Beam ID	GTL6
Transmit Beam Frequency	25500.0 MHz -27000.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	35.13 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-43.56 dBW/Hz
Max. Transmit EIRP	47.41 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-129.2	-122.8	-120.7	-119.5	-118.4	-112.6

Transmitting Beams 2:

Question	Response
Beam ID	GTR6
Transmit Beam Frequency	25500.0 MHz -27000.0 MHz

Beam Type	Steerable
Polarization	RHCP
Peak Gain	35.13 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-43.56 dBW/Hz
Max. Transmit EIRP	47.41 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-129.2	-122.8	-120.7	-119.5	-118.4	-112.6

Transmitting Beams 3:

Question	Response
Beam ID	STH1
Transmit Beam Frequency	1215.0 MHz -1300.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	37.42 dBi
Antenna Pointing Error	0.1 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-10.9 dBW/Hz
Max. Transmit EIRP	72.22 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
4.0 kHz	-148.3	-146.3	-143.8	-141.0	-137.6	-103.9

Transmitting Beams 4:

Question	Response
Beam ID	STV1
Transmit Beam Frequency	1215.0 MHz -1300.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	37.42 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-10.9 dBW/Hz

Max. Transmit EIRP	72.22 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-148.3	-146.3	-143.8	-141.0	-137.6	-103.9

Transmitting Beams 5:

Question	Response
Beam ID	GTR1
Transmit Beam Frequency	17800.0 MHz -18300.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	31.95 dBi
Antenna Pointing Error	1.0 degrees
Antenna Rotational Error	1.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-47.93 dBW/Hz
Max. Transmit EIRP	38.26 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-133.6	-127.2	-125.1	-123.9	-122.8	-117.0

Transmitting Beams 6:

Question	Response
Beam ID	GTR2
Transmit Beam Frequency	18300.0 MHz -18600.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	31.95 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-47.93 dBW/Hz
Max. Transmit EIRP	36.04 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-133.6	-127.2	-125.1	-123.9	-122.8	-117.0

Transmitting Beams 7:

Question	Response
Beam ID	GTR3
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	32.55 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-47.93 dBW/Hz
Max. Transmit EIRP	38.26 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-133.6	-127.2	-125.1	-123.9	-122.8	-117.0

Transmitting Beams 8:

Question	Response
Beam ID	GTR4
Transmit Beam Frequency	19300.0 MHz -19700.0 MHz

Beam Type	Steerable
Polarization	RHCP
Peak Gain	32.55 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-47.93 dBW/Hz
Max. Transmit EIRP	37.29 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-133.6	-127.2	-125.1	-123.9	-122.8	-117.0

Transmitting Beams 9:

Question	Response
Beam ID	GTR5
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	32.55 dBi
Antenna Pointing Error	0.1 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-47.93 dBW/Hz
Max. Transmit EIRP	38.26 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-133.6	-127.2	-125.1	-123.9	-122.8	-117.0

Transmitting Beams 10:

Question	Response
Beam ID	UTR1
Transmit Beam Frequency	10700.0 MHz -11700.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	34.27 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-52.6 dBW/Hz

Max. Transmit EIRP	36.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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:
4.0 kHz	-157.2	-155.2	-153.7	-152.5	-151.4	-145.6

Transmitting Beams 11:

Question	Response
Beam ID	UTR2
Transmit Beam Frequency	11700.0 MHz -12200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	34.27 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-52.6 dBW/Hz
Max. Transmit EIRP	33.58 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

Max. Power Flux Density

Information not provided.

Transmitting Beams 12:

Question	Response
Beam ID	UTR3
Transmit Beam Frequency	12200.0 MHz -12700.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	34.27 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-52.6 dBW/Hz
Max. Transmit EIRP	33.58 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

Max. Power Flux Density

	* 0° - 1° (dBW/m ² /BW):	* 1° - 2° (dBW/m ² /BW):	* 2° - 3° (dBW/m ² /BW):	* 3° - 4° (dBW/m ² /BW):	* 4° - 5° (dBW/m ² /BW):
4.0 kHz	-158.6	-158.3	-157.9	-157.6	-157.2

Transmitting Beams 13:

Question	Response
Beam ID	TTL
Transmit Beam Frequency	20180.0 MHz -20200.0 MHz

Beam Type	Fixed
Polarization	LHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-57.06 dBW/Hz
Max. Transmit EIRP	2.94 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-136.9	-135.5	-134.2	-133.0	-131.9	-126.1

Transmitting Beams 14:

Question	Response
Beam ID	TTR
Transmit Beam Frequency	20180.0 MHz -20200.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.1 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-57.06 dBW/Hz
Max. Transmit EIRP	2.94 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-136.9	-135.5	-134.2	-133.0	-131.9	-126.1

Transmitting Beams 15:

Question	Response
Beam ID	BTR1
Transmit Beam Frequency	10700.0 MHz -11700.0 MHz
Beam Type	Shapeable
Polarization	RHCP
Peak Gain	6.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-52.56 dBW/Hz

Max. Transmit EIRP	6.64 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

Max. Power Flux Density

	* 0° - 5° (dBW/m ²)	* 5° - 10° (dBW/m ²)	* 10° - 15° (dBW/m ²)	* 15° - 20° (dBW/m ²)	* 20° - 25° (dBW/m ²)	* 25° - 90° (dBW/m ²)
* BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
4.0 kHz	-157.1	-155.1	-154.5	-154.5	-154.5	-154.5

Transmitting Beams 16:

Question	Response
Beam ID	BTR2
Transmit Beam Frequency	11700.0 MHz -12200.0 MHz
Beam Type	Shapeable
Polarization	RHCP
Peak Gain	6.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-52.56 dBW/Hz
Max. Transmit EIRP	6.64 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

Max. Power Flux Density

Information not provided.

Transmitting Beams 17:

Question	Response
Beam ID	BTR3
Transmit Beam Frequency	12200.0 MHz -12700.0 MHz
Beam Type	Shapeable
Polarization	RHCP
Peak Gain	6.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-52.56 dBW/Hz
Max. Transmit EIRP	6.64 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

Max. Power Flux Density

*	* 0° - 1° (dBW/m ² /BW):	* 1° - 2° (dBW/m ² /BW):	* 2° - 3° (dBW/m ² /BW):	* 3° - 4° (dBW/m ² /BW):	* 4° - 5° (dBW/m ² /BW):
4.0 kHz	-158.6	-158.6	-157.9	-157.5	-157.1

Transmitting Beams 18:

Question	Response
Beam ID	BTL1
Transmit Beam Frequency	10700.0 MHz -11700.0 MHz

Beam Type	Shapeable
Polarization	LHCP
Peak Gain	6.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-52.56 dBW/Hz
Max. Transmit EIRP	6.64 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
4.0 kHz	-157.1	-155.1	-154.5	-154.5	-154.5	-154.5

Transmitting Beams 19:

Question	Response
Beam ID	BTL2
Transmit Beam Frequency	11700.0 MHz -12200.0 MHz
Beam Type	Shapeable
Polarization	LHCP
Peak Gain	6.0 dBi
Antenna Pointing Error	0.1 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-52.56 dBW/Hz
Max. Transmit EIRP	6.64 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

Max. Power Flux Density

Information not provided.

Transmitting Beams 20:

Question	Response
Beam ID	BTL3
Transmit Beam Frequency	12200.0 MHz -12700.0 MHz
Beam Type	Shapeable
Polarization	LHCP
Peak Gain	6.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-52.56 dBW/Hz
Max. Transmit EIRP	6.64 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

Max. Power Flux Density

	* 0° - 1°	* 1° - 2°	* 2° - 3°	* 3° - 4°	* 4° - 5°
*	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):
4.0	-158.6	-158.6	-157.9	-157.5	-157.1
kHz					

Transmitting Beams 21:

Question	Response
Beam ID	UTL1
Transmit Beam Frequency	10700.0 MHz -11700.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	34.27 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-52.6 dBW/Hz
Max. Transmit EIRP	36.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
4.0	-157.2	-155.2	-153.7	-152.5	-151.4	-145.6
kHz						

Transmitting Beams 22:

Question	Response
Beam ID	UTL2
Transmit Beam Frequency	11700.0 MHz -12200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	34.27 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-52.6 dBW/Hz
Max. Transmit EIRP	33.58 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

Max. Power Flux Density

Information not provided.

Transmitting Beams 23:

Question	Response
Beam ID	UTL3
Transmit Beam Frequency	12200.0 MHz -12700.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	34.27 dBi
Antenna Pointing Error	0.1 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-52.6 dBW/Hz
Max. Transmit EIRP	33.58 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

Max. Power Flux Density

	* 0° - 1° (dBW/m ² /BW):	* 1° - 2° (dBW/m ² /BW):	* 2° - 3° (dBW/m ² /BW):	* 3° - 4° (dBW/m ² /BW):	* 4° - 5° (dBW/m ² /BW):
4.0 kHz	-158.6	-158.3	-157.9	-157.6	-157.2

Transmitting Beams 24:

Question	Response
Beam ID	GTL1
Transmit Beam Frequency	17800.0 MHz -18300.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	31.95 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-47.93 dBW/Hz

Max. Transmit EIRP	38.26 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-133.6	-127.2	-125.1	-123.9	-122.8	-117.0

Transmitting Beams 25:

Question	Response
Beam ID	GTL2
Transmit Beam Frequency	18300.0 MHz -18600.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	31.95 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-47.93 dBW/Hz
Max. Transmit EIRP	36.04 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-133.6	-127.2	-125.1	-123.9	-122.8	-117.0

Transmitting Beams 26:

Question	Response
Beam ID	GTL3
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	32.55 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-47.93 dBW/Hz
Max. Transmit EIRP	38.26 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-133.6	-127.2	-125.1	-123.9	-122.8	-117.0

Transmitting Beams 27:

Question	Response
Beam ID	GTL4
Transmit Beam Frequency	19300.0 MHz -19700.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	32.55 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-47.93 dBW/Hz
Max. Transmit EIRP	37.29 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-133.6	-127.2	-125.1	-123.9	-122.8	-117.0

Transmitting Beams 28:

Question	Response
Beam ID	GTL5
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz

Beam Type	Steerable
Polarization	LHCP
Peak Gain	32.55 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-47.93 dBW/Hz
Max. Transmit EIRP	38.26 dBW
Co- or Cross Polar Mode	C
Service Area Description	XAX

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	-133.6	-127.2	-125.1	-123.9	-122.8	-117.0

Transmitting Channels (36)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
SR14	32.06	1260.0	Service Link
SR13	32.06	1250.0	Service Link
B4	1.0	12699.5	Service Link
SR11	32.06	1233.0	Service Link
TLM3	2.0	20185.0	TT&C
UD3	499.0	11949.5	Service Link
TLM7	2.0	20193.0	TT&C
GD6	1500.0	26250.0	Feeder Link
TLM8	2.0	20195.0	TT&C
B2	1.0	11699.5	Service Link
UD2	499.0	11449.5	Service Link
UD1	499.0	10949.5	Service Link
TLM2	2.0	20183.0	TT&C
GD5	500.0	19950.0	Feeder Link
UD4	499.0	12449.5	Service Link
B1	1.0	11199.5	Service Link
GD4	400.0	19500.0	Feeder Link
GD3	500.0	19050.0	Feeder Link
TLM1	2.0	20181.0	TT&C
TLMA	2.0	20199.0	TT&C
TLM9	2.0	20197.0	TT&C
B3	1.0	12199.5	Service Link
TLM6	2.0	20191.0	TT&C
TLM5	2.0	20189.0	TT&C

TLM4	2.0	20187.0	TT&C
GD2	300.0	18450.0	Feeder Link
GD1	500.0	18050.0	Feeder Link
SR26	16.06	1280.0	Service Link
SR25	16.06	1270.0	Service Link
SR24	16.06	1260.0	Service Link
SR23	16.06	1250.0	Service Link
SR22	16.06	1240.0	Service Link
SR21	16.06	1233.0	Service Link
SR16	32.06	1280.0	Service Link
SR15	32.06	1270.0	Service Link
SR12	32.06	1240.0	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?	Yes
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>GTR1-Contour.gxt</u>	GTR1	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>GTR1-Coverage.gxt</u>	GTR1	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
<u>GTR2-Coverage.gxt</u>	GTR2	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
<u>GTR2-Contour.gxt</u>	GTR2	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>UTL1_Coverage.gxt</u>	UTL1	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were scanned within the full coverage area of 60.36 degrees maximum beam scan. Positive contours reflect phased array scan loss.
<u>UTL1_60_Contour.gxt</u>	UTL1	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to 60.36 degrees
<u>URL1.gxt</u>	URL1	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir

<u>URL1-MultiBeam.gxt</u>	URL1	NGSO Antenna Gain Data	GXT file (*.gxt)	Area map showing all spot beams depicted on the surface of the Earth
<u>UTL2_Coverage.gxt</u>	UTL2	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were scanned within the full coverage area of 60.36 degrees maximum beam scan. Positive contours reflect phased array scan loss.
<u>UTL2_60_Contour.gxt</u>	UTL2	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to 60.36 degrees
<u>GUL1-Contour.gxt</u>	GUL1	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Steered to Nadir
<u>GUL1-Coverage.gxt</u>	GUL1	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
<u>UTL3_Coverage.gxt</u>	UTL3	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were scanned within the full coverage area of 60.36 degrees maximum beam scan. Positive contours reflect phased array scan loss.
<u>UTL3_60_Contour.gxt</u>	UTL3	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to 60.36 degrees

<u>GUL2-Coverage.gxt</u>	GUL2	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
<u>GUL2-Contour.gxt</u>	GUL2	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Steered to Nadir
<u>GUL3-Contour.gxt</u>	GUL3	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Steered to Nadir
<u>GUL3-Coverage.gxt</u>	GUL3	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
<u>URL2.gxt</u>	URL2	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>URL2-MultiBeam.gxt</u>	URL2	NGSO Antenna Gain Data	GXT file (*.gxt)	Area map showing all spot beams depicted on the surface of the Earth
<u>TCL-Contour.gxt</u>	TCL	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>GTL1-Coverage.gxt</u>	GTL1	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.

<u>GTL1-Contour.gxt</u>	GTL1	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Steered to Nadir
<u>GTL2-Coverage.gxt</u>	GTL2	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
<u>GTL2-Contour.gxt</u>	GTL2	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Steered to Nadir
<u>GTL4-Coverage.gxt</u>	GTL4	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
<u>GTL4-Contour.gxt</u>	GTL4	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Steered to Nadir
<u>GTL3-Coverage.gxt</u>	GTL3	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
<u>GTL3-Contour.gxt</u>	GTL3	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Steered to Nadir
<u>GTL5-Coverage.gxt</u>	GTL5	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.

<u>GTL5-Contour.gxt</u>	GTL5	NGSO Antenna Gain Data	GXT file (*. gxt)	Contour Plot of Beam Steered to Nadir
<u>TCR-Contour.gxt</u>	TCR	NGSO Antenna Gain Data	GXT file (*. gxt)	Contour Plot of Beam Scanned to Nadir
<u>GUR1-Contour.gxt</u>	GUR1	NGSO Antenna Gain Data	GXT file (*. gxt)	Contour Plot of Beam Steered to Nadir
<u>GUR2-Contour.gxt</u>	GUR2	NGSO Antenna Gain Data	GXT file (*. gxt)	Contour Plot of Beam Steered to Nadir
<u>GUR2-Coverage.gxt</u>	GUR2	NGSO Antenna Gain Data	GXT file (*. gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
<u>SRH1_41_Contour.gxt</u>	SRH1	NGSO Antenna Gain Data	GXT file (*. gxt)	Contour Plot of Beam Scanned to 41 degrees
<u>SRH1_Coverage.gxt</u>	SRH1	NGSO Antenna Gain Data	GXT file (*. gxt)	Coverage plots showing contours if beam were scanned within the full coverage area of 41 degrees maximum beam scan. Positive contours reflect phased array scan loss.
<u>SRV1_41_Contour.gxt</u>	SRV1	NGSO Antenna Gain Data	GXT file (*. gxt)	Contour Plot of Beam Scanned to 41 degrees

<u>SRV1_Coverage.gxt</u>	SRV1	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were scanned within the full coverage area of 41 degrees maximum beam scan. Positive contours reflect phased array scan loss.
<u>URR1-MultiBeam.gxt</u>	URR1	NGSO Antenna Gain Data	GXT file (*.gxt)	Area map showing all spot beams depicted on the surface of the Earth
<u>URR1.gxt</u>	URR1	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>URR2.gxt</u>	URR2	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>URR2-MultiBeam.gxt</u>	URR2	NGSO Antenna Gain Data	GXT file (*.gxt)	Area map showing all spot beams depicted on the surface of the Earth
<u>STH1_41_Contour.gxt</u>	STH1	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to 41 degrees
<u>STH1_Coverage.gxt</u>	STH1	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were scanned within the full coverage area of 41 degrees maximum beam scan. Positive contours reflect phased array scan loss.

<u>GTL6-Coverage.gxt</u>	GTL6	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
<u>GTL6-Contour.gxt</u>	GTL6	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Steered to Nadir
<u>UTR1_Coverage.gxt</u>	UTR1	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were scanned within the full coverage area of 60.36 degrees maximum beam scan. Positive contours reflect phased array scan loss.
<u>UTR1_60_Contour.gxt</u>	UTR1	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to 60.36 degrees
<u>GTR6-Coverage.gxt</u>	GTR6	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
<u>GTR6-Contour.gxt</u>	GTR6	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>UTR3_Coverage.gxt</u>	UTR3	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were scanned within the full coverage area of 60.36 degrees maximum beam scan. Positive contours reflect phased array scan loss.

<u>UTR3_60_Contour.gxt</u>	UTR3	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to 60.36 degrees
<u>TTL-Contour.gxt</u>	TTL	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>TTR-Contour.gxt</u>	TTR	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>STV1_41_Contour.gxt</u>	STV1	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to 41 degrees
<u>STV1_Coverage.gxt</u>	STV1	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were scanned within the full coverage area of 41 degrees maximum beam scan. Positive contours reflect phased array scan loss.
<u>UTR2_Coverage.gxt</u>	UTR2	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were scanned within the full coverage area of 60.36 degrees maximum beam scan. Positive contours reflect phased array scan loss.
<u>UTL2_60_Contour.gxt</u>	UTR2	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to 60.36 degrees
<u>GUR3-Contour.gxt</u>	GUR3	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Steered to Nadir

<u>GUL3-Coverage.gxt</u>	GUR3	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
<u>BTL2-Contour.gxt</u>	BTL2	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>BTR1-Contour.gxt</u>	BTR1	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>BTR2-Contour.gxt</u>	BTR2	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>BTL1-Contour.gxt</u>	BTL1	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>BTR3-Contour.gxt</u>	BTR3	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>BTL3-Contour.gxt</u>	BTL3	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>GTR3-Contour.gxt</u>	GTR3	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>GTR3-Coverage.gxt</u>	GTR3	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.

<u>GTR4-Coverage.gxt</u>	GTR4	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
<u>GTR4-Contour.gxt</u>	GTR4	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>GTR5-Contour.gxt</u>	GTR5	NGSO Antenna Gain Data	GXT file (*.gxt)	Contour Plot of Beam Scanned to Nadir
<u>GTR5-Coverage.gxt</u>	GTR5	NGSO Antenna Gain Data	GXT file (*.gxt)	Coverage plots showing contours if beam were steered within the full coverage area of 60.36 degrees maximum beam scan angle.
