



312 File Number: **SATMPL2020052600053**

Filing Description

Question	Response
Description	Application to Modify Petition for Declaratory Ruling to Grant Access to the U.S. Market for Telesat NGSO Constellation

Satellite
Information

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	Telesat LEO 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 (5)

Nature of service	Description	Frequency Band(s)	Mode Type
Fixed-Satellite Service		17800.0 MHz -18600.0 MHz	Transmit
Fixed-Satellite Service		18800.0 MHz -19300.0 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		29500.0 MHz -30000.0 MHz	Receive

**Orbital
Information For
Non-
Geostationary
Satellites**

Question	Response
Total Number of Satellites in the active constellation	1671
Orbit Epoch Date	01/01/2017
Celestial Reference Body	Earth

Orbital Plane 1:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	93.3 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	17.4
2	349.7
3	322.1
4	294.4
5	266.7
6	239.0
7	211.3
8	183.6
9	155.9
10	128.2
11	100.5
12	72.8
13	45.1

Orbital Plane 2:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	106.7 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	336.4
2	308.7
3	281.0
4	253.3
5	225.6
6	197.9
7	170.3
8	142.6
9	114.9
10	87.2
11	59.5
12	31.8
13	4.1

Orbital Plane 3:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	120.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	18.5
2	46.2
3	73.8
4	101.5
5	129.2
6	156.9
7	184.6
8	212.3
9	240.0
10	267.7
11	295.4
12	323.1

13	350.8
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Orbital Plane 4:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	133.3 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	337.4
2	309.7
3	282.1
4	254.4
5	226.7
6	199.0
7	171.3
8	143.6
9	115.9
10	88.2
11	60.5

12	32.8
13	5.1

Orbital Plane 5:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	146.7 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.8
2	324.1
3	296.4
4	268.7
5	241.0
6	213.3
7	185.6
8	157.9
9	130.3
10	102.6

11	74.9
12	47.2
13	19.5

Orbital Plane 6:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	160.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	338.5
2	310.8
3	283.1
4	255.4
5	227.7
6	200.0
7	172.3
8	144.6
9	116.9

10	89.2
11	61.5
12	33.8
13	6.2

Orbital Plane 7:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	173.3 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	352.8
2	325.1
3	297.4
4	269.7
5	242.1
6	214.4
7	186.7
8	159.0

9	131.3
10	103.6
11	75.9
12	48.2
13	20.5

Orbital Plane 8:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	186.7 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	339.5
2	311.8
3	284.1
4	256.4
5	228.7
6	201.0
7	173.3

8	145.6
9	117.9
10	90.3
11	62.6
12	34.9
13	7.2

Orbital Plane 9:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	200.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	353.8
2	326.2
3	298.5
4	270.8
5	243.1
6	215.4

7	187.7
8	160.0
9	132.3
10	104.6
11	76.9
12	49.2
13	21.5

Orbital Plane 10:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	213.3 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	340.5
2	312.8
3	285.1
4	257.4
5	229.7

6	202.1
7	174.4
8	146.7
9	119.0
10	91.3
11	63.6
12	35.9
13	8.2

Orbital Plane 11:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	226.7 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.3 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	354.9
2	327.2
3	299.5
4	271.8

5	244.1
6	216.4
7	188.7
8	161.0
9	133.3
10	105.6
11	77.9
12	50.3
13	22.6

Orbital Plane 12:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	240.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	341.5
2	313.8
3	286.2

4	258.5
5	230.8
6	203.1
7	175.4
8	147.7
9	120.0
10	92.3
11	64.6
12	36.9
13	9.2

Orbital Plane 13:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	253.3 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.9
2	328.2

3	300.5
4	272.8
5	245.1
6	217.4
7	189.7
8	162.1
9	134.4
10	106.7
11	79.0
12	51.3
13	23.6

Orbital Plane 14:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	266.7 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	342.6

2	314.9
3	287.2
4	259.5
5	231.8
6	204.1
7	176.4
8	148.7
9	121.0
10	93.3
11	65.6
12	37.9
13	10.3

Orbital Plane 15:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	280.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
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1	356.9
2	329.2
3	301.5
4	273.8
5	246.2
6	218.5
7	190.8
8	163.1
9	135.4
10	107.7
11	80.0
12	52.3
13	24.6

Orbital Plane 16:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	293.3 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	343.6
2	315.9
3	288.2
4	260.5
5	232.8
6	205.1
7	177.4
8	149.7
9	122.1
10	94.4
11	66.7
12	39.0
13	11.3

Orbital Plane 17:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	306.7 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	357.9
2	330.3
3	302.6
4	274.9
5	247.2
6	219.5
7	191.8
8	164.1
9	136.4
10	108.7
11	81.0
12	53.3
13	25.6

Orbital Plane 18:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	320.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	344.6
2	316.9
3	289.2
4	261.5
5	233.8
6	206.2
7	178.5
8	150.8
9	123.1
10	95.4
11	67.7
12	40.0
13	12.3

Orbital Plane 19:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	333.3 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.3 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	359.0
2	331.3
3	303.6
4	275.9
5	248.2
6	220.5
7	192.8
8	165.1
9	137.4
10	109.7
11	82.1
12	54.4
13	26.7

Orbital Plane 20:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	346.7 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	345.6
2	317.9
3	290.3
4	262.6
5	234.9
6	207.2
7	179.5
8	151.8
9	124.1
10	96.4
11	68.7
12	41.0
13	13.3

Orbital Plane 21:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	349.1
2	338.2
3	327.3
4	316.4
5	305.5
6	294.5
7	283.6
8	272.7
9	261.8
10	250.9
11	240.0
12	229.1
13	218.2
14	207.3
15	196.4
16	185.5
17	174.5
18	163.6
19	152.7
20	141.8
21	130.9
22	120.0
23	109.1
24	98.2

25	87.3
26	76.4
27	65.5
28	54.5
29	43.6
30	32.7
31	21.8
32	10.9
33	0.0

Orbital Plane 22:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	9.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.6
2	344.7
3	333.8

4	322.9
5	312.0
6	301.1
7	290.2
8	279.3
9	268.4
10	257.5
11	246.5
12	235.6
13	224.7
14	213.8
15	202.9
16	192.0
17	181.1
18	170.2
19	159.3
20	148.4
21	137.5
22	126.5
23	115.6
24	104.7
25	93.8
26	82.9
27	72.0
28	61.1
29	50.2

30	39.3
31	28.4
32	17.5
33	6.5

Orbital Plane 23:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	18.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.3
2	340.4
3	329.5
4	318.5
5	307.6
6	296.7
7	285.8
8	274.9

9	264.0
10	253.1
11	242.2
12	231.3
13	220.4
14	209.5
15	198.5
16	187.6
17	176.7
18	165.8
19	154.9
20	144.0
21	133.1
22	122.2
23	111.3
24	100.4
25	89.5
26	78.5
27	67.6
28	56.7
29	45.8
30	34.9
31	24.0
32	13.1
33	2.2

Orbital Plane 24:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	27.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	357.8
2	346.9
3	336.0
4	325.1
5	314.2
6	303.3
7	292.4
8	281.5
9	270.5
10	259.6
11	248.7
12	237.8
13	226.9
14	216.0

15	205.1
16	194.2
17	183.3
18	172.4
19	161.5
20	150.5
21	139.6
22	128.7
23	117.8
24	106.9
25	96.0
26	85.1
27	74.2
28	63.3
29	52.4
30	41.5
31	30.5
32	19.6
33	8.7

Orbital Plane 25:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	36.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds

Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	309.8
2	298.9
3	288.0
4	277.1
5	266.2
6	255.3
7	244.4
8	233.5
9	222.5
10	211.6
11	200.7
12	189.8
13	178.9
14	168.0
15	157.1
16	146.2
17	135.3
18	124.4
19	113.5
20	102.5

21	91.6
22	80.7
23	69.8
24	58.9
25	48.0
26	37.1
27	26.2
28	15.3
29	4.4
30	353.5
31	342.5
32	331.6
33	320.7

Orbital Plane 26:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	45.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0
2	349.1
3	338.2
4	327.3
5	316.4
6	305.5
7	294.5
8	283.6
9	272.7
10	261.8
11	250.9
12	240.0
13	229.1
14	218.2
15	207.3
16	196.4
17	185.5
18	174.5
19	163.6
20	152.7
21	141.8
22	130.9
23	120.0
24	109.1
25	98.2

26	87.3
27	76.4
28	65.5
29	54.5
30	43.6
31	32.7
32	21.8
33	10.9

Orbital Plane 27:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	54.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.6
2	344.7
3	333.8
4	322.9

5	312.0
6	301.1
7	290.2
8	279.3
9	268.4
10	257.5
11	246.5
12	235.6
13	224.7
14	213.8
15	202.9
16	192.0
17	181.1
18	170.2
19	159.3
20	148.4
21	137.5
22	126.5
23	115.6
24	104.7
25	93.8
26	82.9
27	72.0
28	61.1
29	50.2
30	39.3

31	28.4
32	17.5
33	6.5

Orbital Plane 28:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	63.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.3
2	340.4
3	329.5
4	318.5
5	307.6
6	296.7
7	285.8
8	274.9
9	264.0

10	253.1
11	242.2
12	231.3
13	220.4
14	209.5
15	198.5
16	187.6
17	176.7
18	165.8
19	154.9
20	144.0
21	133.1
22	122.2
23	111.3
24	100.4
25	89.5
26	78.5
27	67.6
28	56.7
29	45.8
30	34.9
31	24.0
32	13.1
33	2.2

Orbital Plane 29:

Question	Response
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Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	72.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	357.8
2	346.9
3	336.0
4	325.1
5	314.2
6	303.3
7	292.4
8	281.5
9	270.5
10	259.6
11	248.7
12	237.8
13	226.9
14	216.0
15	205.1

16	194.2
17	183.3
18	172.4
19	161.5
20	150.5
21	139.6
22	128.7
23	117.8
24	106.9
25	96.0
26	85.1
27	74.2
28	63.3
29	52.4
30	41.5
31	30.5
32	19.6
33	8.7

Orbital Plane 30:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	81.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km

Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	353.5
2	342.5
3	331.6
4	320.7
5	309.8
6	298.9
7	288.0
8	277.1
9	266.2
10	255.3
11	244.4
12	233.5
13	222.5
14	211.6
15	200.7
16	189.8
17	178.9
18	168.0
19	157.1
20	146.2

21	135.3
22	124.4
23	113.5
24	102.5
25	91.6
26	80.7
27	69.8
28	58.9
29	48.0
30	37.1
31	26.2
32	15.3
33	4.4

Orbital Plane 31:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	90.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	10.9
2	21.8
3	32.7
4	43.6
5	54.5
6	65.5
7	76.4
8	87.3
9	98.2
10	109.1
11	120.0
12	130.9
13	141.8
14	152.7
15	163.6
16	174.5
17	185.5
18	196.4
19	207.3
20	218.2
21	229.1
22	240.0
23	250.9
24	261.8
25	272.7

26	283.6
27	294.5
28	305.5
29	316.4
30	327.3
31	338.2
32	349.1
33	0.0

Orbital Plane 32:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	99.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.6
2	344.7
3	333.8
4	322.9

5	312.0
6	301.1
7	290.2
8	279.3
9	268.4
10	257.5
11	246.5
12	235.6
13	224.7
14	213.8
15	202.9
16	192.0
17	181.1
18	170.2
19	159.3
20	148.4
21	137.5
22	126.5
23	115.6
24	104.7
25	93.8
26	82.9
27	72.0
28	61.1
29	50.2
30	39.3

31	28.4
32	17.5
33	6.5

Orbital Plane 33:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	108.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.3
2	340.4
3	329.5
4	318.5
5	307.6
6	296.7
7	285.8
8	274.9
9	264.0

10	253.1
11	242.2
12	231.3
13	220.4
14	209.5
15	198.5
16	187.6
17	176.7
18	165.8
19	154.9
20	144.0
21	133.1
22	122.2
23	111.3
24	100.4
25	89.5
26	78.5
27	67.6
28	56.7
29	45.8
30	34.9
31	24.0
32	13.1
33	2.2

Orbital Plane 34:

Question

Response

Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	117.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	357.8
2	346.9
3	336.0
4	325.1
5	314.2
6	303.3
7	292.4
8	281.5
9	270.5
10	259.6
11	248.7
12	237.8
13	226.9
14	216.0
15	205.1

16	194.2
17	183.3
18	172.4
19	161.5
20	150.5
21	139.6
22	128.7
23	117.8
24	106.9
25	96.0
26	85.1
27	74.2
28	63.3
29	52.4
30	41.5
31	30.5
32	19.6
33	8.7

Orbital Plane 35:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	126.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km

Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	353.5
2	342.5
3	331.6
4	320.7
5	309.8
6	298.9
7	288.0
8	277.1
9	266.2
10	255.3
11	244.4
12	233.5
13	222.5
14	211.6
15	200.7
16	189.8
17	178.9
18	168.0
19	157.1
20	146.2

21	135.3
22	124.4
23	113.5
24	102.5
25	91.6
26	80.7
27	69.8
28	58.9
29	48.0
30	37.1
31	26.2
32	15.3
33	4.4

Orbital Plane 36:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	135.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0
2	349.1
3	338.2
4	327.3
5	316.4
6	305.5
7	294.5
8	283.6
9	272.7
10	261.8
11	250.9
12	240.0
13	229.1
14	218.2
15	207.3
16	196.4
17	185.5
18	174.5
19	163.6
20	152.7
21	141.8
22	130.9
23	120.0
24	109.1
25	98.2

26	87.3
27	76.4
28	65.5
29	54.5
30	43.6
31	32.7
32	21.8
33	10.9

Orbital Plane 37:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0
2	27.7
3	55.4
4	83.1

5	110.8
6	138.5
7	166.2
8	193.8
9	221.5
10	249.2
11	276.9
12	304.6
13	332.3

Orbital Plane 38:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	13.3 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	346.7
2	319.0
3	291.3

4	263.6
5	235.9
6	208.2
7	180.5
8	152.8
9	125.1
10	97.4
11	69.7
12	42.1
13	14.4

Orbital Plane 39:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	26.7 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	333.3
2	305.6

3	277.9
4	250.3
5	222.6
6	194.9
7	167.2
8	139.5
9	111.8
10	84.1
11	56.4
12	28.7
13	1.0

Orbital Plane 40:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	40.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	15.4

2	43.1
3	70.8
4	98.5
5	126.2
6	153.8
7	181.5
8	209.2
9	236.9
10	264.6
11	347.7
12	320.0
13	292.3

Orbital Plane 41:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	53.5 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
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1	334.4
2	306.7
3	279.0
4	251.3
5	223.6
6	195.9
7	168.2
8	140.5
9	112.8
10	85.1
11	57.4
12	29.7
13	2.1

Orbital Plane 42:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	66.7 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	348.7
2	321.0
3	293.3
4	265.6
5	237.9
6	210.3
7	182.6
8	154.9
9	127.2
10	99.5
11	71.8
12	44.1
13	16.4

Orbital Plane 43:

Question	Response
Number of Satellites in Plane	13
Inclination Angle	99.0 degrees
Right Ascension of Ascending Node	80.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6326.4 seconds
Apogee	1015.0 km
Perigee	1015.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	335.4
2	307.7
3	280.0
4	252.3
5	224.6
6	196.9
7	169.2
8	141.5
9	113.8
10	86.2
11	58.5
12	30.8
13	3.1

Orbital Plane 44:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	144.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.6
2	344.7
3	333.8
4	322.9
5	312.0
6	301.1
7	290.2
8	279.3
9	268.4
10	257.5
11	246.5
12	235.6
13	224.7
14	213.8
15	202.9
16	192.0
17	181.1
18	170.2
19	159.3
20	148.4
21	137.5
22	126.5
23	115.6
24	104.7
25	93.8

26	82.9
27	72.0
28	61.1
29	50.2
30	39.3
31	28.4
32	17.5
33	6.5

Orbital Plane 45:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	153.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.3
2	340.4
3	329.5
4	318.5

5	307.6
6	296.7
7	285.8
8	274.9
9	264.0
10	253.1
11	242.2
12	231.3
13	220.4
14	209.5
15	198.5
16	187.6
17	176.7
18	165.8
19	154.9
20	144.0
21	133.1
22	122.2
23	111.3
24	100.4
25	89.5
26	78.5
27	67.6
28	56.7
29	45.8
30	34.9

31	24.0
32	13.1
33	2.2

Orbital Plane 46:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	162.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	357.8
2	346.9
3	336.0
4	325.1
5	314.2
6	303.3
7	292.4
8	281.5
9	270.5

10	259.6
11	248.7
12	237.8
13	226.9
14	216.0
15	205.1
16	194.2
17	183.3
18	172.4
19	161.5
20	150.5
21	139.6
22	128.7
23	117.8
24	106.9
25	96.0
26	85.1
27	74.2
28	63.3
29	52.4
30	41.5
31	30.5
32	19.6
33	8.7

Orbital Plane 47:

Question	Response
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Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	171.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	353.5
2	342.5
3	331.6
4	320.7
5	309.8
6	298.9
7	288.0
8	277.1
9	266.2
10	255.3
11	244.4
12	233.5
13	222.5
14	211.6
15	200.7

16	189.8
17	178.9
18	168.0
19	157.1
20	146.2
21	135.3
22	124.4
23	113.5
24	102.5
25	91.6
26	80.7
27	69.8
28	58.9
29	48.0
30	37.1
31	26.2
32	15.3
33	4.4

Orbital Plane 48:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	180.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km

Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0
2	349.1
3	338.2
4	327.3
5	316.4
6	305.5
7	294.5
8	283.6
9	272.7
10	261.8
11	250.9
12	240.0
13	229.1
14	218.2
15	207.3
16	196.4
17	185.5
18	174.5
19	163.6
20	152.7

21	141.8
22	130.9
23	120.0
24	109.1
25	98.2
26	87.3
27	76.4
28	65.5
29	54.5
30	43.6
31	32.7
32	21.8
33	10.9

Orbital Plane 49:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	189.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.6
2	344.7
3	333.8
4	322.9
5	312.0
6	301.1
7	290.2
8	279.3
9	268.4
10	257.5
11	246.5
12	235.6
13	224.7
14	213.8
15	202.9
16	192.0
17	181.1
18	170.2
19	159.3
20	148.4
21	137.5
22	126.5
23	115.6
24	104.7
25	93.8

26	82.9
27	72.0
28	61.1
29	50.2
30	39.3
31	28.4
32	17.5
33	6.5

Orbital Plane 50:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	198.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.3
2	340.4
3	329.5
4	318.5

5	307.6
6	296.7
7	285.8
8	274.9
9	264.0
10	253.1
11	242.2
12	231.3
13	220.4
14	209.5
15	198.5
16	187.6
17	176.7
18	165.8
19	154.9
20	144.0
21	133.1
22	122.2
23	111.3
24	100.4
25	89.5
26	78.5
27	67.6
28	56.7
29	45.8
30	34.9

31	24.0
32	13.1
33	2.2

Orbital Plane 51:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	207.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	357.8
2	346.9
3	336.0
4	325.1
5	314.2
6	303.3
7	292.4
8	281.5
9	270.5

10	259.6
11	248.7
12	237.8
13	226.9
14	216.0
15	205.1
16	194.2
17	183.3
18	172.4
19	161.5
20	150.5
21	139.6
22	128.7
23	117.8
24	106.9
25	96.0
26	85.1
27	74.2
28	63.3
29	52.4
30	41.5
31	30.5
32	19.6
33	8.7

Orbital Plane 52:

Question

Response

Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	216.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	353.5
2	342.5
3	331.6
4	320.7
5	309.8
6	298.9
7	288.0
8	277.1
9	266.2
10	255.3
11	244.4
12	233.5
13	222.5
14	211.6
15	200.7

16	189.8
17	178.9
18	168.0
19	157.1
20	146.2
21	135.3
22	124.4
23	113.5
24	102.5
25	91.6
26	80.7
27	69.8
28	58.9
29	48.0
30	37.1
31	26.2
32	15.3
33	4.4

Orbital Plane 53:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	225.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km

Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0
2	349.1
3	338.2
4	327.3
5	316.4
6	305.5
7	294.5
8	283.6
9	272.7
10	261.8
11	250.9
12	240.0
13	229.1
14	218.2
15	207.3
16	196.4
17	185.5
18	174.5
19	163.6
20	152.7

21	141.8
22	130.9
23	120.0
24	109.1
25	98.2
26	87.3
27	76.4
28	65.5
29	54.5
30	43.6
31	32.7
32	21.8
33	10.9

Orbital Plane 54:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	234.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.6
2	344.7
3	333.8
4	322.9
5	312.0
6	301.1
7	290.2
8	279.3
9	268.4
10	257.5
11	246.5
12	235.6
13	224.7
14	213.8
15	202.9
16	192.0
17	181.1
18	170.2
19	159.3
20	148.4
21	137.5
22	126.5
23	115.6
24	104.7
25	93.8

26	82.9
27	72.0
28	61.1
29	50.2
30	39.3
31	28.4
32	17.5
33	6.5

Orbital Plane 55:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	243.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.3
2	340.4
3	329.5
4	318.5

5	307.6
6	296.7
7	285.8
8	274.9
9	264.0
10	253.1
11	242.2
12	231.3
13	220.4
14	209.5
15	198.5
16	187.6
17	176.7
18	165.8
19	154.9
20	144.0
21	133.1
22	122.2
23	111.3
24	100.4
25	89.5
26	78.5
27	67.6
28	56.7
29	45.8
30	34.9

31	24.0
32	13.1
33	2.2

Orbital Plane 56:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	252.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	357.8
2	346.9
3	336.0
4	325.1
5	314.2
6	303.3
7	292.4
8	281.5
9	270.5

10	259.6
11	248.7
12	237.8
13	226.9
14	216.0
15	205.1
16	194.2
17	183.3
18	172.4
19	161.5
20	150.5
21	139.6
22	128.7
23	117.8
24	106.9
25	96.0
26	85.1
27	74.2
28	63.3
29	52.4
30	41.5
31	30.5
32	19.6
33	8.7

Orbital Plane 57:

Question

Response

Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	261.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	353.5
2	342.5
3	331.6
4	320.7
5	309.8
6	298.9
7	288.0
8	277.1
9	266.2
10	255.3
11	244.4
12	233.5
13	222.5
14	211.6
15	200.7

16	189.8
17	178.9
18	168.0
19	157.1
20	146.2
21	135.3
22	124.4
23	113.5
24	102.5
25	91.6
26	80.7
27	69.8
28	58.9
29	48.0
30	37.1
31	26.2
32	15.3
33	4.4

Orbital Plane 58:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	270.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km

Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0
2	349.1
3	338.2
4	327.3
5	316.4
6	305.5
7	294.5
8	283.6
9	272.7
10	261.8
11	250.9
12	240.0
13	229.1
14	218.2
15	207.3
16	196.4
17	185.5
18	174.5
19	163.6
20	152.7

21	141.8
22	130.9
23	120.0
24	109.1
25	98.2
26	87.3
27	76.4
28	65.5
29	54.5
30	43.6
31	32.7
32	21.8
33	10.9

Orbital Plane 59:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	279.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.6
2	344.7
3	333.8
4	322.9
5	312.0
6	301.1
7	290.2
8	279.3
9	268.4
10	257.5
11	246.5
12	235.6
13	224.7
14	213.8
15	202.9
16	192.0
17	181.1
18	170.2
19	159.3
20	148.4
21	137.5
22	126.5
23	115.6
24	104.7
25	93.8

26	82.9
27	72.0
28	61.1
29	50.2
30	39.3
31	28.4
32	17.5
33	6.5

Orbital Plane 60:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	288.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.3
2	340.4
3	329.5
4	318.5

5	307.6
6	296.7
7	285.8
8	274.9
9	264.0
10	253.1
11	242.2
12	231.3
13	220.4
14	209.5
15	198.5
16	187.6
17	176.7
18	165.8
19	154.9
20	144.0
21	133.1
22	122.2
23	111.3
24	100.4
25	89.5
26	78.5
27	67.6
28	56.7
29	45.8
30	34.9

31	24.0
32	13.1
33	2.2

Orbital Plane 61:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	297.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	357.8
2	346.9
3	336.0
4	325.1
5	314.2
6	303.3
7	292.4
8	281.5
9	270.5

10	259.6
11	248.7
12	237.8
13	226.9
14	216.0
15	205.1
16	194.2
17	183.3
18	172.4
19	161.5
20	150.5
21	139.6
22	128.7
23	117.8
24	106.9
25	96.0
26	85.1
27	74.2
28	63.3
29	52.4
30	41.5
31	30.5
32	19.6
33	8.7

Orbital Plane 62:

Question

Response

Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	306.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	353.5
2	342.5
3	331.6
4	320.7
5	309.8
6	298.9
7	288.0
8	277.1
9	266.2
10	255.3
11	244.4
12	233.5
13	222.5
14	211.6
15	200.7

16	189.8
17	178.9
18	168.0
19	157.1
20	146.2
21	135.3
22	124.4
23	113.5
24	102.5
25	91.6
26	80.7
27	69.8
28	58.9
29	48.0
30	37.1
31	26.2
32	15.3
33	4.4

Orbital Plane 63:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	315.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km

Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	360.0
2	349.1
3	338.2
4	327.3
5	316.4
6	305.5
7	294.5
8	283.6
9	272.7
10	261.8
11	250.9
12	240.0
13	229.1
14	218.2
15	207.3
16	196.4
17	185.5
18	174.5
19	163.6
20	152.7

21	141.8
22	130.9
23	120.0
24	109.1
25	98.2
26	87.3
27	76.4
28	65.5
29	54.5
30	43.6
31	32.7
32	21.8
33	10.9

Orbital Plane 64:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	324.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.6
2	344.7
3	333.8
4	322.9
5	312.0
6	301.1
7	290.2
8	279.3
9	268.4
10	257.5
11	246.5
12	235.6
13	224.7
14	213.8
15	202.9
16	192.0
17	181.1
18	170.2
19	159.3
20	148.4
21	137.5
22	126.5
23	115.6
24	104.7
25	93.8

26	82.9
27	72.0
28	61.1
29	50.2
30	39.3
31	28.4
32	17.5
33	6.5

Orbital Plane 65:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	333.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.3
2	340.4
3	329.5
4	318.5

5	307.6
6	296.7
7	285.8
8	274.9
9	264.0
10	253.1
11	242.2
12	231.3
13	220.4
14	209.5
15	198.5
16	187.6
17	176.7
18	165.8
19	154.9
20	144.0
21	133.1
22	122.2
23	111.3
24	100.4
25	89.5
26	78.5
27	67.6
28	56.7
29	45.8
30	34.9

31	24.0
32	13.1
33	2.2

Orbital Plane 66:

Question	Response
Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	342.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	357.8
2	346.9
3	336.0
4	325.1
5	314.2
6	303.3
7	292.4
8	281.5
9	270.5

10	259.6
11	248.7
12	237.8
13	226.9
14	216.0
15	205.1
16	194.2
17	183.3
18	172.4
19	161.5
20	150.5
21	139.6
22	128.7
23	117.8
24	106.9
25	96.0
26	85.1
27	74.2
28	63.3
29	52.4
30	41.5
31	30.5
32	19.6
33	8.7

Orbital Plane 67:

Question

Response

Number of Satellites in Plane	33
Inclination Angle	50.9 degrees
Right Ascension of Ascending Node	351.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6728.4 seconds
Apogee	1325.0 km
Perigee	1325.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-50.9 degrees
Active Service Arc End Angle with respect to Ascending Node	50.9 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	353.5
2	342.5
3	331.6
4	320.7
5	309.8
6	298.9
7	288.0
8	277.1
9	266.2
10	255.3
11	244.4
12	233.5
13	222.5
14	211.6
15	200.7

16	189.8
17	178.9
18	168.0
19	157.1
20	146.2
21	135.3
22	124.4
23	113.5
24	102.5
25	91.6
26	80.7
27	69.8
28	58.9
29	48.0
30	37.1
31	26.2
32	15.3
33	4.4

Receiving Beams 1:

Question	Response
Beam ID	F1P1
Receive Beam Frequency	27500.0 MHz -29100.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	35.0 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	4.5 dB/K
Min. Saturation Flux Density	-108.0 dBW/m2
Max. Saturation Flux Density	-87.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving Beams 2:

Question	Response
Beam ID	F1P2
Receive Beam Frequency	27500.0 MHz -29100.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	35.0 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	4.5 dB/K
Min. Saturation Flux Density	-108.0 dBW/m2
Max. Saturation Flux Density	-87.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving
Beams 3:

Question	Response
Beam ID	F2P1
Receive Beam Frequency	29500.0 MHz -30000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	35.0 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	4.5 dB/K
Min. Saturation Flux Density	-108.0 dBW/m2
Max. Saturation Flux Density	-87.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving

Beams 4:

Question	Response
Beam ID	F2P2
Receive Beam Frequency	29500.0 MHz -30000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	35.0 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	4.5 dB/K
Min. Saturation Flux Density	-108.0 dBW/m2
Max. Saturation Flux Density	-87.8 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving Beams 5:

Question	Response
Beam ID	G1P1
Receive Beam Frequency	27500.0 MHz -29100.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	31.8 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	1.0 dB/K
Min. Saturation Flux Density	-98.5 dBW/m2
Max. Saturation Flux Density	-93.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving Beams 6:

Question	Response
Beam ID	G1P2
Receive Beam Frequency	27500.0 MHz -29100.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	31.8 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	1.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	1.0 dB/K
Min. Saturation Flux Density	-98.5 dBW/m2
Max. Saturation Flux Density	-93.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving Beams 7:

Question	Response
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Beam ID	G2P1
Receive Beam Frequency	29500.0 MHz -30000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	31.8 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	1.0 dB/K
Min. Saturation Flux Density	-98.5 dBW/m2
Max. Saturation Flux Density	-93.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving Beams 8:

Question	Response
Beam ID	G2P2
Receive Beam Frequency	29500.0 MHz -30000.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	31.8 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	1.0 dB/K
Min. Saturation Flux Density	-98.5 dBW/m2
Max. Saturation Flux Density	-93.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving
Channels (14)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
U1	1600.0	28300.0	Service Link
TC1	1.0	28351.0	TT&C
TC10	1.0	27502.0	TT&C
TC11	1.0	28620.0	TT&C
TC12	1.0	28630.0	TT&C
TC2	1.0	28352.0	TT&C
TC3	1.0	29098.0	TT&C
TC4	1.0	29099.0	TT&C
TC5	1.0	29501.0	TT&C
TC6	1.0	29502.0	TT&C
TC7	1.0	29998.0	TT&C
TC8	1.0	29999.0	TT&C
TC9	1.0	27501.0	TT&C
U2	500.0	29750.0	Service Link

Transmitting
Beams 1:

Question	Response
Beam ID	M1P1
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	32.5 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	-50.0 dBW/Hz
Max. Transmit EIRP	39.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* (dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):
1.0 MHz	-131.2	-129.9	-128.7	-127.6	-126.6	-121.1

Transmitting
Beams 2:

Question	Response
Beam ID	M1P2
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz

Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	32.5 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	-50.0 dBW/Hz
Max. Transmit EIRP	39.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* BW:	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):
1.0 MHz	-131.2	-129.9	-128.7	-127.6	-126.6	-121.1

Transmitting Beams 3:

Question	Response
Beam ID	M2P1
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	32.5 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	-50.0 dBW/Hz
Max. Transmit EIRP	37.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

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	-131.2	-129.9	-128.7	-127.6	-126.6	-121.1

Transmitting Beams 4:

Question	Response
Beam ID	M2P2
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	32.5 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	-50.0 dBW/Hz

Max. Transmit EIRP	37.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

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	-131.2	-129.9	-128.7	-127.6	-126.6	-121.1

Transmitting Beams 5:

Question	Response
Beam ID	M3P1
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	32.5 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	-56.4 dBW/Hz
Max. Transmit EIRP	30.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Max. Power Flux Density

Transmitting
Beams 6:

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* BW:	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):
1.0 MHz	-137.6	-136.3	-135.1	-134.0	-133.2	-127.5

Question	Response
Beam ID	M3P2
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	32.5 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	-56.4 dBW/Hz
Max. Transmit EIRP	30.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* BW:	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):
1.0 MHz	-137.6	-136.3	-135.1	-134.0	-133.2	-127.5

Transmitting
Beams 7:

Question	Response
Beam ID	N1P1
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	32.0 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	-50.0 dBW/Hz
Max. Transmit EIRP	39.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* (dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):
1.0 MHz	-131.2	-129.9	-128.7	-127.6	-126.6	-121.1

Transmitting
Beams 8:

Question	Response
Beam ID	N1P2
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz

Beam Type	Steerable
Polarization	LHCP
Peak Gain	32.0 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	-50.0 dBW/Hz
Max. Transmit EIRP	39.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

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	-131.2	-129.9	-128.7	-127.6	-126.6	-121.1

Transmitting Beams 9:

Question	Response
Beam ID	N2P1
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	32.0 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	-50.0 dBW/Hz
Max. Transmit EIRP	37.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

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	-131.2	-129.9	-128.7	-127.6	-126.6	-121.1

Transmitting Beams 10:

Question	Response
Beam ID	N2P2
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	32.0 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	-50.0 dBW/Hz

Max. Transmit EIRP	37.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

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	-131.2	-129.9	-128.7	-127.6	-126.6	-121.1

Transmitting Beams 11:

Question	Response
Beam ID	N3P1
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	32.0 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	-56.4 dBW/Hz
Max. Transmit EIRP	30.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Max. Power Flux Density

**Transmitting
Beams 12:**

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* BW:	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):
1.0 MHz	-137.6	-136.3	-135.1	-134.0	-133.2	-127.5

Question	Response
Beam ID	N3P2
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	32.0 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	-56.4 dBW/Hz
Max. Transmit EIRP	30.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* BW:	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):
1.0 MHz	-137.6	-136.3	-135.1	-134.0	-133.2	-127.5

Transmitting
Channels (17)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
TM9	0.5	19701.0	TT&C
TM8	0.5	19299.0	TT&C
TM7	0.5	19298.0	TT&C
TM6	0.5	18802.0	TT&C
TM5	0.5	18801.0	TT&C
TM4	0.5	18599.0	TT&C
TM3	0.5	18598.0	TT&C
TM2	0.5	17802.0	TT&C
TM14	1.0	18830.0	TT&C
TM13	1.0	18820.0	TT&C
TM12	0.5	20199.0	TT&C
TM11	0.5	20198.0	TT&C
TM10	0.5	19702.0	TT&C
TM1	0.5	17801.0	TT&C
D3	500.0	19950.0	Service Link
D2	500.0	19050.0	Service Link
D1	800.0	18200.0	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>GIMSLEO.mdb</u>		NGSO Antenna Gain Data	GIMS file (*.mdb)	