



312 File Number: **SATPPL2021110400142**

Filing Description

Question	Response
Description	Petition seeks U.S. market access for the HVNET non-geostationary orbit satellite system operating in the V-band.

Satellite Information

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	HVNET
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		37500.0 MHz -42000.0 MHz	Transmit
Fixed-Satellite Service		47200.0 MHz -50200.0 MHz	Receive
Fixed-Satellite Service		50400.0 MHz -51400.0 MHz	Receive
Fixed-Satellite Service		48200.0 MHz -50200.0 MHz	Receive
Fixed-Satellite Service		40000.0 MHz -42000.0 MHz	Transmit

**Orbital
Information For
Non-
Geostationary
Satellites**

Question	Response
Total Number of Satellites in the active constellation	1440
Orbit Epoch Date	01/01/2020
Celestial Reference Body	Earth

Orbital Plane 1:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0
4	324.0
5	315.0
6	306.0
7	297.0
8	288.0
9	279.0
10	270.0
11	261.0
12	252.0
13	243.0

14	234.0
15	225.0
16	216.0
17	207.0
18	198.0
19	189.0
20	180.0
21	171.0
22	162.0
23	153.0
24	144.0
25	135.0
26	126.0
27	117.0
28	108.0
29	99.0
30	90.0
31	81.0
32	72.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0

40	0.0
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Orbital Plane 2:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	10.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.5
2	346.5
3	337.5
4	328.5
5	319.5
6	310.5
7	301.5
8	292.5
9	283.5
10	274.5
11	265.5

12	256.5
13	247.5
14	238.5
15	229.5
16	220.5
17	211.5
18	202.5
19	193.5
20	184.5
21	175.5
22	166.5
23	157.5
24	148.5
25	139.5
26	130.5
27	121.5
28	112.5
29	103.5
30	94.5
31	85.5
32	76.5
33	67.5
34	58.5
35	49.5
36	40.5
37	31.5

38	22.5
39	13.5
40	4.5

Orbital Plane 3:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	20.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0
4	324.0
5	315.0
6	306.0
7	297.0
8	288.0
9	279.0

10	270.0
11	261.0
12	252.0
13	243.0
14	234.0
15	225.0
16	216.0
17	207.0
18	198.0
19	189.0
20	180.0
21	171.0
22	162.0
23	153.0
24	144.0
25	135.0
26	126.0
27	117.0
28	108.0
29	99.0
30	90.0
31	81.0
32	72.0
33	63.0
34	54.0
35	45.0

36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 4:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	30.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.5
2	346.5
3	337.5
4	328.5
5	319.5
6	310.5
7	301.5

8	292.5
9	283.5
10	274.5
11	265.5
12	256.5
13	247.5
14	238.5
15	229.5
16	220.5
17	211.5
18	202.5
19	193.5
20	184.5
21	175.5
22	166.5
23	157.5
24	148.5
25	139.5
26	130.5
27	121.5
28	112.5
29	103.5
30	94.5
31	85.5
32	76.5
33	67.5

34	58.5
35	49.5
36	40.5
37	31.5
38	22.5
39	13.5
40	4.5

Orbital Plane 5:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	40.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0
4	324.0
5	315.0

6	306.0
7	297.0
8	288.0
9	279.0
10	270.0
11	261.0
12	252.0
13	243.0
14	234.0
15	225.0
16	216.0
17	207.0
18	198.0
19	189.0
20	180.0
21	171.0
22	162.0
23	153.0
24	144.0
25	135.0
26	126.0
27	117.0
28	108.0
29	99.0
30	90.0
31	81.0

32	72.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 6:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	50.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.5
2	346.5
3	337.5

4	328.5
5	319.5
6	310.5
7	301.5
8	292.5
9	283.5
10	274.5
11	265.5
12	256.5
13	247.5
14	238.5
15	229.5
16	220.5
17	211.5
18	202.5
19	193.5
20	184.5
21	175.5
22	166.5
23	157.5
24	148.5
25	139.5
26	130.5
27	121.5
28	112.5
29	103.5

30	94.5
31	85.5
32	76.5
33	67.5
34	58.5
35	49.5
36	40.5
37	31.5
38	22.5
39	13.5
40	4.5

Orbital Plane 7:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	60.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0

2	342.0
3	333.0
4	324.0
5	315.0
6	306.0
7	297.0
8	288.0
9	279.0
10	270.0
11	261.0
12	252.0
13	243.0
14	234.0
15	225.0
16	216.0
17	207.0
18	198.0
19	189.0
20	180.0
21	171.0
22	162.0
23	153.0
24	144.0
25	135.0
26	126.0
27	117.0

28	108.0
29	99.0
30	90.0
31	81.0
32	72.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 8:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	70.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.5
2	346.5
3	337.5
4	328.5
5	319.5
6	310.5
7	301.5
8	292.5
9	283.5
10	274.5
11	265.5
12	256.5
13	247.5
14	238.5
15	229.5
16	220.5
17	211.5
18	202.5
19	193.5
20	184.5
21	175.5
22	166.5
23	157.5
24	148.5
25	139.5

26	130.5
27	121.5
28	112.5
29	103.5
30	94.5
31	85.5
32	76.5
33	67.5
34	58.5
35	49.5
36	40.5
37	31.5
38	22.5
39	13.5
40	4.5

Orbital Plane 9:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	80.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0
4	324.0
5	315.0
6	306.0
7	297.0
8	288.0
9	279.0
10	270.0
11	261.0
12	252.0
13	243.0
14	234.0
15	225.0
16	216.0
17	207.0
18	198.0
19	189.0
20	180.0
21	171.0
22	162.0
23	153.0
24	144.0

25	135.0
26	126.0
27	117.0
28	108.0
29	99.0
30	90.0
31	81.0
32	72.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 10:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	90.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.5
2	346.5
3	337.5
4	328.5
5	319.5
6	310.5
7	301.5
8	292.5
9	283.5
10	274.5
11	265.5
12	256.5
13	247.5
14	238.5
15	229.5
16	220.5
17	211.5
18	202.5
19	193.5
20	184.5
21	175.5
22	166.5

23	157.5
24	148.5
25	139.5
26	130.5
27	121.5
28	112.5
29	103.5
30	94.5
31	85.5
32	76.5
33	67.5
34	58.5
35	49.5
36	40.5
37	31.5
38	22.5
39	13.5
40	4.5

Orbital Plane 11:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	100.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km

Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0
4	324.0
5	315.0
6	306.0
7	297.0
8	288.0
9	279.0
10	270.0
11	261.0
12	252.0
13	243.0
14	234.0
15	225.0
16	216.0
17	207.0
18	198.0
19	189.0
20	180.0

21	171.0
22	162.0
23	153.0
24	144.0
25	135.0
26	126.0
27	117.0
28	108.0
29	99.0
30	90.0
31	81.0
32	72.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 12:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	110.0 degrees
Argument of Perigee	0.0 degrees

Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.5
2	346.5
3	337.5
4	328.5
5	319.5
6	310.5
7	301.5
8	292.5
9	283.5
10	274.5
11	265.5
12	256.5
13	247.5
14	238.5
15	229.5
16	220.5
17	211.5
18	202.5
19	193.5

20	184.5
21	175.5
22	166.5
23	157.5
24	148.5
25	139.5
26	130.5
27	121.5
28	112.5
29	103.5
30	94.5
31	85.5
32	76.5
33	67.5
34	58.5
35	49.5
36	40.5
37	31.5
38	22.5
39	13.5
40	4.5

Orbital Plane 13:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	120.0 degrees

Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0
4	324.0
5	315.0
6	306.0
7	297.0
8	288.0
9	279.0
10	270.0
11	261.0
12	252.0
13	243.0
14	234.0
15	225.0
16	216.0
17	207.0
18	198.0

19	189.0
20	180.0
21	171.0
22	162.0
23	153.0
24	144.0
25	135.0
26	126.0
27	117.0
28	108.0
29	99.0
30	90.0
31	81.0
32	72.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 14:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees

Right Ascension of Ascending Node	130.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.5
2	346.5
3	337.5
4	328.5
5	319.5
6	310.5
7	301.5
8	292.5
9	283.5
10	274.5
11	265.5
12	256.5
13	247.5
14	238.5
15	229.5
16	220.5
17	211.5

18	202.5
19	193.5
20	184.5
21	175.5
22	166.5
23	157.5
24	148.5
25	139.5
26	130.5
27	121.5
28	112.5
29	103.5
30	94.5
31	85.5
32	76.5
33	67.5
34	58.5
35	49.5
36	40.5
37	31.5
38	22.5
39	13.5
40	4.5

Orbital Plane 15:

Question	Response
Number of Satellites in Plane	40

Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	140.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0
4	324.0
5	315.0
6	306.0
7	297.0
8	288.0
9	279.0
10	270.0
11	261.0
12	252.0
13	243.0
14	234.0
15	225.0
16	216.0

17	207.0
18	198.0
19	189.0
20	180.0
21	171.0
22	162.0
23	153.0
24	144.0
25	135.0
26	126.0
27	117.0
28	108.0
29	99.0
30	90.0
31	81.0
32	72.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 16:

Question

Response

Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	150.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.5
2	346.5
3	337.5
4	328.5
5	319.5
6	310.5
7	301.5
8	292.5
9	283.5
10	274.5
11	265.5
12	256.5
13	247.5
14	238.5
15	229.5

16	220.5
17	211.5
18	202.5
19	193.5
20	184.5
21	175.5
22	166.5
23	157.5
24	148.5
25	139.5
26	130.5
27	121.5
28	112.5
29	103.5
30	94.5
31	85.5
32	76.5
33	67.5
34	58.5
35	49.5
36	40.5
37	31.5
38	22.5
39	13.5
40	4.5

Orbital Plane 17:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	160.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0
4	324.0
5	315.0
6	306.0
7	297.0
8	288.0
9	279.0
10	270.0
11	261.0
12	252.0
13	243.0
14	234.0

15	225.0
16	216.0
17	207.0
18	198.0
19	189.0
20	180.0
21	171.0
22	162.0
23	153.0
24	144.0
25	135.0
26	126.0
27	117.0
28	108.0
29	99.0
30	90.0
31	81.0
32	72.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 18:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	170.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.5
2	346.5
3	337.5
4	328.5
5	319.5
6	310.5
7	301.5
8	292.5
9	283.5
10	274.5
11	265.5
12	256.5
13	247.5

14	238.5
15	229.5
16	220.5
17	211.5
18	202.5
19	193.5
20	184.5
21	175.5
22	166.5
23	157.5
24	148.5
25	139.5
26	130.5
27	121.5
28	112.5
29	103.5
30	94.5
31	85.5
32	76.5
33	67.5
34	58.5
35	49.5
36	40.5
37	31.5
38	22.5
39	13.5

40

4.5

Orbital Plane 19:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	180.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0
4	324.0
5	315.0
6	306.0
7	297.0
8	288.0
9	279.0
10	270.0
11	261.0

12	252.0
13	243.0
14	234.0
15	225.0
16	216.0
17	207.0
18	198.0
19	189.0
20	180.0
21	171.0
22	162.0
23	153.0
24	144.0
25	135.0
26	126.0
27	117.0
28	108.0
29	99.0
30	90.0
31	81.0
32	72.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0

38	18.0
39	9.0
40	0.0

Orbital Plane 20:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	190.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.5
2	346.5
3	337.5
4	328.5
5	319.5
6	310.5
7	301.5
8	292.5
9	283.5

10	274.5
11	265.5
12	256.5
13	247.5
14	238.5
15	229.5
16	220.5
17	211.5
18	202.5
19	193.5
20	184.5
21	175.5
22	166.5
23	157.5
24	148.5
25	139.5
26	130.5
27	121.5
28	112.5
29	103.5
30	94.5
31	85.5
32	76.5
33	67.5
34	58.5
35	49.5

36	40.5
37	31.5
38	22.5
39	13.5
40	4.5

Orbital Plane 21:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	200.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0
4	324.0
5	315.0
6	306.0
7	297.0

8	288.0
9	279.0
10	270.0
11	261.0
12	252.0
13	243.0
14	234.0
15	225.0
16	216.0
17	207.0
18	198.0
19	189.0
20	180.0
21	171.0
22	162.0
23	153.0
24	144.0
25	135.0
26	126.0
27	117.0
28	108.0
29	99.0
30	90.0
31	81.0
32	72.0
33	63.0

34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 22:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	210.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.5
2	346.5
3	337.5
4	328.5
5	319.5

6	310.5
7	301.5
8	292.5
9	283.5
10	274.5
11	265.5
12	256.5
13	247.5
14	238.5
15	229.5
16	220.5
17	211.5
18	202.5
19	193.5
20	184.5
21	175.5
22	166.5
23	157.5
24	148.5
25	139.5
26	130.5
27	121.5
28	112.5
29	103.5
30	94.5
31	85.5

32	76.5
33	67.5
34	58.5
35	49.5
36	40.5
37	31.5
38	22.5
39	13.5
40	4.5

Orbital Plane 23:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	220.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0

4	324.0
5	315.0
6	306.0
7	297.0
8	288.0
9	279.0
10	270.0
11	261.0
12	252.0
13	243.0
14	234.0
15	225.0
16	216.0
17	207.0
18	198.0
19	189.0
20	180.0
21	171.0
22	162.0
23	153.0
24	144.0
25	135.0
26	126.0
27	117.0
28	108.0
29	99.0

30	90.0
31	81.0
32	72.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 24:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	230.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.5

2	346.5
3	337.5
4	328.5
5	319.5
6	310.5
7	301.5
8	292.5
9	283.5
10	274.5
11	265.5
12	256.5
13	247.5
14	238.5
15	229.5
16	220.5
17	211.5
18	202.5
19	193.5
20	184.5
21	175.5
22	166.5
23	157.5
24	148.5
25	139.5
26	130.5
27	121.5

28	112.5
29	103.5
30	94.5
31	85.5
32	76.5
33	67.5
34	58.5
35	49.5
36	40.5
37	31.5
38	22.5
39	13.5
40	4.5

Orbital Plane 25:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	240.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0
4	324.0
5	315.0
6	306.0
7	297.0
8	288.0
9	279.0
10	270.0
11	261.0
12	252.0
13	243.0
14	234.0
15	225.0
16	216.0
17	207.0
18	198.0
19	189.0
20	180.0
21	171.0
22	162.0
23	153.0
24	144.0
25	135.0

26	126.0
27	117.0
28	108.0
29	99.0
30	90.0
31	81.0
32	72.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 26:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	250.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	355.5
2	346.5
3	337.5
4	328.5
5	319.5
6	310.5
7	301.5
8	292.5
9	283.5
10	274.5
11	265.5
12	256.5
13	247.5
14	238.5
15	229.5
16	220.5
17	211.5
18	202.5
19	193.5
20	184.5
21	175.5
22	166.5
23	157.5
24	148.5

25	139.5
26	130.5
27	121.5
28	112.5
29	103.5
30	94.5
31	85.5
32	76.5
33	67.5
34	58.5
35	49.5
36	40.5
37	31.5
38	22.5
39	13.5
40	4.5

Orbital Plane 27:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	260.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0
4	324.0
5	315.0
6	306.0
7	297.0
8	288.0
9	279.0
10	270.0
11	261.0
12	252.0
13	243.0
14	234.0
15	225.0
16	216.0
17	207.0
18	198.0
19	189.0
20	180.0
21	171.0
22	162.0

23	153.0
24	144.0
25	135.0
26	126.0
27	117.0
28	108.0
29	99.0
30	90.0
31	81.0
32	72.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 28:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	270.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km

Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	4.5
2	13.5
3	22.5
4	31.5
5	40.5
6	49.5
7	58.5
8	67.5
9	76.5
10	85.5
11	94.5
12	103.5
13	112.5
14	121.5
15	130.5
16	139.5
17	148.5
18	157.5
19	166.5
20	175.5

21	184.5
22	193.5
23	202.5
24	211.5
25	220.5
26	229.5
27	238.5
28	247.5
29	256.5
30	265.5
31	274.5
32	283.5
33	292.5
34	301.5
35	310.5
36	319.5
37	328.5
38	337.5
39	346.5
40	355.5

Orbital Plane 29:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	280.0 degrees
Argument of Perigee	0.0 degrees

Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	9.0
2	18.0
3	27.0
4	36.0
5	45.0
6	54.0
7	63.0
8	72.0
9	81.0
10	90.0
11	99.0
12	108.0
13	117.0
14	126.0
15	135.0
16	144.0
17	153.0
18	162.0
19	171.0

20	180.0
21	324.0
22	333.0
23	342.0
24	351.0
25	315.0
26	306.0
27	297.0
28	288.0
29	279.0
30	270.0
31	261.0
32	252.0
33	243.0
34	234.0
35	225.0
36	216.0
37	207.0
38	198.0
39	189.0
40	0.0

Orbital Plane 30:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	290.0 degrees

Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	4.5
2	13.5
3	22.5
4	31.5
5	40.5
6	49.5
7	58.5
8	67.5
9	76.5
10	85.5
11	94.5
12	103.5
13	112.5
14	121.5
15	130.5
16	139.5
17	148.5
18	157.5

19	166.5
20	175.5
21	184.5
22	193.5
23	202.5
24	211.5
25	220.5
26	229.5
27	238.5
28	247.5
29	256.5
30	265.5
31	274.5
32	283.5
33	292.5
34	301.5
35	310.5
36	319.5
37	328.5
38	337.5
39	346.5
40	355.5

Orbital Plane 31:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees

Right Ascension of Ascending Node	300.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	72.0
2	81.0
3	90.0
4	99.0
5	108.0
6	117.0
7	126.0
8	135.0
9	144.0
10	153.0
11	162.0
12	171.0
13	180.0
14	189.0
15	198.0
16	207.0
17	216.0

18	225.0
19	234.0
20	243.0
21	252.0
22	261.0
23	270.0
24	279.0
25	288.0
26	297.0
27	306.0
28	315.0
29	324.0
30	333.0
31	342.0
32	351.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 32:

Question	Response
Number of Satellites in Plane	40

Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	310.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	4.5
2	13.5
3	22.5
4	31.5
5	40.5
6	49.5
7	58.5
8	67.5
9	76.5
10	85.5
11	94.5
12	103.5
13	112.5
14	121.5
15	130.5
16	139.5

17	148.5
18	157.5
19	166.5
20	175.5
21	184.5
22	193.5
23	202.5
24	211.5
25	220.5
26	229.5
27	238.5
28	247.5
29	256.5
30	265.5
31	274.5
32	283.5
33	292.5
34	301.5
35	310.5
36	319.5
37	328.5
38	337.5
39	346.5
40	355.5

Orbital Plane 33:

Question

Response

Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	320.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	108.0
2	117.0
3	126.0
4	135.0
5	144.0
6	153.0
7	162.0
8	171.0
9	180.0
10	189.0
11	198.0
12	207.0
13	216.0
14	225.0
15	234.0

16	243.0
17	252.0
18	261.0
19	270.0
20	279.0
21	288.0
22	297.0
23	306.0
24	315.0
25	324.0
26	333.0
27	342.0
28	351.0
29	99.0
30	90.0
31	81.0
32	72.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0
40	0.0

Orbital Plane 34:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	330.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	4.5
2	13.5
3	22.5
4	31.5
5	40.5
6	49.5
7	58.5
8	67.5
9	76.5
10	85.5
11	94.5
12	103.5
13	112.5
14	121.5

15	130.5
16	139.5
17	148.5
18	157.5
19	166.5
20	175.5
21	184.5
22	193.5
23	202.2
24	211.5
25	220.5
26	229.5
27	238.5
28	247.5
29	256.5
30	265.5
31	274.5
32	283.5
33	292.5
34	301.5
35	310.5
36	319.5
37	328.5
38	337.5
39	346.5
40	355.5

Orbital Plane 35:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	340.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	72.0
2	81.0
3	90.0
4	99.0
5	108.0
6	117.0
7	126.0
8	135.0
9	144.0
10	153.0
11	162.0
12	171.0
13	180.0

14	189.0
15	198.0
16	207.0
17	216.0
18	225.0
19	234.0
20	243.0
21	252.0
22	261.0
23	270.0
24	279.0
25	288.0
26	297.0
27	306.0
28	315.0
29	324.0
30	333.0
31	342.0
32	351.0
33	63.0
34	54.0
35	45.0
36	36.0
37	27.0
38	18.0
39	9.0

40	0.0
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Orbital Plane 36:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	55.0 degrees
Right Ascension of Ascending Node	350.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	6500.0 seconds
Apogee	1150.0 km
Perigee	1150.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-55.0 degrees
Active Service Arc End Angle with respect to Ascending Node	55.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	184.5
2	193.5
3	202.5
4	211.5
5	220.5
6	229.5
7	238.5
8	247.5
9	256.5
10	265.5
11	274.5

12	283.5
13	292.5
14	301.5
15	310.5
16	319.5
17	328.5
18	337.5
19	346.5
20	355.5
21	175.5
22	166.5
23	157.5
24	148.5
25	139.5
26	130.5
27	121.5
28	112.5
29	103.5
30	94.5
31	85.5
32	76.5
33	67.5
34	58.5
35	49.5
36	40.5
37	31.5

38	22.5
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39	13.5
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40	4.5
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Receiving Beams 1:

Question	Response
Beam ID	VLL1
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	51.81 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	23.81 dB/K
Min. Saturation Flux Density	-0.1 dBW/m ²
Max. Saturation Flux Density	0.0 dBW/m ²
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving Beams 2:

Question	Response
Beam ID	VLR1
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	51.81 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	23.81 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving Beams 3:

Question	Response
Beam ID	VLL2
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	52.02 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	24.02 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving

Beams 4:

Question	Response
Beam ID	VLR2
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	52.02 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	24.02 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving Beams 5:

Question	Response
Beam ID	VURL
Receive Beam Frequency	48200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	47.0 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	19.0 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving Beams 6:

Question	Response
Beam ID	VURR
Receive Beam Frequency	48200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	47.0 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	19.0 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving Beams 7:

Question	Response
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Beam ID	TR1L
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	11.8 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	-16.2 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving Beams 8:

Question	Response
Beam ID	TR1R
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	11.8 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	-16.2 dB/K
Min. Saturation Flux Density	-0.1 dBW/m ²
Max. Saturation Flux Density	0.0 dBW/m ²
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

Receiving Channels (36)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
TRR1	100.0	47250.0	TT&C
VUL5	250.0	49325.0	Service Link
VUL4	250.0	49075.0	Service Link
VUL3	250.0	48825.0	Service Link
VUL2	250.0	48575.0	Service Link
VRR8	500.0	51150.0	Feeder Link
VRR7	500.0	50650.0	Feeder Link
VRR6	500.0	49950.0	Feeder Link
VRR5	500.0	49450.0	Feeder Link
VRR4	500.0	48950.0	Feeder Link
VRR3	500.0	48450.0	Feeder Link
VRL8	500.0	51150.0	Feeder Link
VRL7	500.0	50650.0	Feeder Link
VRL6	500.0	49950.0	Feeder Link
VRL5	500.0	49450.0	Feeder Link
VRL4	500.0	48950.0	Feeder Link
VRL3	500.0	48450.0	Feeder Link
VRL2	500.0	47950.0	Feeder Link
VRL1	500.0	47450.0	Feeder Link
TRL1	100.0	47250.0	TT&C
TRL2	100.0	50150.0	TT&C
TRR2	100.0	50150.0	TT&C
VRR1	500.0	47450.0	Feeder Link
VRR2	500.0	47950.0	Feeder Link

VUL1	250.0	48325.0	Service Link
VUL6	250.0	49575.0	Service Link
VUL7	250.0	49825.0	Service Link
VUL8	250.0	50075.0	Service Link
VUR5	250.0	49325.0	Service Link
VUR6	250.0	49575.0	Service Link
VUR8	250.0	50075.0	Service Link
VUR7	250.0	49825.0	Service Link
VUR4	250.0	49075.0	Service Link
VUR3	250.0	48825.0	Service Link
VUR2	250.0	48575.0	Service Link
VUR1	250.0	48325.0	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	VLL3
Transmit Beam Frequency	37500.0 MHz -40000.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	49.8 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	-41.45 dBW/Hz
Max. Transmit EIRP	52.53 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	-168.5	-164.8	-159.6	-150.7	-119.0	-119.0

Transmitting Beams 2:

Question	Response
Beam ID	VLR3
Transmit Beam Frequency	37500.0 MHz -40000.0 MHz

Beam Type	Steerable
Polarization	RHCP
Peak Gain	49.8 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	-41.45 dBW/Hz
Max. Transmit EIRP	52.53 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	-168.5	-164.8	-159.6	-150.7	-119.0	-119.0

Transmitting Beams 3:

Question	Response
Beam ID	VLL4
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	49.8 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	-29.45 dBW/Hz
Max. Transmit EIRP	63.56 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	-156.5	-152.8	-147.6	-138.7	-107.0	-107.0

Transmitting Beams 4:

Question	Response
Beam ID	VLR4
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	49.8 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	-29.45 dBW/Hz

Max. Transmit EIRP	63.56 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	-156.5	-152.8	-147.6	-138.7	-107.0	-107.0

Transmitting Beams 5:

Question	Response
Beam ID	VUTL
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	44.6 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	-31.43 dBW/Hz
Max. Transmit EIRP	61.58 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	-131.3	-128.2	-118.5	-111.4	-110.0	-107.0

Transmitting Beams 6:

Question	Response
Beam ID	VUTR
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	44.6 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	-31.43 dBW/Hz
Max. Transmit EIRP	61.58 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	-131.3	-128.2	-118.5	-111.4	-110.0	-107.0

Transmitting Beams 7:

Question	Response
Beam ID	TT1L
Transmit Beam Frequency	37500.0 MHz -40000.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	9.28 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	-45.79 dBW/Hz
Max. Transmit EIRP	34.21 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	-145.5	-143.6	-141.4	-139.0	-136.5	-118.0

Transmitting Beams 8:

Question	Response
Beam ID	TT1R
Transmit Beam Frequency	37500.0 MHz -40000.0 MHz

Beam Type	Steerable
Polarization	RHCP
Peak Gain	9.28 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	-45.79 dBW/Hz
Max. Transmit EIRP	34.21 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	-145.5	-143.6	-141.4	-139.0	-136.5	-118.0

Transmitting Beams 9:

Question	Response
Beam ID	TT2L
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	10.26 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	-33.79 dBW/Hz
Max. Transmit EIRP	46.21 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	-147.1	-143.2	-138.8	-134.4	-130.3	-106.0

Transmitting Beams 10:

Question	Response
Beam ID	TT2R
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	10.26 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	-33.79 dBW/Hz

Max. Transmit EIRP	46.21 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	-147.1	-143.2	-138.8	-134.4	-130.3	-106.0

Transmitting Channels (38)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
VTL7	500.0	40750.0	Feeder Link
VTL6	500.0	40250.0	Feeder Link
UTR3	250.0	40625.0	Service Link
UTR2	250.0	40375.0	Service Link
UTR1	250.0	40125.0	Service Link
UTL8	250.0	41875.0	Service Link
UTL7	250.0	41625.0	Service Link
UTL6	250.0	41375.0	Service Link
UTL5	250.0	41125.0	Service Link
UTL4	500.0	40875.0	Service Link
TTR2	100.0	41950.0	TT&C
VTR9	500.0	41750.0	Feeder Link
VTR8	500.0	41250.0	Feeder Link
VTR7	500.0	40750.0	Feeder Link
VTR6	500.0	40250.0	Feeder Link
VTR5	500.0	39750.0	Feeder Link
VTR4	500.0	39250.0	Feeder Link
VTR3	500.0	38750.0	Feeder Link
VTR2	500.0	38250.0	Feeder Link
VTR1	500.0	37750.0	Feeder Link
VTL9	500.0	41750.0	Feeder Link
VTL8	500.0	41250.0	Feeder Link
VTL5	500.0	39750.0	Feeder Link
VTL4	500.0	39250.0	Feeder Link

VTL3	500.0	38750.0	Feeder Link
VTL2	500.0	38250.0	Feeder Link
TTL1	100.0	37550.0	TT&C
TTL2	100.0	41950.0	TT&C
TTR1	100.0	37550.0	TT&C
VTL1	500.0	37750.0	Feeder Link
UTR5	250.0	41125.0	Service Link
UTR4	250.0	40875.0	Service Link
UTL3	250.0	40625.0	Service Link
UTL2	250.0	40375.0	Service Link
UTL1	250.0	40125.0	Service Link
UTR6	250.0	41375.0	Service Link
UTR7	250.0	41625.0	Service Link
UTR8	250.0	41875.0	Service Link

Certification Questions

Question	Response
Are the applicable service area coverage requirements of 25.143(b)(2) (ii) and (iii), or 25.144(a)(3)(i), or 25.145 (c)(1) and (2), or 25.146(i)(1) and (2), or 25.148(c), or 25.225 met?	Yes
Are the applicable frequency tolerances of 25.202(e) and out-of-band emission limits of 25.202(f)(1),(2), and (3) met?	Yes
Are the cessation of emissions requirements of 25.207 met?	Yes
Are the applicable power-flux-density limits of 25.208 met, and is the appropriate technical showing provided within the application?	Yes
For NGSO applications, are the applicable equivalent-power-flux-density limits of 25.208 met, and is the appropriate technical showing provided within the application?	N/A
Are the applicable full-frequency-reuse requirements of 25.210 met?	Yes
If the application is for a 17/24 GHz BSS space station, will it be operated at an offset location with full power and interference protection in accordance with 25.262(b)?	

Attachments

File Name	Beam	Field	Attachment Type	Description
<u>LEO1150km HVNET Sat VLL1 Beam Gain Contour.pdf</u>	VLL1	NGSO Antenna Gain Data	PDF file (*.pdf)	VLL1 Antenna Gain
<u>LEO1150km HVNET Sat VLL2 Beam Gain Contour.pdf</u>	VLL2	NGSO Antenna Gain Data	PDF file (*.pdf)	VLL2 Antenna Gain
<u>LEO1150km HVNET Sat VLL3 Beam Gain Contour.pdf</u>	VLL3	NGSO Antenna Gain Data	PDF file (*.pdf)	VLL3 Antenna Gain
<u>LEO1150km HVNET Sat VLL4 Beam Gain Contour.pdf</u>	VLL4	NGSO Antenna Gain Data	PDF file (*.pdf)	VLL4 Antenna Gain
<u>LEO1150km HVNET Sat TT1L Beam Gain Contour.pdf</u>	TT1L	NGSO Antenna Gain Data	PDF file (*.pdf)	TT1L Antenna Gain
<u>LEO1150km HVNET Sat TT2L Beam Gain Contour.pdf</u>	TT2L	NGSO Antenna Gain Data	PDF file (*.pdf)	TT2L Antenna Gain
<u>LEO1150km HVNET Sat TR1R Beam Gain Contour.pdf</u>	TR1R	NGSO Antenna Gain Data	PDF file (*.pdf)	TR1R Antenna Gain
<u>LEO1150km HVNET Sat VLR1 Beam Gain Contour.pdf</u>	VLR1	NGSO Antenna Gain Data	PDF file (*.pdf)	VLR1 Antenna Gain
<u>LEO1150km HVNET Sat VLR2 Beam Gain Contour.pdf</u>	VLR2	NGSO Antenna Gain Data	PDF file (*.pdf)	VLR2 Antenna Gain
<u>LEO1150km HVNET Sat TT1R Beam Gain Contour.pdf</u>	TT1R	NGSO Antenna Gain Data	PDF file (*.pdf)	TT1R Antenna Gain
<u>LEO1150km HVNET Sat TT2R Beam Gain Contour.pdf</u>	TT2R	NGSO Antenna Gain Data	PDF file (*.pdf)	TT2R Antenna Gain
<u>LEO1150km HVNET Sat VLR3 Beam Gain Contour.pdf</u>	VLR3	NGSO Antenna Gain Data	PDF file (*.pdf)	VLR3 Antenna Gain

<u>LEO1150km HVNET Sat VLR4 Beam Gain Contour. pdf</u>	VLR4	NGSO Antenna Gain Data	PDF file (*. pdf)	VLR4 Antenna Gain
<u>LEO1150km HVNET Sat VURL Beam Gain Contour. pdf</u>	VURL	NGSO Antenna Gain Data	PDF file (*. pdf)	VURL Antenna Gain
<u>LEO1150km HVNET Sat VURR Beam Gain Contour. pdf</u>	VURR	NGSO Antenna Gain Data	PDF file (*. pdf)	VURR Antenna Gain
<u>LEO1150km HVNET Sat VUTL Beam Gain Contour. pdf</u>	VUTL	NGSO Antenna Gain Data	PDF file (*. pdf)	VUTL Antenna Gain
<u>LEO1150km HVNET Sat VUTR Beam Gain Contour. pdf</u>	VUTR	NGSO Antenna Gain Data	PDF file (*. pdf)	VUTR Antenna Gain
<u>LEO1150km HVNET Sat TR1L Beam Gain Contour. pdf</u>	TR1L	NGSO Antenna Gain Data	PDF file (*. pdf)	TR1L Antenna Gain
