



312 File Number: **SATLOA2016111500109**

Filing Description

Question	Response
Description	The Boeing Company requests authority to launch and operate a non-geostationary satellite orbit (NGSO) system operating in the Ka-band in the Fixed-Satellite Service (FSS) and Mobile-Satellite Service (MSS).

**Satellite
Information**

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	Ka-band NGSO System
Estimated Lifetime of Satellite(s) From Date of Launch	15 Years
Will the space station(s) operate on a Common Carrier basis?	No

Operating Frequency Bands (14)

Nature of service	Description	Frequency Band(s)	Mode Type
Fixed-Satellite Service		29500.0 MHz -30000.0 MHz	Receive
Mobile-Satellite Service		29100.0 MHz -29500.0 MHz	Receive
Fixed-Satellite Service		19700.0 MHz -20200.0 MHz	Transmit
Fixed-Satellite Service		19300.0 MHz -19700.0 MHz	Transmit
Fixed-Satellite Service		27600.0 MHz -28400.0 MHz	Receive
Fixed-Satellite Service		28350.0 MHz -28600.0 MHz	Receive
Fixed-Satellite Service		28600.0 MHz -29100.0 MHz	Receive
Fixed-Satellite Service		17800.0 MHz -18600.0 MHz	Transmit
Fixed-Satellite Service		18300.0 MHz -18800.0 MHz	Transmit
Fixed-Satellite Service		18800.0 MHz -19300.0 MHz	Transmit
Fixed-Satellite Service		29100.0 MHz -29500.0 MHz	Receive
Mobile-Satellite Service		29500.0 MHz -30000.0 MHz	Receive
Mobile-Satellite Service		19300.0 MHz -19700.0 MHz	Transmit
Mobile-Satellite Service		19700.0 MHz -20200.0 MHz	Transmit

**Orbital
Information For
Non-
Geostationary
Satellites**

Question	Response
Total Number of Satellites in the active constellation	60
Orbit Epoch Date	01/01/2018
Celestial Reference Body	Earth

Orbital Plane 1:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	15.4 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	179.8

Orbital Plane 2:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	15.4 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees

Active Service Arc End Angle with respect to Ascending Node	360.0 degrees
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Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	243.3

Orbital Plane 3:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	15.4 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	303.6

Orbital Plane 4:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	33.4 degrees

Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	161.9

Orbital Plane 5:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	33.4 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
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1	225.4
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Orbital Plane 6:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	33.4 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	285.6

Orbital Plane 7:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	51.4 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km

Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	143.9

Orbital Plane 8:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	51.4 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	207.4

Orbital Plane 9:

Question	Response
Number of Satellites in Plane	1

Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	51.4 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	267.6

Orbital Plane 10:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	69.4 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	126.0

Orbital Plane 11:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	69.4 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	189.4

Orbital Plane 12:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	69.4 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds

Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	249.7

Orbital Plane 13:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	87.3 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	108.0

Orbital Plane 14:

Question	Response
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Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	87.3 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	171.5

Orbital Plane 15:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	87.3 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	231.7

Orbital Plane 16:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	105.3 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	90.1

Orbital Plane 17:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	105.3 degrees
Argument of Perigee	220.0 degrees

Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	153.5

Orbital Plane 18:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	105.3 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	213.7

Orbital Plane 19:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	123.3 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

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

Orbital Plane 20:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	123.3 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees

Active Service Arc End Angle with respect to Ascending Node	360.0 degrees
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Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	135.6

Orbital Plane 21:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	123.3 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	195.8

Orbital Plane 22:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	141.3 degrees

Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	54.2

Orbital Plane 23:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	141.3 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
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1	117.6
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Orbital Plane 24:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	141.3 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	177.8

Orbital Plane 25:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	159.3 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km

Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	36.2

Orbital Plane 26:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	159.3 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	99.6

Orbital Plane 27:

Question	Response
Number of Satellites in Plane	1

Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	159.3 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	159.8

Orbital Plane 28:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	177.3 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	18.2

Orbital Plane 29:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	177.3 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	81.6

Orbital Plane 30:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	177.3 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds

Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	141.8

Orbital Plane 31:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	195.3 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.2

Orbital Plane 32:

Question	Response
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Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	195.3 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	63.6

Orbital Plane 33:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	195.3 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	123.8

Orbital Plane 34:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	213.3 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	342.2

Orbital Plane 35:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	213.3 degrees
Argument of Perigee	220.0 degrees

Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	45.6

Orbital Plane 36:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	213.3 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	105.8

Orbital Plane 37:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	231.3 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	324.1

Orbital Plane 38:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	231.3 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees

Active Service Arc End Angle with respect to Ascending Node	360.0 degrees
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Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	27.5

Orbital Plane 39:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	231.3 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	87.8

Orbital Plane 40:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	249.3 degrees

Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	306.1

Orbital Plane 41:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	249.3 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
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1	9.5
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Orbital Plane 42:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	249.3 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	69.7

Orbital Plane 43:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	267.4 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km

Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

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

Orbital Plane 44:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	267.4 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.5

Orbital Plane 45:

Question	Response
Number of Satellites in Plane	1

Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	267.4 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	51.7

Orbital Plane 46:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	285.4 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	270.0

Orbital Plane 47:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	285.4 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	333.4

Orbital Plane 48:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	285.4 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds

Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	33.6

Orbital Plane 49:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	303.4 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	251.9

Orbital Plane 50:

Question	Response
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Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	303.4 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	315.4

Orbital Plane 51:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	303.4 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	15.6

Orbital Plane 52:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	321.4 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	233.9

Orbital Plane 53:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	321.4 degrees
Argument of Perigee	220.0 degrees

Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	297.3

Orbital Plane 54:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	321.4 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	357.6

Orbital Plane 55:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	339.4 degrees
Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

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

Orbital Plane 56:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	339.4 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees

Active Service Arc End Angle with respect to Ascending Node	360.0 degrees
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Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	279.3

Orbital Plane 57:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	339.4 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	339.6

Orbital Plane 58:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	357.4 degrees

Argument of Perigee	180.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	197.9

Orbital Plane 59:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	357.4 degrees
Argument of Perigee	220.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
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1	261.3
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Orbital Plane 60:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	357.4 degrees
Argument of Perigee	240.0 degrees
Orbital Period	86164.0 seconds
Apogee	44221.4 km
Perigee	27354.9 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	360.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	321.6

Receiving Beams 1:

Question	Response
Beam ID	K5LG
Receive Beam Frequency	27600.0 MHz -28400.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	51.1 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	24.6 dB/K
Min. Saturation Flux Density	-114.3 dBW/m2
Max. Saturation Flux Density	-88.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 2:

Question	Response
Beam ID	K6L1
Receive Beam Frequency	28400.0 MHz -28600.0 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

Receiving Beams 3:

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	8.5 dB/K
Min. Saturation Flux Density	-146.0 dBW/m2
Max. Saturation Flux Density	-113.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Question	Response
Beam ID	K7LG
Receive Beam Frequency	28600.0 MHz -29100.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	51.3 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	24.9 dB/K
Min. Saturation Flux Density	-116.4 dBW/m2
Max. Saturation Flux Density	-90.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 4:

Question	Response
Beam ID	K8LG
Receive Beam Frequency	29100.0 MHz -29490.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	51.5 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
G/T at Max. Gain Point	25.0 dB/K
Min. Saturation Flux Density	-117.4 dBW/m2
Max. Saturation Flux Density	-91.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 5:

Question	Response
Beam ID	K9L1
Receive Beam Frequency	29500.0 MHz -29995.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	35.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	8.9 dB/K
Min. Saturation Flux Density	-146.8 dBW/m2
Max. Saturation Flux Density	-112.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Receiving Beams 6:

Question	Response
Beam ID	KCLL
Receive Beam Frequency	29490.0 MHz -29500.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-21.5 dB/K
Min. Saturation Flux Density	-112.3 dBW/m2
Max. Saturation Flux Density	-93.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 7:

Question	Response
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Beam ID	KBLU
Receive Beam Frequency	29995.0 MHz -30000.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	51.7 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	25.2 dB/K
Min. Saturation Flux Density	-143.3 dBW/m2
Max. Saturation Flux Density	-121.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 8:

Question	Response
Beam ID	K6L2
Receive Beam Frequency	28400.0 MHz -28600.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	47.8 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	21.3 dB/K
Min. Saturation Flux Density	-146.0 dBW/m2
Max. Saturation Flux Density	-113.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Receiving Beams 9:

Question	Response
Beam ID	K6LG
Receive Beam Frequency	28400.0 MHz -28600.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	51.2 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	24.7 dB/K
Min. Saturation Flux Density	-120.3 dBW/m2
Max. Saturation Flux Density	-91.4 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 10:

Question	Response
Beam ID	K7L1

Receive Beam Frequency	28600.0 MHz -29100.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	35.1 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	8.6 dB/K
Min. Saturation Flux Density	-146.2 dBW/m2
Max. Saturation Flux Density	-113.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Receiving Beams 11:

Question	Response
Beam ID	K7L2
Receive Beam Frequency	28600.0 MHz -29100.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	47.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	21.4 dB/K

Min. Saturation Flux Density	-146.2 dBW/m2
Max. Saturation Flux Density	-113.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Receiving Beams 12:

Question	Response
Beam ID	K9L2
Receive Beam Frequency	29500.0 MHz -29995.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	48.1 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	21.7 dB/K
Min. Saturation Flux Density	-146.8 dBW/m2
Max. Saturation Flux Density	-113.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Receiving Beams 13:

Question	Response
Beam ID	K9LG
Receive Beam Frequency	29500.0 MHz -29995.0 MHz

Beam Type	Steerable
Polarization	LHCP
Peak Gain	51.6 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	25.1 dB/K
Min. Saturation Flux Density	-116.4 dBW/m2
Max. Saturation Flux Density	-90.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 14:

Question	Response
Beam ID	KCLH
Receive Beam Frequency	29490.0 MHz -29500.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	51.5 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
G/T at Max. Gain Point	25.0 dB/K
Min. Saturation Flux Density	-152.2 dBW/m2

Max. Saturation Flux Density	-124.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 15:

Question	Response
Beam ID	K5RG
Receive Beam Frequency	27600.0 MHz -28400.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	51.1 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	24.6 dB/K
Min. Saturation Flux Density	-114.3 dBW/m2
Max. Saturation Flux Density	-88.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 16:

Question	Response
Beam ID	K6R1
Receive Beam Frequency	28400.0 MHz -28600.0 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	8.5 dB/K
Min. Saturation Flux Density	-146.0 dBW/m2
Max. Saturation Flux Density	-113.1 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Receiving Beams 17:

Question	Response
Beam ID	K6R2
Receive Beam Frequency	28400.0 MHz -28600.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	47.8 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	21.3 dB/K
Min. Saturation Flux Density	-146.0 dBW/m2
Max. Saturation Flux Density	-113.2 dBW/m2

Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Receiving Beams 18:

Question	Response
Beam ID	K6RG
Receive Beam Frequency	28400.0 MHz -28600.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	51.2 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	24.7 dB/K
Min. Saturation Flux Density	-120.3 dBW/m2
Max. Saturation Flux Density	-91.4 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 19:

Question	Response
Beam ID	K7R1
Receive Beam Frequency	28600.0 MHz -29100.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP

Peak Gain	35.1 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	8.6 dB/K
Min. Saturation Flux Density	-146.2 dBW/m2
Max. Saturation Flux Density	-113.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Receiving Beams 20:

Question	Response
Beam ID	K7R2
Receive Beam Frequency	28600.0 MHz -29100.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	47.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	21.4 dB/K
Min. Saturation Flux Density	-146.2 dBW/m2
Max. Saturation Flux Density	-113.2 dBW/m2
Co- or Cross Polar Mode	C

Receiving Beams 21:

Service Area Description	Visible Earth above 40 deg elevation angle
Question	Response
Beam ID	K7RG
Receive Beam Frequency	28600.0 MHz -29100.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	51.3 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	24.9 dB/K
Min. Saturation Flux Density	-116.4 dBW/m2
Max. Saturation Flux Density	-90.5 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 22:

Question	Response
Beam ID	K8RG
Receive Beam Frequency	29100.0 MHz -29490.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	51.5 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
G/T at Max. Gain Point	25.0 dB/K
Min. Saturation Flux Density	-117.4 dBW/m2
Max. Saturation Flux Density	-91.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 23:

Question	Response
Beam ID	K9R1
Receive Beam Frequency	29500.0 MHz -29995.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	35.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	8.9 dB/K
Min. Saturation Flux Density	-146.8 dBW/m2
Max. Saturation Flux Density	-112.5 dBW/m2
Co- or Cross Polar Mode	C

Receiving Beams 24:

Service Area Description	Visible Earth above 40 deg elevation angle
Question	Response
Beam ID	K9R2
Receive Beam Frequency	29500.0 MHz -29995.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	48.1 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	21.7 dB/K
Min. Saturation Flux Density	-146.8 dBW/m2
Max. Saturation Flux Density	-113.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Receiving Beams 25:

Question	Response
Beam ID	K9RG
Receive Beam Frequency	29500.0 MHz -29995.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	51.6 dBi

Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	25.1 dB/K
Min. Saturation Flux Density	-116.4 dBW/m2
Max. Saturation Flux Density	-90.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 26:

Question	Response
Beam ID	KCRL
Receive Beam Frequency	29490.0 MHz -29500.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-21.5 dB/K
Min. Saturation Flux Density	-112.3 dBW/m2
Max. Saturation Flux Density	-93.2 dBW/m2
Co- or Cross Polar Mode	C

Receiving Beams 27:

Service Area Description	Visible Earth above 25 deg elevation angle
Question	Response
Beam ID	KCRH
Receive Beam Frequency	29490.0 MHz -29500.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	51.5 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
G/T at Max. Gain Point	25.0 dB/K
Min. Saturation Flux Density	-152.2 dBW/m2
Max. Saturation Flux Density	-124.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Beams 28:

Question	Response
Beam ID	KBRU
Receive Beam Frequency	29995.0 MHz -30000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	51.7 dBi

Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	25.2 dB/K
Min. Saturation Flux Density	-143.3 dBW/m2
Max. Saturation Flux Density	-121.7 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Receiving Channels (36)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
KF05	250.0	28275.0	Feeder Link
KF04	250.0	28025.0	Feeder Link
KS26	245.0	29872.5	Service Link
KS22	250.0	28975.0	Service Link
KS21	250.0	28975.0	Service Link
KS20	250.0	28725.0	Service Link
KTC1	0.016	29499.0	TT&C
KF27	390.0	29295.0	Feeder Link
KF06	250.0	28275.0	Feeder Link
KS24	250.0	29625.0	Service Link
KS23	250.0	29625.0	Service Link
KTC2	0.016	29499.0	TT&C
KS18	200.0	28500.0	Service Link
KF07	200.0	28500.0	Feeder Link
KF11	250.0	28975.0	Feeder Link
KF10	250.0	28725.0	Feeder Link
KF09	250.0	28725.0	Feeder Link
KF03	250.0	28025.0	Feeder Link
KTC3	1.2	29495.0	TT&C
KF16	245.0	29872.5	Feeder Link
KF15	245.0	29872.5	Feeder Link
KF14	250.0	29625.0	Feeder Link
KTC6	1.2	29497.0	TT&C
KF01	300.0	27750.0	Feeder Link

KF02	300.0	27750.0	Feeder Link
KS25	245.0	29872.5	Service Link
KS19	250.0	28725.0	Service Link
KS17	200.0	28500.0	Service Link
KTC5	1.2	29497.0	TT&C
KTC4	1.2	29495.0	TT&C
KF13	250.0	29625.0	Feeder Link
KF12	250.0	28975.0	Feeder Link
KTb2	0.4	29997.5	TT&C
KTb1	0.4	29997.5	TT&C
KF08	200.0	28500.0	Feeder Link
KF28	390.0	29295.0	Feeder Link

Transmitting
Beams 1:

Question	Response
Beam ID	K1LR
Transmit Beam Frequency	18600.0 MHz -18800.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	31.1 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	-16.2 dBW/Hz
Max. Transmit EIRP	66.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* (dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):
1.0 MHz	-119.8	-119.6	-119.5	-119.4	-119.2	-118.3

Transmitting
Beams 2:

Question	Response
Beam ID	K2LR
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz

Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	31.2 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	-15.9 dBW/Hz
Max. Transmit EIRP	70.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-117.1	-117.0	-116.8	-116.7	-116.5	-115.6

Transmitting Beams 3:

Question	Response
Beam ID	K4LR
Transmit Beam Frequency	19700.0 MHz -20195.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	31.6 dBi
Antenna Pointing Error	0.1 degrees

Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-14.8 dBW/Hz
Max. Transmit EIRP	71.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

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	-116.0	-115.9	-115.7	-115.6	-115.5	-114.5

Transmitting Beams 4:

Question	Response
Beam ID	KBRB
Transmit Beam Frequency	20195.0 MHz -20200.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	22.5 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-22.2 dBW/Hz

Max. Transmit EIRP	44.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
* BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-123.5	-123.3	-123.2	-123.1	-122.9	-122.0

Transmitting Beams 5:

Question	Response
Beam ID	KTLD
Transmit Beam Frequency	19690.0 MHz -19700.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	48.0 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	-26.5 dBW/Hz
Max. Transmit EIRP	28.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-127.7	-127.6	-127.4	-127.3	-127.2	-126.2

Transmitting Beams 6:

Question	Response
Beam ID	KTLL
Transmit Beam Frequency	19690.0 MHz -19700.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-33.5 dBW/Hz
Max. Transmit EIRP	6.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):

1.0 MHz	-134.8	-134.6	-134.5	-134.3	-134.2	-133.2
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**Transmitting
Beams 7:**

Question	Response
Beam ID	K0LR
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	30.8 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
Max. Transmit EIRP Density	-16.7 dBW/Hz
Max. Transmit EIRP	71.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

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	-118.0	-117.8	-117.7	-117.6	-117.4	-116.5

**Transmitting
Beams 8:**

Question	Response
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Beam ID	K0L1
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	34.6 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-16.8 dBW/Hz
Max. Transmit EIRP	71.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
* BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-118.1	-117.9	-117.8	-117.7	-117.5	-116.6

Transmitting Beams 9:

Question	Response
Beam ID	K0L2
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP

Peak Gain	47.3 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	-15.2 dBW/Hz
Max. Transmit EIRP	73.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

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	-116.4	-116.3	-116.1	-116.0	-115.8	-114.9

Transmitting Beams 10:

Question	Response
Beam ID	K1L1
Transmit Beam Frequency	18600.0 MHz -18800.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	34.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-16.3 dBW/Hz
Max. Transmit EIRP	65.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

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	-119.9	-119.7	-119.6	-119.5	-119.3	-118.4

Transmitting Beams 11:

Question	Response
Beam ID	K1L2
Transmit Beam Frequency	18600.0 MHz -18800.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	47.5 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	-16.3 dBW/Hz
Max. Transmit EIRP	65.9 dBW
Co- or Cross Polar Mode	C

Service Area Description	Visible Earth above 40 deg elevation angle
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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	-119.9	-119.7	-119.6	-119.5	-119.3	-118.4

Transmitting Beams 12:

Question	Response
Beam ID	K1LG
Transmit Beam Frequency	18600.0 MHz -18800.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	46.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-19.2 dBW/Hz
Max. Transmit EIRP	63.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

**Transmitting
Beams 13:**

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-120.5	-120.3	-120.2	-120.1	-119.9	-119.0

Question	Response
Beam ID	K2L1
Transmit Beam Frequency	18800.0 MHz -19300.0 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
Max. Transmit EIRP Density	-16.0 dBW/Hz
Max. Transmit EIRP	70.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-117.2	-117.1	-116.9	-116.8	-116.6	-115.7

**Transmitting
Beams 14:**

Question	Response
Beam ID	K2L2
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	47.7 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	-15.1 dBW/Hz
Max. Transmit EIRP	71.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* (dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):
1.0 MHz	-116.4	-116.2	-116.1	-115.9	-115.8	-114.8

**Transmitting
Beams 15:**

Question	Response
Beam ID	K2LG
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz

Beam Type	Steerable
Polarization	LHCP
Peak Gain	47.1 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	-15.2 dBW/Hz
Max. Transmit EIRP	71.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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	-116.4	-116.3	-116.1	-116.0	-115.8	-114.9

Transmitting Beams 16:

Question	Response
Beam ID	K3LG
Transmit Beam Frequency	19300.0 MHz -19690.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	47.3 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	-14.8 dBW/Hz
Max. Transmit EIRP	70.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
* BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-116.1	-115.9	-115.8	-115.6	-115.5	-114.5

Transmitting Beams 17:

Question	Response
Beam ID	K4L1
Transmit Beam Frequency	19700.0 MHz -20195.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	35.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-14.9 dBW/Hz

Max. Transmit EIRP	71.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
* BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-116.1	-116.0	-115.8	-115.7	-115.6	-114.6

Transmitting Beams 18:

Question	Response
Beam ID	K4L2
Transmit Beam Frequency	19700.0 MHz -20195.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	48.1 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	-13.2 dBW/Hz
Max. Transmit EIRP	73.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-114.4	-114.3	-114.1	-114.0	-113.9	-112.9

Transmitting Beams 19:

Question	Response
Beam ID	K4LG
Transmit Beam Frequency	19700.0 MHz -20195.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	47.5 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	-14.4 dBW/Hz
Max. Transmit EIRP	71.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):

1.0 MHz	-115.7	-115.5	-115.4	-115.2	-115.1	-114.2
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**Transmitting
Beams 20:**

Question	Response
Beam ID	KTLH
Transmit Beam Frequency	19690.0 MHz -19700.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	48.0 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	-39.5 dBW/Hz
Max. Transmit EIRP	20.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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	-140.8	-140.6	-140.5	-140.3	-140.2	-139.2

**Transmitting
Beams 21:**

Question	Response
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Beam ID	KTLS
Transmit Beam Frequency	19690.0 MHz -19700.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	48.0 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	-30.1 dBW/Hz
Max. Transmit EIRP	24.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* 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	-131.4	-131.2	-131.1	-130.9	-130.8	-129.8

Transmitting Beams 22:

Question	Response
Beam ID	KBLB
Transmit Beam Frequency	20195.0 MHz -20200.0 MHz
Beam Type	Fixed
Polarization	LHCP

Peak Gain	22.5 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-22.2 dBW/Hz
Max. Transmit EIRP	44.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* 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	-123.5	-123.3	-123.2	-123.1	-122.9	-122.0

Transmitting Beams 23:

Question	Response
Beam ID	K0RR
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	30.8 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
Max. Transmit EIRP Density	-16.7 dBW/Hz
Max. Transmit EIRP	71.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

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	-118.0	-117.8	-117.7	-117.6	-117.4	-116.5

Transmitting Beams 24:

Question	Response
Beam ID	K0R1
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	34.6 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-16.8 dBW/Hz
Max. Transmit EIRP	71.4 dBW
Co- or Cross Polar Mode	C

Service Area Description

Visible Earth above 40 deg
elevation angle

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	-118.1	-117.9	-117.8	-117.7	-117.5	-116.6

**Transmitting
Beams 25:**

Question	Response
Beam ID	K0R2
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	47.3 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	-15.2 dBW/Hz
Max. Transmit EIRP	73.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Max. Power Flux Density

Transmitting
Beams 26:

	* 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	-116.4	-116.3	-116.1	-116.0	-115.8	-114.9

Question	Response
Beam ID	K1R1
Transmit Beam Frequency	18600.0 MHz -18800.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	34.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-16.3 dBW/Hz
Max. Transmit EIRP	65.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

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	-119.9	-119.7	-119.6	-119.5	-119.3	-118.4

**Transmitting
Beams 27:**

Question	Response
Beam ID	K1R2
Transmit Beam Frequency	18600.0 MHz -18800.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	47.5 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	-16.3 dBW/Hz
Max. Transmit EIRP	65.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* (dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):
1.0 MHz	-119.9	-119.7	-119.6	-119.5	-119.3	-118.4

**Transmitting
Beams 28:**

Question	Response
Beam ID	K1RG
Transmit Beam Frequency	18600.0 MHz -18800.0 MHz

Beam Type	Steerable
Polarization	RHCP
Peak Gain	46.9 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-19.2 dBW/Hz
Max. Transmit EIRP	63.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

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	-120.5	-120.3	-120.2	-120.1	-119.9	-119.0

Transmitting Beams 29:

Question	Response
Beam ID	K2RR
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	31.2 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	-15.9 dBW/Hz
Max. Transmit EIRP	70.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
* BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-117.1	-117.0	-116.8	-116.7	-116.5	-115.6

Transmitting Beams 30:

Question	Response
Beam ID	K2R1
Transmit Beam Frequency	18800.0 MHz -19300.0 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
Max. Transmit EIRP Density	-16.0 dBW/Hz

Max. Transmit EIRP	70.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
* BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-117.2	-117.1	-116.9	-116.8	-116.6	-115.7

Transmitting Beams 31:

Question	Response
Beam ID	K2R2
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	47.7 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	-15.1 dBW/Hz
Max. Transmit EIRP	71.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-116.4	-116.2	-116.1	-115.9	-115.8	-114.8

Transmitting Beams 32:

Question	Response
Beam ID	K2RG
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	47.1 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	-15.2 dBW/Hz
Max. Transmit EIRP	71.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):

1.0 MHz	-116.4	-116.3	-116.1	-116.0	-115.8	-114.9
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**Transmitting
Beams 33:**

Question	Response
Beam ID	K3RG
Transmit Beam Frequency	19300.0 MHz -19690.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	47.3 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	-14.8 dBW/Hz
Max. Transmit EIRP	70.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* BW:	(dBW/m² /BW):	(dBW/m² /BW):	(dBW/m² /BW):	(dBW/m² /BW):	(dBW/m² /BW):	(dBW/m² /BW):
1.0 MHz	-116.1	-115.9	-115.8	-115.6	-115.5	-114.5

**Transmitting
Beams 34:**

Question	Response
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Beam ID	K4RR
Transmit Beam Frequency	19700.0 MHz -20195.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	31.6 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-14.8 dBW/Hz
Max. Transmit EIRP	71.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

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	-116.0	-115.9	-115.7	-115.6	-115.5	-114.5

Transmitting Beams 35:

Question	Response
Beam ID	K4R1
Transmit Beam Frequency	19700.0 MHz -20195.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP

Peak Gain	35.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-14.9 dBW/Hz
Max. Transmit EIRP	71.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

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	-116.1	-116.0	-115.8	-115.7	-115.6	-114.6

Transmitting Beams 36:

Question	Response
Beam ID	K4R2
Transmit Beam Frequency	19700.0 MHz -20195.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	48.1 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	-13.2 dBW/Hz
Max. Transmit EIRP	73.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

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	-114.4	-114.3	-114.1	-114.0	-113.9	-112.9

Transmitting Beams 37:

Question	Response
Beam ID	K4RG
Transmit Beam Frequency	19700.0 MHz -20195.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	47.5 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	-14.4 dBW/Hz
Max. Transmit EIRP	71.7 dBW
Co- or Cross Polar Mode	C

Service Area Description	Visible Earth above 25 deg elevation angle
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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	-115.7	-115.5	-115.4	-115.2	-115.1	-114.2

Transmitting Beams 38:

Question	Response
Beam ID	KTRL
Transmit Beam Frequency	19690.0 MHz -19700.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	5.0 dBi
Antenna Pointing Error	0.2 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-33.5 dBW/Hz
Max. Transmit EIRP	6.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

**Transmitting
Beams 39:**

	* 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	-134.8	-134.6	-134.5	-134.3	-134.2	-133.2

Question	Response
Beam ID	KTRH
Transmit Beam Frequency	19690.0 MHz -19700.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	48.0 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	-39.5 dBW/Hz
Max. Transmit EIRP	20.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* 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	-140.8	-140.6	-140.5	-140.3	-140.2	-139.2

**Transmitting
Beams 40:**

Question	Response
Beam ID	KTRD
Transmit Beam Frequency	19690.0 MHz -19700.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	48.0 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	-26.5 dBW/Hz
Max. Transmit EIRP	28.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* (dBW/m ² /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	-127.7	-127.6	-127.4	-127.3	-127.2	-126.2

**Transmitting
Beams 41:**

Question	Response
Beam ID	KTRS
Transmit Beam Frequency	19690.0 MHz -19700.0 MHz

Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	48.0 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	-30.1 dBW/Hz
Max. Transmit EIRP	24.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
* BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-131.4	-131.2	-131.1	-130.9	-130.8	-129.8

Transmitting Beams 42:

Question	Response
Beam ID	K1RR
Transmit Beam Frequency	18600.0 MHz -18800.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	31.1 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	-16.2 dBW/Hz
Max. Transmit EIRP	66.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 40 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
* BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-119.8	-119.6	-119.5	-119.4	-119.2	-118.3

Transmitting Beams 43:

Question	Response
Beam ID	KTLG
Transmit Beam Frequency	19690.0 MHz -19700.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	47.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-39.5 dBW/Hz

Max. Transmit EIRP	20.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
* BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-140.8	-140.6	-140.5	-140.3	-140.2	-139.2

Transmitting Beams 44:

Question	Response
Beam ID	KTRG
Transmit Beam Frequency	19690.0 MHz -19700.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	47.4 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-39.5 dBW/Hz
Max. Transmit EIRP	20.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth above 25 deg elevation angle

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²	(dbW/m ²
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
1.0 MHz	-140.8	-140.6	-140.5	-140.3	-140.2	-139.2

Transmitting Channels (38)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
KTB5	0.4	19693.0	TT&C
KF25	245.0	20072.5	Feeder Link
KF24	250.0	19825.0	Feeder Link
KF23	250.0	19825.0	Feeder Link
KF18	200.0	18700.0	Feeder Link
KF17	200.0	18700.0	Feeder Link
KTT2	0.012	19699.0	TT&C
KTT1	0.012	19699.0	TT&C
KS01	300.0	17950.0	Service Link
KTB3	5.0	20197.5	TT&C
KTT4	1.2	19697.0	TT&C
KTT3	1.2	19697.0	TT&C
KF21	250.0	19175.0	Feeder Link
KS16	245.0	20072.5	Service Link
KS15	245.0	20072.5	Service Link
KS10	250.0	18925.0	Service Link
KS09	250.0	18925.0	Service Link
KF30	390.0	19495.0	Feeder Link
KF29	390.0	19495.0	Feeder Link
KS02	300.0	17950.0	Service Link
KS11	250.0	19175.0	Service Link
KTB6	0.4	19693.0	TT&C
KTB8	0.4	19695.0	TT&C
KF26	245.0	20072.5	Feeder Link

KS08	200.0	18700.0	Service Link
KS14	250.0	19825.0	Service Link
KTB4	5.0	20197.5	TT&C
KS07	200.0	18700.0	Service Link
KS06	250.0	18475.0	Service Link
KF22	250.0	19175.0	Feeder Link
KF19	250.0	18925.0	Feeder Link
KS03	250.0	18225.0	Service Link
KF20	250.0	18925.0	Feeder Link
KS13	250.0	19825.0	Service Link
KS05	250.0	18475.0	Service Link
KS04	250.0	18225.0	Service Link
KS12	250.0	19175.0	Service Link
KTB7	0.4	19695.0	TT&C

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?	No
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>K0M2.gxt</u>	K4L2	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>K1MG.gxt</u>	K4LG	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>KTMH.gxt</u>	KTLH	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>KTMS.gxt</u>	KTLS	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>KTML.gxt</u>	KTLL	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>KTMD.gxt</u>	KTLD	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>KBMB.gxt</u>	KBLB	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>K0MR.gxt</u>	K0RR	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>K5MG.gxt</u>	K5LG	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>K0M1.gxt</u>	K1R1	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>K0M2.gxt</u>	K1R2	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>K0MR.gxt</u>	K2RR	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>K0M1.gxt</u>	K2R1	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>K0M2.gxt</u>	K2R2	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>K1MG.gxt</u>	K2RG	NGSO Antenna Gain Data	GXT file (*.gxt)	
<u>K1MG.gxt</u>	K3RG	NGSO Antenna Gain Data	GXT file (*.gxt)	

<u>K0MR.gxt</u>	K4RR	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0M1.gxt</u>	K4R1	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K1MG.gxt</u>	K4RG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>KTML.gxt</u>	KTRL	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>KTMH.gxt</u>	KTRH	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>KTMS.gxt</u>	KTRS	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0M2.gxt</u>	K4R2	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>KBMB.gxt</u>	KBRB	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K1MG.gxt</u>	K1RG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K6M2.gxt</u>	K6R2	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K6M1.gxt</u>	K6L1	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K5MG.gxt</u>	K6RG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K5MG.gxt</u>	K5RG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K6M2.gxt</u>	K6L2	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K5MG.gxt</u>	K6LG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K6M1.gxt</u>	K6R1	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K6M1.gxt</u>	K7L1	NGSO Antenna Gain Data	GXT file (*.gxt)

<u>K6M2.gxt</u>	K7L2	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K5MG.gxt</u>	K7LG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K5MG.gxt</u>	K8LG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K6M1.gxt</u>	K9L1	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K6M2.gxt</u>	K9L2	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K5MG.gxt</u>	K9LG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>KBMU.gxt</u>	KBLU	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K5MG.gxt</u>	K7RG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K6M2.gxt</u>	K7R2	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0M1.gxt</u>	K0L1	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0MR.gxt</u>	K1RR	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0MR.gxt</u>	K0LR	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0M1.gxt</u>	K0R1	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K6M1.gxt</u>	K7R1	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K5MG.gxt</u>	K8RG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K6M1.gxt</u>	K9R1	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0M1.gxt</u>	K1L1	NGSO Antenna Gain Data	GXT file (*.gxt)

<u>K0M2.gxt</u>	K1L2	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K1MG.gxt</u>	K1LG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0MR.gxt</u>	K2LR	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0M1.gxt</u>	K2L1	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K1MG.gxt</u>	K2LG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K1MG.gxt</u>	K3LG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0MR.gxt</u>	K4LR	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0M1.gxt</u>	K4L1	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>KTMD.gxt</u>	KTRD	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0M2.gxt</u>	K2L2	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0M2.gxt</u>	K0L2	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0MR.gxt</u>	K1LR	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K6M2.gxt</u>	K9R2	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K5MG.gxt</u>	K9RG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>KBMU.gxt</u>	KBRU	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>KCMH. gxt</u>	KCLH	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>KCML.gxt</u>	KCLL	NGSO Antenna Gain Data	GXT file (*.gxt)

<u>KCMH.gxt</u>	KCRH	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>KCML.gxt</u>	KCRL	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>K0M2.gxt</u>	K0R2	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>KTMG.gxt</u>	KTLG	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>KTMG.gxt</u>	KTRG	NGSO Antenna Gain Data	GXT file (*.gxt)