



312 File Number: **SATAPL2018092700076**

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## Filing Description

Question	Response
Description	NGSO

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## Satellite Information

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	VIASAT-NGSO
Estimated Lifetime of Satellite(s) From Date of Launch	20 Years
Will the space station(s) operate on a Common Carrier basis?	No

## Operating Frequency Bands (9)

Nature of service	Description	Frequency Band(s)	Mode Type
Fixed-Satellite Service		17800.0 MHz -18600.0 MHz	Transmit
Fixed-Satellite Service		18800.0 MHz -19300.0 MHz	Transmit
Fixed-Satellite Service		27500.0 MHz -28350.0 MHz	Receive
Fixed-Satellite Service		29500.0 MHz -30000.0 MHz	Receive
Fixed-Satellite Service		47200.0 MHz -50200.0 MHz	Receive
Fixed-Satellite Service		50400.0 MHz -51400.0 MHz	Receive
Fixed-Satellite Service		28350.0 MHz -29100.0 MHz	Receive
Fixed-Satellite Service		37500.0 MHz -42000.0 MHz	Transmit
Fixed-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	20
Orbit Epoch Date	01/01/2017
Celestial Reference Body	Earth

## Orbital Plane 1:

Question	Response
Number of Satellites in Plane	5
Inclination Angle	87.0 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	90.0 degrees
Orbital Period	17517.2 seconds
Apogee	8200.0 km
Perigee	8200.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-179.999 degrees
Active Service Arc End Angle with respect to Ascending Node	180.0 degrees

### Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	216.0
2	144.0
3	72.0
4	0.0
5	288.0

## Orbital Plane 2:

Question	Response
Number of Satellites in Plane	5
Inclination Angle	87.0 degrees
Right Ascension of Ascending Node	45.0 degrees
Argument of Perigee	90.0 degrees
Orbital Period	17517.2 seconds

Apogee	8200.0 km
Perigee	8200.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-179.999 degrees
Active Service Arc End Angle with respect to Ascending Node	180.0 degrees

### Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	18.0
2	90.0
3	162.0
4	234.0
5	306.0

### Orbital Plane 3:

Question	Response
Number of Satellites in Plane	5
Inclination Angle	87.0 degrees
Right Ascension of Ascending Node	90.0 degrees
Argument of Perigee	90.0 degrees
Orbital Period	17517.2 seconds
Apogee	8200.0 km
Perigee	8200.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-179.999 degrees
Active Service Arc End Angle with respect to Ascending Node	180.0 degrees

### Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	36.0
2	108.0
3	180.0
4	252.0
5	324.0

### Orbital Plane 4:

Question	Response
Number of Satellites in Plane	5
Inclination Angle	87.0 degrees
Right Ascension of Ascending Node	135.0 degrees
Argument of Perigee	90.0 degrees
Orbital Period	17517.2 seconds
Apogee	8200.0 km
Perigee	8200.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-179.999 degrees
Active Service Arc End Angle with respect to Ascending Node	180.0 degrees

### Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	342.0
2	270.0
3	198.0
4	126.0
5	54.0

## Receiving Beams 1:

Question	Response
Beam ID	RV1L
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	54.4 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	27.0 dB/K
Min. Saturation Flux Density	-110.0 dBW/m <sup>2</sup>
Max. Saturation Flux Density	-62.0 dBW/m <sup>2</sup>
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

## Receiving Beams 2:

Question	Response
Beam ID	RK1L
Receive Beam Frequency	27500.0 MHz -28350.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	49.5 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	22.0 dB/K
Min. Saturation Flux Density	-110.0 dBW/m2
Max. Saturation Flux Density	-78.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

### Receiving Beams 3:

Question	Response
Beam ID	RK3R
Receive Beam Frequency	29500.0 MHz -30000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	49.9 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	22.5 dB/K
Min. Saturation Flux Density	-110.0 dBW/m2
Max. Saturation Flux Density	-80.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

### Receiving

## Beams 4:

Question	Response
Beam ID	RK3L
Receive Beam Frequency	29500.0 MHz -30000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	49.9 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	22.5 dB/K
Min. Saturation Flux Density	-110.0 dBW/m <sup>2</sup>
Max. Saturation Flux Density	-80.0 dBW/m <sup>2</sup>
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

## Receiving Beams 5:

Question	Response
Beam ID	RV1R
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	54.4 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	27.0 dB/K
Min. Saturation Flux Density	-110.0 dBW/m2
Max. Saturation Flux Density	-62.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

**Receiving Beams 6:**

Question	Response
Beam ID	RK1R
Receive Beam Frequency	27500.0 MHz -28350.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	49.5 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	22.0 dB/K
Min. Saturation Flux Density	-110.0 dBW/m2
Max. Saturation Flux Density	-78.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

**Receiving Beams 7:**

Question	Response
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Beam ID	RK2L
Receive Beam Frequency	28350.0 MHz -29100.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	49.7 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	22.3 dB/K
Min. Saturation Flux Density	-110.0 dBW/m2
Max. Saturation Flux Density	-78.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

**Receiving Beams 8:**

Question	Response
Beam ID	CK2L
Receive Beam Frequency	28350.0 MHz -29100.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	13.9 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	-13.5 dB/K
Min. Saturation Flux Density	-137.0 dBW/m2
Max. Saturation Flux Density	-107.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

**Receiving Beams 9:**

Question	Response
Beam ID	CV1L
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	13.9 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	-13.5 dB/K
Min. Saturation Flux Density	-137.0 dBW/m2
Max. Saturation Flux Density	-97.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

**Receiving Beams 10:**

Question	Response
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Beam ID	CV2R
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	13.9 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	-13.5 dB/K
Min. Saturation Flux Density	-137.0 dBW/m2
Max. Saturation Flux Density	-97.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

**Receiving Beams 11:**

Question	Response
Beam ID	CV2L
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	13.9 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	-13.5 dB/K
Min. Saturation Flux Density	-137.0 dBW/m2
Max. Saturation Flux Density	-97.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

**Receiving  
Beams 12:**

Question	Response
Beam ID	CK2R
Receive Beam Frequency	28350.0 MHz -29100.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	13.9 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	-13.5 dB/K
Min. Saturation Flux Density	-137.0 dBW/m2
Max. Saturation Flux Density	-107.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

**Receiving  
Beams 13:**

Question	Response
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Beam ID	CK3L
Receive Beam Frequency	29500.0 MHz -30000.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	13.9 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	-13.5 dB/K
Min. Saturation Flux Density	-137.0 dBW/m2
Max. Saturation Flux Density	-107.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

**Receiving Beams 14:**

Question	Response
Beam ID	CK3R
Receive Beam Frequency	29500.0 MHz -30000.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	13.9 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	-13.5 dB/K
Min. Saturation Flux Density	-137.0 dBW/m2
Max. Saturation Flux Density	-107.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

**Receiving Beams 15:**

Question	Response
Beam ID	CV1R
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	13.9 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	-13.5 dB/K
Min. Saturation Flux Density	-137.0 dBW/m2
Max. Saturation Flux Density	-97.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

**Receiving Beams 16:**

Question	Response
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Beam ID	RV2L
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	54.4 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	27.2 dB/K
Min. Saturation Flux Density	-110.0 dBW/m2
Max. Saturation Flux Density	-67.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

**Receiving Beams 17:**

Question	Response
Beam ID	RV2R
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	54.6 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	27.2 dB/K
Min. Saturation Flux Density	-110.0 dBW/m2
Max. Saturation Flux Density	-67.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

## Receiving Beams 18:

Question	Response
Beam ID	RK2R
Receive Beam Frequency	28350.0 MHz -29100.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	49.7 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	22.3 dB/K
Min. Saturation Flux Density	-110.0 dBW/m2
Max. Saturation Flux Density	-78.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

**Receiving Channels (9)**

<b>Channel ID</b>	<b>Channel Bandwidth (MHz)</b>	<b>Center Frequency s (MHz)</b>	<b>Feeder Link, Service Link or TT&amp;C</b>
<b>R01K</b>	850.0	27925.0	Service Link
<b>R05V</b>	1000.0	50900.0	Service Link
<b>R02K</b>	750.0	28725.0	Service Link
<b>C004</b>	50.0	47225.0	Service Link
<b>C003</b>	50.0	29525.0	Service Link
<b>C002</b>	50.0	28375.0	Service Link
<b>C005</b>	50.0	50425.0	Service Link
<b>R04V</b>	3000.0	48700.0	Service Link
<b>R03K</b>	500.0	29750.0	Service Link

## Transmitting Beams 1:

Question	Response
Beam ID	TK1R
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	45.6 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	-24.0 dBW/Hz
Max. Transmit EIRP	65.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

### Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
<b>1.0 MHz</b>	-123.3	-123.3	-120.8	-118.3	-115.8	-113.3

## Transmitting Beams 2:

Question	Response
Beam ID	TK1L
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz

Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	45.8 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	-24.0 dBW/Hz
Max. Transmit EIRP	65.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

### Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
<b>1.0 MHz</b>	-123.3	-123.3	-120.8	-118.3	-115.8	-113.3

### Transmitting Beams 3:

Question	Response
Beam ID	TK2R
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	46.1 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	-15.7 dBW/Hz
Max. Transmit EIRP	71.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

### Max. Power Flux Density

	* 0° - 5° (dBW/m <sup>2</sup> ) /BW:	* 5° - 10° (dBW/m <sup>2</sup> ) /BW:	* 10° - 15° (dBW/m <sup>2</sup> ) /BW:	* 15° - 20° (dBW/m <sup>2</sup> ) /BW:	* 20° - 25° (dBW/m <sup>2</sup> ) /BW:	* 25° - 90° (dBW/m <sup>2</sup> ) /BW:
<b>1.0 MHz</b>	-115.0	-115.0	-112.5	-110.0	-107.5	-105.0

### Transmitting Beams 4:

Question	Response
Beam ID	TK2L
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	46.1 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	-15.7 dBW/Hz

Max. Transmit EIRP	71.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

### Max. Power Flux Density

	* 0° - 5° (dBW/m <sup>2</sup> ) /BW:	* 5° - 10° (dBW/m <sup>2</sup> ) /BW:	* 10° - 15° (dBW/m <sup>2</sup> ) /BW:	* 15° - 20° (dBW/m <sup>2</sup> ) /BW:	* 20° - 25° (dBW/m <sup>2</sup> ) /BW:	* 25° - 90° (dBW/m <sup>2</sup> ) /BW:
<b>1.0 MHz</b>	-115.0	-115.0	-112.5	-110.0	-107.5	-105.0

### Transmitting Beams 5:

Question	Response
Beam ID	TV1R
Transmit Beam Frequency	37500.0 MHz -40000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	52.4 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	-27.7 dBW/Hz
Max. Transmit EIRP	66.2 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 <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
<b>1.0</b> <b>MHz</b>	-132.0	-132.0	-128.2	-124.5	-120.7	-117.0

## Transmitting Beams 6:

Question	Response
Beam ID	TV1L
Transmit Beam Frequency	37500.0 MHz -40000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	52.4 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	-27.7 dBW/Hz
Max. Transmit EIRP	66.2 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 <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
<b>1.0</b> <b>MHz</b>	-132.0	-132.0	-128.2	-124.5	-120.7	-117.0

## Transmitting Beams 7:

Question	Response
Beam ID	TV2R
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	52.9 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	-15.7 dBW/Hz
Max. Transmit EIRP	77.3 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 <sup>2</sup> /BW):	(dBW/m <sup>2</sup> /BW):	(dBW/m <sup>2</sup> /BW):	(dBW/m <sup>2</sup> /BW):	(dBW/m <sup>2</sup> /BW):	(dBW/m <sup>2</sup> /BW):	(dBW/m <sup>2</sup> /BW):
<b>1.0 MHz</b>	-120.0	-120.0	-116.2	-112.5	-108.7	-105.0

## Transmitting Beams 8:

Question	Response
Beam ID	BK1R
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz

Beam Type	Fixed
Polarization	RHCP
Peak Gain	13.9 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	-24.0 dBW/Hz
Max. Transmit EIRP	36.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

### Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
<b>1.0 MHz</b>	-123.3	-123.3	-120.8	-118.3	-115.3	-113.3

### Transmitting Beams 9:

Question	Response
Beam ID	TV2L
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	52.9 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	-15.7 dBW/Hz
Max. Transmit EIRP	77.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

### Max. Power Flux Density

	* 0° - 5° (dBW/m <sup>2</sup> ) /BW):	* 5° - 10° (dBW/m <sup>2</sup> ) /BW):	* 10° - 15° (dBW/m <sup>2</sup> ) /BW):	* 15° - 20° (dBW/m <sup>2</sup> ) /BW):	* 20° - 25° (dBW/m <sup>2</sup> ) /BW):	* 25° - 90° (dBW/m <sup>2</sup> ) /BW):
<b>1.0 MHz</b>	-120.0	-120.0	-116.2	-112.5	-108.7	-105.0

### Transmitting Beams 10:

Question	Response
Beam ID	BK1L
Transmit Beam Frequency	17800.0 MHz -18600.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	13.9 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	-24.0 dBW/Hz

Max. Transmit EIRP	36.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

### Max. Power Flux Density

	* 0° - 5° (dBW/m <sup>2</sup> )	* 5° - 10° (dBW/m <sup>2</sup> )	* 10° - 15° (dBW/m <sup>2</sup> )	* 15° - 20° (dBW/m <sup>2</sup> )	* 20° - 25° (dBW/m <sup>2</sup> )	* 25° - 90° (dBW/m <sup>2</sup> )
<b>* BW:</b>	<b>/BW):</b>	<b>/BW):</b>	<b>/BW):</b>	<b>/BW):</b>	<b>/BW):</b>	<b>/BW):</b>
<b>1.0 MHz</b>	-123.3	-123.3	-120.8	-118.3	-115.8	-113.3

### Transmitting Beams 11:

Question	Response
Beam ID	BV2R
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	13.9 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	-15.7 dBW/Hz
Max. Transmit EIRP	44.3 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 <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
<b>1.0</b> <b>MHz</b>	-115.0	-115.0	-112.5	-110.0	-107.5	-105.0

## Transmitting Beams 12:

Question	Response
Beam ID	BV2L
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	13.9 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	-15.7 dBW/Hz
Max. Transmit EIRP	44.3 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 <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
<b>1.0</b> <b>MHz</b>	-115.0	-115.0	-112.5	-110.0	-107.5	-105.0

## Transmitting Beams 13:

Question	Response
Beam ID	BK2R
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	13.9 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	-15.7 dBW/Hz
Max. Transmit EIRP	44.3 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 <sup>2</sup>	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>	(dBW/m <sup>2</sup>
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
<b>1.0 MHz</b>	-115.0	-115.0	-112.5	-110.0	-107.5	-105.0

## Transmitting Beams 14:

Question	Response
Beam ID	BK2L
Transmit Beam Frequency	18800.0 MHz -19300.0 MHz

Beam Type	Fixed
Polarization	LHCP
Peak Gain	13.9 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	-15.7 dBW/Hz
Max. Transmit EIRP	44.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

### Max. Power Flux Density

	* 0° - 5° (dBW/m <sup>2</sup> ) /BW:	* 5° - 10° (dBW/m <sup>2</sup> ) /BW:	* 10° - 15° (dBW/m <sup>2</sup> ) /BW:	* 15° - 20° (dBW/m <sup>2</sup> ) /BW:	* 20° - 25° (dBW/m <sup>2</sup> ) /BW:	* 25° - 90° (dBW/m <sup>2</sup> ) /BW:
<b>1.0 MHz</b>	-115.0	-115.0	-112.5	-110.0	-107.5	-105.0

### Transmitting Beams 15:

Question	Response
Beam ID	TK3L
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	46.5 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	-39.0 dBW/Hz
Max. Transmit EIRP	48.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

### Max. Power Flux Density

	* 0° - 5° (dBW/m <sup>2</sup> ) /BW:	* 5° - 10° (dBW/m <sup>2</sup> ) /BW:	* 10° - 15° (dBW/m <sup>2</sup> ) /BW:	* 15° - 20° (dBW/m <sup>2</sup> ) /BW:	* 20° - 25° (dBW/m <sup>2</sup> ) /BW:	* 25° - 90° (dBW/m <sup>2</sup> ) /BW:
<b>1.0 MHz</b>	-138.3	-138.3	-135.8	-133.3	-130.8	-128.3

### Transmitting Beams 16:

Question	Response
Beam ID	BK3R
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	13.9 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	-39.0 dBW/Hz

Max. Transmit EIRP	21.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

### Max. Power Flux Density

	* 0° - 5° (dBW/m <sup>2</sup> ) /BW:	* 5° - 10° (dBW/m <sup>2</sup> ) /BW:	* 10° - 15° (dBW/m <sup>2</sup> ) /BW:	* 15° - 20° (dBW/m <sup>2</sup> ) /BW:	* 20° - 25° (dBW/m <sup>2</sup> ) /BW:	* 25° - 90° (dBW/m <sup>2</sup> ) /BW:
<b>1.0 MHz</b>	-138.3	-138.3	-135.8	-133.3	-130.8	-128.3

### Transmitting Beams 17:

Question	Response
Beam ID	BK3L
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	13.9 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	-39.0 dBW/Hz
Max. Transmit EIRP	21.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

### Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
<b>1.0 MHz</b>	-138.3	-138.3	-135.8	-133.3	-130.8	-128.3

## Transmitting Beams 18:

Question	Response
Beam ID	TK3R
Transmit Beam Frequency	19700.0 MHz -20200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	46.5 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	-39.0 dBW/Hz
Max. Transmit EIRP	48.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth

## Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
*	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )	(dBW/m <sup>2</sup> )
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
<b>1.0 MHz</b>	-138.3	-138.3	-135.8	-133.3	-130.8	-128.3



## Transmitting Channels (9)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
B003	50.0	19725.0	Service Link
T04V	2500.0	38750.0	Service Link
T01K	800.0	18200.0	Service Link
T05V	2000.0	41000.0	Service Link
B002	50.0	18825.0	Service Link
B001	50.0	17825.0	Service Link
B005	50.0	40025.0	Service Link
T03K	500.0	19950.0	Service Link
T02K	500.0	19050.0	Service Link

## Certification Questions

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

## Attachments

File Name	Beam	Field	Attachment Type	Description
<a href="#"><u>TV1 E Nadir.gxt</u></a>	TV1L	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>TV1 E EOC.gxt</u></a>	TV1L	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>TK2 E EOC.gxt</u></a>	TK2R	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>TK2 E Nadir.gxt</u></a>	TK2L	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>TK2 E EOC.gxt</u></a>	TK2L	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>TK1 E Nadir.gxt</u></a>	TK1R	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>RK1 R EOC.gxt</u></a>	RK1R	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>CR ER Nadir.gxt</u></a>	CK2L	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>CR ER Nadir.gxt</u></a>	CK2R	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>CR ER Nadir.gxt</u></a>	CK3L	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>TK1 E EOC.gxt</u></a>	TK1R	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>TK1 E Nadir.gxt</u></a>	TK1L	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>RV2 R EOC.gxt</u></a>	RV2R	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>RV2 R Nadir.gxt</u></a>	RV2L	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>RV2 R EOC.gxt</u></a>	RV2L	NGSO Antenna Gain Data	GXT file (*.gxt)	
<a href="#"><u>RV1 R Nadir.gxt</u></a>	RV1R	NGSO Antenna Gain Data	GXT file (*.gxt)	

<u>RV1 R EOC.</u> <u>gxt</u>	RV1R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>RV1 R Nadir.</u> <u>gxt</u>	RV1L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>RV1 R EOC.</u> <u>gxt</u>	RV1L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>RK3 R Nadir.</u> <u>gxt</u>	RK3L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>RK3 R EOC.</u> <u>gxt</u>	RK3R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>RK3 R Nadir.</u> <u>gxt</u>	RK3R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>RK3 R EOC.</u> <u>gxt</u>	RK3L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>RK2 R Nadir.</u> <u>gxt</u>	RK2R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>RK2 R EOC.</u> <u>gxt</u>	RK2R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>RK2 R Nadir.</u> <u>gxt</u>	RK2L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>RK2 R EOC.</u> <u>gxt</u>	RK2L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>RK1 R Nadir.</u> <u>gxt</u>	RK1R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>CR ER Nadir.</u> <u>gxt</u>	CV1L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>CR ER Nadir.</u> <u>gxt</u>	CV2R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>CR ER Nadir.</u> <u>gxt</u>	CV2L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>CR ER Nadir.</u> <u>gxt</u>	CV1R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>CR ER Nadir.</u> <u>gxt</u>	CK3R	NGSO Antenna Gain Data	GXT file (*.gxt)



<u>RK1 R Nadir.</u> <u>gxt</u>	RK1L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>RK1 R EOC.</u> <u>gxt</u>	RK1L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>TV2 E Nadir.</u> <u>gxt</u>	TV2L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>TK3 E Nadir.</u> <u>gxt</u>	TK3R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>TK3 E EOC.</u> <u>gxt</u>	TK3R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>TK3 E Nadir.</u> <u>gxt</u>	TK3L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>TK3 E EOC.</u> <u>gxt</u>	TK3L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>TK2 E Nadir.</u> <u>gxt</u>	TK2R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>CR ER Nadir.</u> <u>gxt</u>	BV2R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>CR ER Nadir.</u> <u>gxt</u>	BV2L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>CR ER Nadir.</u> <u>gxt</u>	BK3R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>CR ER Nadir.</u> <u>gxt</u>	BK3L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>CR ER Nadir.</u> <u>gxt</u>	BK2R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>RV2 R Nadir.</u> <u>gxt</u>	RV2R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>TK1 E EOC.</u> <u>gxt</u>	TK1L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>TV2 E Nadir.</u> <u>gxt</u>	TV2R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>TV2 E EOC.</u> <u>gxt</u>	TV2R	NGSO Antenna Gain Data	GXT file (*.gxt)

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<u>TV1 E Nadir.</u> <u>gxt</u>	TV1R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>TV1 E EOC.</u> <u>gxt</u>	TV1R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>TV2 E EOC.</u> <u>gxt</u>	TV2L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>CR ER Nadir.</u> <u>gxt</u>	BK2L	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>CR ER Nadir.</u> <u>gxt</u>	BK1R	NGSO Antenna Gain Data	GXT file (*.gxt)
<u>CR ER Nadir.</u> <u>gxt</u>	BK1L	NGSO Antenna Gain Data	GXT file (*.gxt)

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