



312 File Number: **SATAMD2023020700022**

Filing Description

Question	Response
Description	SpaceX Gen2 MSS System

Satellite
Information

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	SpaceX Gen2 MSS
Estimated Lifetime of Satellite(s) From Date of Launch	5 Years
Will the space station(s) operate on a Common Carrier basis?	No

Operating
Frequency
Bands (5)

Nature of service	Description	Frequency Band(s)	Mode Type
Mobile-Satellite Service		2180.0 MHz -2200.0 MHz	Transmit
Mobile-Satellite Service		2000.0 MHz -2020.0 MHz	Receive
Mobile-Satellite Service		1610.0 MHz -1617.775 MHz	Receive
Mobile-Satellite Service		2483.5 MHz -2500.0 MHz	Transmit
Mobile-Satellite Service		2020.0 MHz -2025.0 MHz	Receive

**Orbital
Information For
Non-
Geostationary
Satellites**

Question	Response
Total Number of Satellites in the active constellation	3
Orbit Epoch Date	01/01/2023
Celestial Reference Body	Earth

Orbital Plane 1:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	53.0 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5760.0 seconds
Apogee	550.0 km
Perigee	550.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	0.0 degrees

Mean Anomaly For Each Satellite

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

Orbital Plane 2:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	43.0 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5714.0 seconds
Apogee	530.0 km
Perigee	530.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-43.0 degrees
Active Service Arc End Angle with respect to Ascending Node	43.0 degrees

Mean Anomaly For Each Satellite

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

Orbital Plane 3:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	33.0 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5720.0 seconds
Apogee	535.0 km
Perigee	535.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-33.0 degrees
Active Service Arc End Angle with respect to Ascending Node	33.0 degrees

Mean Anomaly For Each Satellite

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

Receiving Beams 1:

Question	Response
Beam ID	RX24
Receive Beam Frequency	2020.0 MHz -2025.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	38.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	12.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 2:

Question	Response
Beam ID	RX23
Receive Beam Frequency	2020.0 MHz -2025.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	35.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving
Beams 3:

Question	Response
Beam ID	RX22
Receive Beam Frequency	2020.0 MHz -2025.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	32.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	6.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving

Beams 4:

Question	Response
Beam ID	RX21
Receive Beam Frequency	2020.0 MHz -2025.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	29.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	3.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 5:

Question	Response
Beam ID	RX20
Receive Beam Frequency	2020.0 MHz -2025.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	38.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	12.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 6:

Question	Response
Beam ID	RX19
Receive Beam Frequency	2020.0 MHz -2025.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	35.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 7:

Question	Response
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Beam ID	RX18
Receive Beam Frequency	2020.0 MHz -2025.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	32.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	6.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

**Receiving
Beams 8:**

Question	Response
Beam ID	RX17
Receive Beam Frequency	2020.0 MHz -2025.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	29.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	3.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 9:

Question	Response
Beam ID	RX01
Receive Beam Frequency	1610.0 MHz -1617.775 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	29.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	3.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 10:

Question	Response
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Beam ID	RX02
Receive Beam Frequency	1610.0 MHz -1617.775 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	32.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	6.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 11:

Question	Response
Beam ID	RX03
Receive Beam Frequency	1610.0 MHz -1617.775 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	35.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 12:

Question	Response
Beam ID	RX04
Receive Beam Frequency	1610.0 MHz -1617.775 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	38.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	12.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 13:

Question	Response
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Beam ID	RX05
Receive Beam Frequency	1610.0 MHz -1617.775 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	29.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	3.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

**Receiving
Beams 14:**

Question	Response
Beam ID	RX06
Receive Beam Frequency	1610.0 MHz -1617.775 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	32.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	6.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 15:

Question	Response
Beam ID	RX07
Receive Beam Frequency	1610.0 MHz -1617.775 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	35.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 16:

Question	Response
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Beam ID	RX08
Receive Beam Frequency	1610.0 MHz -1617.775 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	38.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	12.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 17:

Question	Response
Beam ID	RX09
Receive Beam Frequency	2000.0 MHz -2020.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	29.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	3.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 18:

Question	Response
Beam ID	RX10
Receive Beam Frequency	2000.0 MHz -2020.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	32.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	6.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 19:

Question	Response
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Beam ID	RX11
Receive Beam Frequency	2000.0 MHz -2020.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	35.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

**Receiving
Beams 20:**

Question	Response
Beam ID	RX12
Receive Beam Frequency	2000.0 MHz -2020.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	38.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	12.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 21:

Question	Response
Beam ID	RX13
Receive Beam Frequency	2000.0 MHz -2020.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	V
Peak Gain	29.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	3.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 22:

Question	Response
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Beam ID	RX14
Receive Beam Frequency	2000.0 MHz -2020.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	32.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	6.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 23:

Question	Response
Beam ID	RX15
Receive Beam Frequency	2000.0 MHz -2020.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	35.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	9.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 24:

Question	Response
Beam ID	RX16
Receive Beam Frequency	2000.0 MHz -2020.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	H
Peak Gain	38.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	12.5 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving
Channels (3)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
RXB	20.0	2010.0	Service Link
RXC	5.0	2022.5	Service Link
RXA	7.775	1613.8875	Service Link

Transmitting
Beams 1:

Question	Response
Beam ID	TX15
Transmit Beam Frequency	2483.5 MHz -2500.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-5.33 dBW/Hz
Max. Transmit EIRP	66.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-82.4	-81.2	-79.6	-78.2	-77.0	-70.7

Transmitting
Beams 2:

Question	Response
Beam ID	TX13
Transmit Beam Frequency	2483.5 MHz -2500.0 MHz

Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	29.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-11.33 dBW/Hz
Max. Transmit EIRP	60.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-88.4	-87.2	-85.6	-84.2	-83.0	-76.7

Transmitting Beams 3:

Question	Response
Beam ID	TX14
Transmit Beam Frequency	2483.5 MHz -2500.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	32.0 dBi
Antenna Pointing Error	0.1 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-8.26 dBW/Hz
Max. Transmit EIRP	63.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-85.3	-84.1	-82.6	-81.1	-79.9	-73.7

Transmitting Beams 4:

Question	Response
Beam ID	TX10
Transmit Beam Frequency	2483.5 MHz -2500.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	32.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-8.26 dBW/Hz

Max. Transmit EIRP	63.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-85.3	-84.1	-82.6	-81.1	-79.9	-73.7

Transmitting Beams 5:

Question	Response
Beam ID	TX09
Transmit Beam Frequency	2483.5 MHz -2500.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	29.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-11.33 dBW/Hz
Max. Transmit EIRP	60.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

Max. Power Flux Density

Transmitting Beams 6:

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* BW:	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):
1.0 MHz	-88.4	-87.2	-85.6	-84.2	-83.0	-76.7

Question	Response
Beam ID	TX11
Transmit Beam Frequency	2483.5 MHz -2500.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-5.33 dBW/Hz
Max. Transmit EIRP	66.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-82.4	-81.2	-79.6	-78.2	-77.0	-70.7

Transmitting
Beams 7:

Question	Response
Beam ID	TX12
Transmit Beam Frequency	2483.5 MHz -2500.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	38.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-2.33 dBW/Hz
Max. Transmit EIRP	69.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-79.4	-78.2	-76.6	-75.2	-74.0	-67.7

Transmitting
Beams 8:

Question	Response
Beam ID	TX16
Transmit Beam Frequency	2483.5 MHz -2500.0 MHz

Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	38.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-2.33 dBW/Hz
Max. Transmit EIRP	69.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-79.4	-78.2	-76.6	-75.2	-74.0	-67.7

Transmitting Beams 9:

Question	Response
Beam ID	TX01
Transmit Beam Frequency	2180.0 MHz -2200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	29.0 dBi
Antenna Pointing Error	0.1 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-11.33 dBW/Hz
Max. Transmit EIRP	49.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-88.4	-87.2	-85.6	-84.2	-83.0	-76.7

Transmitting Beams 10:

Question	Response
Beam ID	TX02
Transmit Beam Frequency	2180.0 MHz -2200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	32.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-8.26 dBW/Hz

Max. Transmit EIRP	52.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-85.3	-84.1	-82.6	-81.1	-79.9	-73.7

Transmitting Beams 11:

Question	Response
Beam ID	TX03
Transmit Beam Frequency	2180.0 MHz -2200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-5.33 dBW/Hz
Max. Transmit EIRP	55.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

Max. Power Flux Density

Transmitting Beams 12:

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* BW:	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):	(dbW/m ² /BW):
1.0 MHz	-82.4	-81.2	-79.6	-78.2	-77.0	-70.7

Question	Response
Beam ID	TX04
Transmit Beam Frequency	2180.0 MHz -2200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	38.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-2.33 dBW/Hz
Max. Transmit EIRP	58.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-79.4	-78.2	-76.6	-75.2	-74.0	-67.7

Transmitting
Beams 13:

Question	Response
Beam ID	TX05
Transmit Beam Frequency	2180.0 MHz -2200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	29.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-11.33 dBW/Hz
Max. Transmit EIRP	49.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-88.4	-87.2	-85.6	-84.2	-83.0	-76.7

Transmitting
Beams 14:

Question	Response
Beam ID	TX06
Transmit Beam Frequency	2180.0 MHz -2200.0 MHz

Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	32.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-8.26 dBW/Hz
Max. Transmit EIRP	52.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-85.3	-84.1	-82.6	-81.1	-79.9	-73.7

Transmitting Beams 15:

Question	Response
Beam ID	TX07
Transmit Beam Frequency	2180.0 MHz -2200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.1 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-5.33 dBW/Hz
Max. Transmit EIRP	55.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-82.4	-81.2	-79.6	-78.2	-77.0	-70.7

Transmitting Beams 16:

Question	Response
Beam ID	TX08
Transmit Beam Frequency	2180.0 MHz -2200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	38.0 dBi
Antenna Pointing Error	0.1 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-2.33 dBW/Hz

Max. Transmit EIRP	58.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-79.4	-78.2	-76.6	-75.2	-74.0	-67.7

Transmitting
Channels (2)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
TXA	20.0	2190.0	Service Link
TXB	16.5	2491.75	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?	
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?	
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	File
<u>SpaceX_MSS_RX_29dBi_35deg.gxt</u>		NG Ant Gai Dai
<u>SpaceX_MSS_RX_32dBi_0deg.gxt</u>		NG Ant Gai Dai
<u>SpaceX_MSS_RX_32dBi_35deg.gxt</u>		NG Ant Gai Dai
<u>SpaceX_MSS_RX_35dBi_0deg.gxt</u>		NG Ant Gai Dai
<u>SpaceX_MSS_RX_35dBi_35deg.gxt</u>		NG Ant Gai Dai
<u>SpaceX_MSS_RX_38dBi_0deg.gxt</u>		NG Ant Gai Dai
<u>SpaceX_MSS_RX_38dBi_35deg.gxt</u>		NG Ant Gai Dai
<u>SpaceX_MSS_TX_29dBi_0deg.gxt</u>		NG Ant Gai Dai
<u>SpaceX_MSS_TX_32dBi_0deg.gxt</u>		NG Ant Gai Dai

<u>SpaceX_MSS_TX_32dBi_35deg.gxt</u>	NG Ant Gai Dai
<u>SpaceX_MSS_TX_35dBi_35deg.gxt</u>	NG Ant Gai Dai
<u>SpaceX_MSS_TX_38dBi_0deg.gxt</u>	NG Ant Gai Dai
<u>SpaceX_MSS_TX_38dBi_35deg.gxt</u>	NG Ant Gai Dai
<u>SpaceX_1610_2000_2200_2483_MHz_MSS_Technical_DB_20230202.mdb</u>	NG Ant Gai Dai
<u>SpaceX_MSS_TX_35dBi_0deg.gxt</u>	NG Ant Gai Dai
<u>SpaceX_MSS_TX_29dBi_35deg.gxt</u>	NG Ant Gai Dai
<u>SpaceX_MSS_RX_29dBi_0deg.gxt</u>	NG Ant Gai Dai