



312 File Number: **SATSTA2020060900068**

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## Filing Description

Question	Response
Description	Vigoride-1 (VR-1) is a non-geostationary orbit spacecraft that plans to operate in S-band (2025-2110 MHz) Earth-to-space and UHF (400.15-401 MHz) space-to-Earth for Space Operations.

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**Satellite  
Information**

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	VIGORIDE-1
Estimated Lifetime of Satellite(s) From Date of Launch	1 Years
Will the space station(s) operate on a Common Carrier basis?	No

## Operating Frequency Bands (2)

Nature of service	Description	Frequency Band(s)	Mode Type
Space Operation Service		2025.0 MHz -2110.0 MHz	Receive
Space Operation Service		400.0 MHz -401.0 MHz	Transmit

**Orbital  
Information For  
Non-  
Geostationary  
Satellites**

Question	Response
Total Number of Satellites in the active constellation	1
Orbit Epoch Date	01/01/1970
Celestial Reference Body	Earth

## Orbital Plane 1:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	97.59 degrees
Right Ascension of Ascending Node	63.5 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5700.0 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	90.0 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	UP
Receive Beam Frequency	2074.95 MHz -2075.05 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.0 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	-19.6 dB/K
Min. Saturation Flux Density	-105.0 dBW/m <sup>2</sup>
Max. Saturation Flux Density	-100.0 dBW/m <sup>2</sup>
Co- or Cross Polar Mode	C
Service Area Description	Global

**Receiving  
Channels (1)**

<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>
UP	0.1	2075.0	TT&C

## Transmitting Beams 1:

Question	Response
Beam ID	DWN
Transmit Beam Frequency	400.48 MHz -400.52 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.0 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-39.5 dBW/Hz
Max. Transmit EIRP	6.56 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 <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>4.0 kHz</b>	-151.0	-148.6	-146.6	-145.0	-143.6	-137.0



**Transmitting Channels (1)**

<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>
DWN	0.04	400.5	TT&C

## Certification Questions

Question	Response
<p>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?</p>	<p>N/A</p>
<p>Are the applicable frequency tolerances of 25.202(e) and out-of-band emission limits of 25.202(f)(1),(2), and (3) met?</p>	<p>N/A</p>
<p>Are the cessation of emissions requirements of 25.207 met?</p>	<p>Yes</p>
<p>Are the applicable power-flux-density limits of 25.208 met, and is the appropriate technical showing provided within the application?</p>	
<p>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?</p>	<p>N/A</p>
<p>Are the applicable full-frequency-reuse requirements of 25.210 met?</p>	
<p>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)?</p>	

# Attachments

File Name	Beam	Field	Attachment Type	Description
<a href="#"><u>Momentum - VR-1 NGSO Antenna Gain.pdf</u></a>		NGSO Antenna Gain Data	PDF file (*.pdf)	NGSO antenna gain contour plots.