



312 File Number: **SATMOD2019061700047**

---

## Filing Description

Question	Response
Description	VIASAT-3 (89W) Payload at 88.9 degrees W.L.

---

**Satellite  
Information**

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	VIASAT-3 (89W)
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 (4)

Nature of service	Description	Frequency Band(s)	Mode Type
<b>Fixed-Satellite Service</b>		29100.0 MHz -29500.0 MHz	Receive
<b>Fixed-Satellite Service</b>		19300.0 MHz -19700.0 MHz	Transmit
<b>Fixed-Satellite Service</b>		17700.0 MHz -18300.0 MHz	Transmit
<b>Fixed-Satellite Service</b>		27500.0 MHz -28100.0 MHz	Receive

## Orbital Information For Geostationary Satellites

Section	Question	Response
<b>Orbital Longitude Information</b>	Orbital Longitude	89.0 degrees
	Hemisphere of Orbital Longitude	W
<b>Longitudinal Tolerance or East /West Station-Keeping</b>	Toward West	0.05 degrees
	Toward East	0.05 degrees
<b>Inclination Excursion or North /South Station-Keeping Tolerance</b>	Inclination Excursion or North /South Station-Keeping Tolerance	0.1 degrees
<b>Antenna Axis Attitude Accuracy</b>	Roll	0.1 degrees
	Pitch	0.1 degrees
	Yaw	0.1 degrees

## Receiving Beams 1:

Question	Response
Beam ID	RAR1
Receive Beam Frequency	27500.0 MHz -28100.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	30.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth.

## Receiving Beams 2:

Question	Response
Beam ID	RAL1
Receive Beam Frequency	27500.0 MHz -28100.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	30.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth.

### Receiving Beams 3:

Question	Response
Beam ID	RBL2
Receive Beam Frequency	29100.0 MHz -29500.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	22.4 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth.

### Receiving

## Beams 4:

Question	Response
Beam ID	RBR1
Receive Beam Frequency	27500.0 MHz -28100.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	22.4 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth.

## Receiving Beams 5:

Question	Response
Beam ID	RBR2
Receive Beam Frequency	29100.0 MHz -29500.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	22.4 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth.

### Receiving Beams 6:

Question	Response
Beam ID	RAR2
Receive Beam Frequency	29100.0 MHz -29500.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	30.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth.

### Receiving Beams 7:

Question	Response
----------	----------



Beam ID	RAL2
Receive Beam Frequency	29100.0 MHz -29500.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	30.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth.

**Receiving Beams 8:**

Question	Response
Beam ID	RBL1
Receive Beam Frequency	27500.0 MHz -28100.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees
Polarization Switchable	

---

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	22.4 dB/K
Min. Saturation Flux Density	-115.0 dBW/m <sup>2</sup>
Max. Saturation Flux Density	-85.0 dBW/m <sup>2</sup>
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth.

---

**Receiving Channels (2)**

<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>
CH1	600.0	27800.0	Service Link
CH2	400.0	29300.0	Service Link

## Transmitting Beams 1:

Question	Response
Beam ID	TBL1
Transmit Beam Frequency	17700.0 MHz -18300.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-14.9 dBW/Hz
Max. Transmit EIRP	65.1 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>	-118.0	-118.0	-118.0	-118.0	-118.0	-118.0

## Transmitting Beams 2:

Question	Response
Beam ID	TBL2
Transmit Beam Frequency	19300.0 MHz -19700.0 MHz

Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-14.9 dBW/Hz
Max. Transmit EIRP	65.1 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>	-118.0	-118.0	-118.0	-118.0	-118.0	-118.0

### Transmitting Beams 3:

Question	Response
Beam ID	TBR1
Transmit Beam Frequency	17700.0 MHz -18300.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees

Antenna Rotational Error	0.05 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-14.9 dBW/Hz
Max. Transmit EIRP	65.1 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:
<b>1.0 MHz</b>	-118.0	-118.0	-118.0	-118.0	-118.0	-118.0

### Transmitting Beams 4:

Question	Response
Beam ID	TBR2
Transmit Beam Frequency	19300.0 MHz -19700.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-14.9 dBW/Hz

Max. Transmit EIRP	65.1 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>	-118.0	-118.0	-118.0	-118.0	-118.0	-118.0

### Transmitting Beams 5:

Question	Response
Beam ID	TAR2
Transmit Beam Frequency	19300.0 MHz -19700.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-14.9 dBW/Hz
Max. Transmit EIRP	72.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth.

### Max. Power Flux Density





## Transmitting Beams 7:

Question	Response
Beam ID	TAR1
Transmit Beam Frequency	17700.0 MHz -18300.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-14.9 dBW/Hz
Max. Transmit EIRP	72.9 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>	-118.0	-118.0	-118.0	-118.0	-118.0	-118.0

## Transmitting Beams 8:

Question	Response
Beam ID	TAL2
Transmit Beam Frequency	19300.0 MHz -19700.0 MHz

Beam Type	Spot
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.05 degrees
Antenna Rotational Error	0.05 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-14.9 dBW/Hz
Max. Transmit EIRP	72.9 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>	-118.0	-118.0	-118.0	-118.0	-118.0	-118.0
<b>MHz</b>						

## Transmitting Channels (2)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
CH1	600.0	18000.0	Service Link
CH2	400.0	19500.0	Service Link

## 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>Yes</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>Yes</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>Yes</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>VIASAT-3 (89W) GIMS Database.mdb</u></a>		GSO Antenna Gain Contour Data	GIMS file (*.mdb)	VIASAT-3 (89W) GIMS database

---