Approved by OMB 3060-0678
Estimated Burden: up to 80 hours
April 2016

Federal Communications Commission

312 File Number: **SATPPL2021120700172**

Filing Description

Question	Response
Description	VIASAT-79W

Satellite Information

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	VIASAT-79W
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
Fixed-Satellite Service		29500.0 MHz -30000.0 MHz	Receive
Fixed-Satellite Service		27500.0 MHz -29100.0 MHz	Receive
Fixed-Satellite Service		19700.0 MHz -20200.0 MHz	Transmit
Fixed-Satellite Service		17700.0 MHz -19300.0 MHz	Transmit

Orbital Information For Geostationary Satellites

Section	Question	Response
Orbital Longitude Information	Orbital Longitude	79.0 degrees
	Hemisphere of Orbital Longitude	W
Longitudinal Tolerance or East /West Station-Keeping	Toward West	0.05 degrees
	Toward East	0.05 degrees
Inclination Excursion or North /South Station-Keeping Tolerance	Inclination Excursion or North /South Station-Keeping Tolerance	0.1 degrees
Antenna Axis Attitude Accuracy	Roll	0.1 degrees
	Pitch	0.1 degrees
	Yaw	0.1 degrees

Receiving Beams 1:

Question	Response
Beam ID	RXAR
Receive Beam Frequency	27500.0 MHz -29100.0 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	30.9 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XVE

Receiving Beams 2:

Question	Response
Beam ID	RXBR
Receive Beam Frequency	27500.0 MHz -29100.0 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	22.2 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XVE

Receiving Beams 3:

Question	Response
Beam ID	RXaR
Receive Beam Frequency	29500.0 MHz -30000.0 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	30.9 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XVE

Receiving

Beams 4:

Question	Response
Beam ID	RXAL
Receive Beam Frequency	27500.0 MHz -29100.0 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	30.9 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XVE

Receiving Beams 5:

Question	Response
Beam ID	RXBL
Receive Beam Frequency	27500.0 MHz -29100.0 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	22.2 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XVE

Receiving Beams 6:

Question	Response
Beam ID	RXaL
Receive Beam Frequency	29500.0 MHz -30000.0 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	30.9 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XVE

Receiving Beams 7:

Question	Response

Beam ID	RXbR
Receive Beam Frequency	29500.0 MHz -30000.0 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	22.2 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XVE

Receiving Beams 8:

Question	Response
Beam ID	RXbL
Receive Beam Frequency	29500.0 MHz -30000.0 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	22.2 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-85.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	XVE

Receiving Channels (2)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
UL02	500.0	29750.0	Service Link
UL01	1600.0	28300.0	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	TXAR
Transmit Beam Frequency	17700.0 MHz -19300.0 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	-14.3 dBW/Hz
Max. Transmit EIRP	77.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	XVE

Max. Power Flux Density

* BW:	* 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	-118.0	-118.0	-118.0	-118.0	-118.0

Transmitting Beams 2:

Question	Response
Beam ID	TXBR
Transmit Beam Frequency	17700.0 MHz -19300.0 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	-22.7 dBW/Hz
Max. Transmit EIRP	69.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	XVE

Max. Power Flux Density

* BW:	* 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	-118.0	-118.0	-118.0	-118.0	-118.0

Transmitting Beams 3:

Question	Response
Beam ID	TXaR
Transmit Beam Frequency	19700.0 MHz -20200.0 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	-14.3 dBW/Hz
Max. Transmit EIRP	72.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	XVE

Max. Power Flux Density

* BW:	* 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	-118.0	-118.0	-118.0	-118.0	-118.0

Transmitting Beams 4:

Question	Response
Beam ID	TXAL
Transmit Beam Frequency	17700.0 MHz -19300.0 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	-14.3 dBW/Hz

Max. Transmit EIRP	77.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	XVE

Max. Power Flux Density

* BW:	* 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	-118.0	-118.0	-118.0	-118.0	-118.0

Transmitting Beams 5:

Question	Response
Beam ID	TXBL
Transmit Beam Frequency	17700.0 MHz -19300.0 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	-22.7 dBW/Hz
Max. Transmit EIRP	69.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	XVE

Max. Power Flux Density

* BW:	* 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	-118.0	-118.0	-118.0	-118.0	-118.0

Transmitting Beams 6:

Question	Response
Beam ID	TXaL
Transmit Beam Frequency	19700.0 MHz -20200.0 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	-14.3 dBW/Hz
Max. Transmit EIRP	72.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	XVE

Max. Power Flux Density

* BW:	* 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	-118.0	-118.0	-118.0	-118.0	-118.0

Transmitting Beams 7:

Question	Response
Beam ID	TXbR
Transmit Beam Frequency	19700.0 MHz -20200.0 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	-22.7 dBW/Hz
Max. Transmit EIRP	64.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	XVE

Max. Power Flux Density

* BW:	* 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	-118.0	-118.0	-118.0	-118.0	-118.0

Transmitting Beams 8:

Question	Response
Beam ID	TXbL
Transmit Beam Frequency	19700.0 MHz -20200.0 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	-22.7 dBW/Hz
Max. Transmit EIRP	64.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	XVE

Max. Power Flux Density

* BW:	* 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	-118.0	-118.0	-118.0	-118.0	-118.0

Transmitting Channels (2)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
DL02	500.0	19950.0	Service Link
DL01	1600.0	18500.0	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?	N/A
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
VIASAT-79W_Beams.mdb	RXAL	GSO Antenna Gain Contour Data	GIMS file (*.mdb)	VIASAT-79W antenna beam representative and composite contours.