



312 File Number: **SATPPL2021051000062**

Filing Description

Question	Response
Description	Amazonas Nexus Ka and Ku band Satellite at 61 W.L.

Satellite Information

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	AMAZONAS NEXUS
Estimated Lifetime of Satellite(s) From Date of Launch	18 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		27500.0 MHz -28600.0 MHz	Receive
Fixed-Satellite Service		17850.0 MHz -18800.0 MHz	Transmit
Fixed-Satellite Service		13750.0 MHz -14500.0 MHz	Receive
Fixed-Satellite Service		10700.0 MHz -12200.0 MHz	Transmit

Orbital Information For Geostationary Satellites

Section	Question	Response
Orbital Longitude Information	Orbital Longitude	61.0 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	0.07 degrees
Antenna Axis Attitude Accuracy	Roll	0.02 degrees
	Pitch	0.02 degrees
	Yaw	0.05 degrees

Receiving Beams 1:

Question	Response
Beam ID	US3V
Receive Beam Frequency	13750.0 MHz -14500.0 MHz
Beam Type	Spot
Polarization	V
Peak Gain	40.0 dBi
Antenna Pointing Error	0.07 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	11.1 dB/K
Min. Saturation Flux Density	-91.0 dBW/m2
Max. Saturation Flux Density	-71.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Conus and Atlantic Ocean

Receiving Beams 2:

Question	Response
Beam ID	WB1V
Receive Beam Frequency	14000.0 MHz -14250.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	33.0 dBi
Antenna Pointing Error	0.07 degrees
Antenna Rotational Error	0.1 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	5.1 dB/K
Min. Saturation Flux Density	-100.0 dBW/m2
Max. Saturation Flux Density	-80.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Conus

Receiving Beams 3:

Question	Response
Beam ID	US1V
Receive Beam Frequency	13750.0 MHz -14500.0 MHz
Beam Type	Spot
Polarization	V
Peak Gain	45.0 dBi
Antenna Pointing Error	0.07 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	17.4 dB/K
Min. Saturation Flux Density	-91.0 dBW/m2
Max. Saturation Flux Density	-71.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Conus and Caribbean

Receiving

Beams 4:

Question	Response
Beam ID	GW1L
Receive Beam Frequency	27500.0 MHz -28600.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	50.0 dBi
Antenna Pointing Error	0.07 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	18.2 dB/K
Min. Saturation Flux Density	-94.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Conus

Receiving Beams 5:

Question	Response
Beam ID	WB1H
Receive Beam Frequency	14000.0 MHz -14250.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	33.0 dBi
Antenna Pointing Error	0.07 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	5.1 dB/K
Min. Saturation Flux Density	-100.0 dBW/m2
Max. Saturation Flux Density	-80.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Conus

Receiving Beams 6:

Question	Response
Beam ID	US1H
Receive Beam Frequency	13750.0 MHz -14500.0 MHz
Beam Type	Spot
Polarization	H
Peak Gain	45.0 dBi
Antenna Pointing Error	0.07 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	17.4 dB/K
Min. Saturation Flux Density	-91.0 dBW/m2
Max. Saturation Flux Density	-71.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Conus and Caribbean

Receiving Beams 7:

Question	Response
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Beam ID	GW1R
Receive Beam Frequency	27500.0 MHz -28600.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	50.0 dBi
Antenna Pointing Error	0.07 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	18.2 dB/K
Min. Saturation Flux Density	-94.0 dBW/m2
Max. Saturation Flux Density	-74.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Conus

Receiving Beams 8:

Question	Response
Beam ID	US3H
Receive Beam Frequency	13750.0 MHz -14500.0 MHz
Beam Type	Spot
Polarization	H
Peak Gain	40.0 dBi
Antenna Pointing Error	0.07 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	11.1 dB/K
Min. Saturation Flux Density	-91.0 dBW/m ²
Max. Saturation Flux Density	-71.0 dBW/m ²
Co- or Cross Polar Mode	C
Service Area Description	Puerto Rico and Caribbean

Receiving Channels (27)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
205	36.0	14230.0	Service Link
204	36.0	14190.0	Service Link
203	36.0	14150.0	Service Link
202	36.0	14110.0	Service Link
53	166.0	14416.67	Service Link
43	125.0	13813.0	Service Link
211	54.0	14099.0	Service Link
210	54.0	14039.0	Service Link
209	108.0	14190.0	Service Link
61	62.5	14468.75	Service Link
44	125.0	13938.0	Service Link
45	201.81	14314.9	Service Link
46	84.19	14457.9	Service Link
48	125.0	14437.5	Service Link
49	96.0	14262.0	Service Link
50	18.0	14027.0	Service Link
52	83.33	14291.67	Service Link
47	125.0	14312.5	Service Link
60	62.5	14343.75	Service Link
59	62.5	14406.25	Service Link
58	62.5	14281.25	Service Link
57	190.0	14405.0	Service Link
56	76.0	14252.0	Service Link
51	143.0	13947.0	Service Link

1	1100.0	28050.0	Service Link
200	36.0	14030.0	Service Link
201	36.0	14070.0	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	WB2V
Transmit Beam Frequency	11700.0 MHz -11950.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	33.0 dBi
Antenna Pointing Error	0.07 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-22.1 dBW/Hz
Max. Transmit EIRP	53.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Conus

Max. Power Flux Density

Information not provided.

Transmitting Beams 2:

Question	Response
Beam ID	US2V
Transmit Beam Frequency	10700.0 MHz -12200.0 MHz
Beam Type	Spot
Polarization	V
Peak Gain	44.0 dBi
Antenna Pointing Error	0.07 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-22.1 dBW/Hz
Max. Transmit EIRP	64.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	Conus and Caribbean

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	-126.5	-126.5	-124.1	-124.1	-124.1	-124.1

Transmitting Beams 3:

Question	Response
Beam ID	GW2L
Transmit Beam Frequency	17850.0 MHz -18800.0 MHz
Beam Type	Spot
Polarization	LHCP
Peak Gain	47.0 dBi
Antenna Pointing Error	0.07 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-16.0 dBW/Hz

Max. Transmit EIRP	64.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	Conus

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	-118.1	-118.1	-118.1	-118.1	-118.1	-118.1

Transmitting Beams 4:

Question	Response
Beam ID	WB2H
Transmit Beam Frequency	11700.0 MHz -11950.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	33.0 dBi
Antenna Pointing Error	0.07 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-22.1 dBW/Hz
Max. Transmit EIRP	53.3 dBW
Co- or Cross Polar Mode	C
Service Area Description	Conus

Max. Power Flux Density

Information not provided.

Transmitting Beams 5:

Question	Response
Beam ID	US2H
Transmit Beam Frequency	10700.0 MHz -12200.0 MHz
Beam Type	Spot
Polarization	H
Peak Gain	44.0 dBi
Antenna Pointing Error	0.07 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-22.1 dBW/Hz
Max. Transmit EIRP	64.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	Conus and Caribbean

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	-126.5	-126.5	-124.1	-124.1	-124.1	-124.1

Transmitting Beams 6:

Question	Response
Beam ID	GW2R

Transmit Beam Frequency	17850.0 MHz -18800.0 MHz
Beam Type	Spot
Polarization	RHCP
Peak Gain	47.0 dBi
Antenna Pointing Error	0.07 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-16.0 dBW/Hz
Max. Transmit EIRP	64.4 dBW
Co- or Cross Polar Mode	C
Service Area Description	Conus

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	-118.1	-118.1	-118.1	-118.1	-118.1	-118.1

Transmitting Beams 7:

Question	Response
Beam ID	US4V
Transmit Beam Frequency	10700.0 MHz -12200.0 MHz
Beam Type	Spot
Polarization	V
Peak Gain	44.0 dBi

Antenna Pointing Error	0.07 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-22.1 dBW/Hz
Max. Transmit EIRP	62.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	Puerto Rico and Caribbean

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):
1.0 MHz	-126.5	-126.5	-124.1	-124.1	-124.1	-124.1

Transmitting Beams 8:

Question	Response
Beam ID	US4H
Transmit Beam Frequency	10700.0 MHz -12200.0 MHz
Beam Type	Spot
Polarization	H
Peak Gain	44.0 dBi
Antenna Pointing Error	0.07 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees

Max. Transmit EIRP Density	-22.1 dBW/Hz
Max. Transmit EIRP	62.8 dBW
Co- or Cross Polar Mode	C
Service Area Description	Conus and Atlantic Ocean

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):
1.0 MHz	-126.5	-126.5	-124.1	-124.1	-124.1	-124.1

Transmitting Channels (26)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
66	156.25	11340.625	Service Link
67	250.0	12075.0	Service Link
69	187.5	12075.0	Service Link
100	156.3	10809.375	Service Link
200	36.0	11730.0	Service Link
1	950.0	18325.0	Service Link
201	36.0	11770.0	Service Link
211	54.0	11799.0	Service Link
202	36.0	11810.0	Service Link
203	36.0	11850.0	Service Link
204	36.0	11890.0	Service Link
46	250.0	11325.0	Service Link
210	54.0	11739.0	Service Link
62	156.25	11371.875	Service Link
61	187.5	11075.0	Service Link
59	156.25	11059.375	Service Link
58	156.25	10840.625	Service Link
56	187.5	10856.25	Service Link
53	500.0	11200.0	Service Link
52	250.0	10825.0	Service Link
49	218.75	10809.375	Service Link
48	281.25	11278.125	Service Link
47	250.0	10918.75	Service Link
45	500.0	10950.0	Service Link

209	108.0	11890.0	Service Link
205	36.0	11930.0	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>No</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
<u>beams.mdb</u>		GSO Antenna Gain Contour Data	GIMS file (*.mdb)	