



312 File Number: **SATPPL2018081500062**

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## Filing Description

Question	Response
Description	This Schedule S is submitted in support of the request for U.S. market access for the Ku-band NSS-11 satellite at 176 E.

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**Satellite  
Information**

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	NSS-11
Estimated Lifetime of Satellite(s) From Date of Launch	25 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
<b>Fixed-Satellite Service</b>		14000.0 MHz -14500.0 MHz	Receive
<b>Fixed-Satellite Service</b>		12250.0 MHz -12750.0 MHz	Transmit

## Orbital Information For Geostationary Satellites

Section	Question	Response
<b>Orbital Longitude Information</b>	Orbital Longitude	176.0 degrees
	Hemisphere of Orbital Longitude	E
<b>Longitudinal Tolerance or East /West Station-Keeping</b>	Toward West	0.05 degrees
	Toward East	0.5 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	0.05 degrees
	Pitch	0.05 degrees
	Yaw	0.35 degrees

## Receiving Beams 1:

Question	Response
Beam ID	CHRH
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	6.42 dB/K
Min. Saturation Flux Density	-95.42 dBW/m2
Max. Saturation Flux Density	-73.42 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Alaska, Canada, Japan, China

## Receiving Beams 2:

Question	Response
Beam ID	NERV
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	5.59 dB/K
Min. Saturation Flux Density	-94.59 dBW/m2
Max. Saturation Flux Density	-72.59 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Hawaii, Alaska, Canada, Northwestern USA

**Receiving Beams 3:**

Question	Response
Beam ID	SARV
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	5.93 dB/K
Min. Saturation Flux Density	-94.93 dBW/m2
Max. Saturation Flux Density	-72.93 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Guam, Eastern Asia

## Receiving Beams 4:

Question	Response
Beam ID	NERH
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	5.59 dB/K
Min. Saturation Flux Density	-94.59 dBW/m2
Max. Saturation Flux Density	-72.59 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Hawaii, Alaska, Canada, Northwestern USA

## Receiving Beams 5:

Question	Response
Beam ID	GBLR
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	14.61 dB/K
Min. Saturation Flux Density	-103.6 dBW/m2
Max. Saturation Flux Density	-81.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global horn command

**Receiving Beams 6:**

Question	Response
Beam ID	BCAR
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	14.61 dB/K
Min. Saturation Flux Density	-103.6 dBW/m2
Max. Saturation Flux Density	-81.6 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global



## Receiving Channels (29)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
KU19	36.0	14119.0	Service Link
KU10	36.0	14219.0	Service Link
KU11	36.0	14259.0	Service Link
KU12	36.0	14299.0	Service Link
KU13	36.0	14339.0	Service Link
KU14	36.0	14379.0	Service Link
KU15	36.0	14419.0	Service Link
KU16	36.0	14459.0	Service Link
KU17	36.0	14039.0	Service Link
TC1	0.8	14498.0	TT&C
KU18	36.0	14079.0	Service Link
KU9	36.0	14179.0	Service Link
KU4	36.0	14139.0	Service Link
KU8	36.0	14299.0	Service Link
KU5	36.0	14179.0	Service Link
KU6	36.0	14219.0	Service Link
KU7	36.0	14259.0	Service Link
KU3	36.0	14099.0	Service Link
KU2	36.0	14059.0	Service Link
KU1	36.0	14019.0	Service Link
KU28	36.0	14479.0	Service Link
KU20	36.0	14159.0	Service Link
KU21	36.0	14199.0	Service Link
KU22	36.0	14239.0	Service Link

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<b>KU23</b>	36.0	14279.0	Service Link
<b>KU24</b>	36.0	14319.0	Service Link
<b>KU25</b>	36.0	14359.0	Service Link
<b>KU26</b>	36.0	14399.0	Service Link
<b>KU27</b>	36.0	14439.0	Service Link

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## Transmitting Beams 1:

Question	Response
Beam ID	SATH
Transmit Beam Frequency	12250.0 MHz -12750.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-21.41 dBW/Hz
Max. Transmit EIRP	54.15 dBW
Co- or Cross Polar Mode	C
Service Area Description	Guam, Eastern Asia

### 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>	-153.6	-153.4	-152.1	-151.5	-150.7	-147.5

## Transmitting Beams 2:

Question	Response
Beam ID	NETH
Transmit Beam Frequency	12250.0 MHz -12750.0 MHz

Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-21.2 dBW/Hz
Max. Transmit EIRP	54.41 dBW
Co- or Cross Polar Mode	C
Service Area Description	Hawaii, Alaska, Canada, Northwestern USA

### Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* (dBW/m <sup>2</sup> /BW):	(dBW/m <sup>2</sup> /BW):	(dBW/m <sup>2</sup> /BW):	(dBW/m <sup>2</sup> /BW):	(dBW/m <sup>2</sup> /BW):	(dBW/m <sup>2</sup> /BW):	(dBW/m <sup>2</sup> /BW):
4.0 kHz	-152.4	-152.3	-152.2	-152.1	-152.0	-147.2

### Transmitting Beams 3:

Question	Response
Beam ID	NETV
Transmit Beam Frequency	12250.0 MHz -12750.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees

Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-21.2 dBW/Hz
Max. Transmit EIRP	54.41 dBW
Co- or Cross Polar Mode	C
Service Area Description	Hawaii, Alaska, Canada, Northwestern USA

### 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>	-152.4	-152.3	-152.2	-152.1	-152.0	-147.2

### Transmitting Beams 4:

Question	Response
Beam ID	CHTV
Transmit Beam Frequency	12250.0 MHz -12750.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-21.4 dBW/Hz

Max. Transmit EIRP	54.19 dBW
Co- or Cross Polar Mode	C
Service Area Description	Alaska, Canada, Japan, China

### 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>	-154.7	-154.0	-152.9	-151.7	-150.5	-147.9

### Transmitting Beams 5:

Question	Response
Beam ID	GBLH
Transmit Beam Frequency	12250.0 MHz -12750.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-48.8 dBW/Hz
Max. Transmit EIRP	6.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global horn antenna for telemetry

### 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):
4.0 kHz	-176.0	-175.9	-175.8	-175.7	-175.6	-174.8

### Transmitting Beams 6:

Question	Response
Beam ID	BTX1
Transmit Beam Frequency	12250.0 MHz -12750.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-41.4 dBW/Hz
Max. Transmit EIRP	14.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Telemetry over the Pacific

### 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</b>	-188.7	-188.5	-188.3	-187.7	-186.7	-167.5
<b>kHz</b>						

**Transmitting Beams 7:**

Question	Response
Beam ID	BCAT
Transmit Beam Frequency	12250.0 MHz -12750.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-48.8 dBW/Hz
Max. Transmit EIRP	6.0 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 <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</b>	-177.3	-177.2	-177.1	-176.9	-176.8	-176.1
<b>kHz</b>						

**Transmitting Beams 8:**

Question	Response
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Beam ID	BTX2
Transmit Beam Frequency	12250.0 MHz -12750.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-36.3 dBW/Hz
Max. Transmit EIRP	19.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Telemetry over Pacific

### 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>	-183.5	-183.4	-183.3	-183.2	-183.1	-162.3

## Transmitting Channels (31)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
KU3	36.0	12351.0	Service Link
KU27	36.0	12691.0	Service Link
KU26	36.0	12651.0	Service Link
KU25	36.0	12611.0	Service Link
KU24	36.0	12571.0	Service Link
KU23	36.0	12531.0	Service Link
KU22	36.0	12491.0	Service Link
KU21	36.0	12451.0	Service Link
KU20	36.0	12411.0	Service Link
KU16	36.0	12711.0	Service Link
KU1	36.0	12271.0	Service Link
KU10	36.0	12471.0	Service Link
KU11	36.0	12511.0	Service Link
KU12	36.0	12551.0	Service Link
KU13	36.0	12591.0	Service Link
KU14	36.0	12631.0	Service Link
KU15	36.0	12671.0	Service Link
KU17	36.0	12291.0	Service Link
KU18	36.0	12331.0	Service Link
KU19	36.0	12371.0	Service Link
KU2	36.0	12311.0	Service Link
KU9	36.0	12431.0	Service Link
KU8	36.0	12551.0	Service Link
KU7	36.0	12511.0	Service Link

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<b>KU6</b>	36.0	12471.0	Service Link
<b>KU5</b>	36.0	12431.0	Service Link
<b>KU4</b>	36.0	12391.0	Service Link
<b>TM3</b>	0.4	12749.5	TT&C
<b>TM1</b>	0.4	12250.5	TT&C
<b>TM2</b>	0.4	12251.5	TT&C
<b>KU28</b>	36.0	12731.0	Service Link

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## 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>BTX2.gxt</u></a>	BTX2	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
<a href="#"><u>BTX1.gxt</u></a>	BTX1	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
<a href="#"><u>CHT.gxt</u></a>	CHTV	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
<a href="#"><u>NET.gxt</u></a>	NETV	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
<a href="#"><u>NET.gxt</u></a>	NETH	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
<a href="#"><u>SAT.gxt</u></a>	SATH	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
<a href="#"><u>SAR.gxt</u></a>	SARV	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
<a href="#"><u>NER.gxt</u></a>	NERV	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
<a href="#"><u>NER.gxt</u></a>	NERH	GSO Antenna Gain Contour Data	GXT file (*.gxt)	
<a href="#"><u>CHR.gxt</u></a>	CHRH	GSO Antenna Gain Contour Data	GXT file (*.gxt)	