



312 File Number: **SATPPL2019120500143**

Filing Description

Question	Response
Description	HISPASAT 143W-1

**Satellite
Information**

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	HISPASAT 143W-1
Estimated Lifetime of Satellite(s) From Date of Launch	21 Years
Will the space station(s) operate on a Common Carrier basis?	No

Operating Frequency Bands (8)

Nature of service	Description	Frequency Band (s)	Mode Type
Fixed-Satellite Service		17300.0 MHz -17800.0 MHz	Receive
Other Satellite Service (please specify)	S band for back up commanding	2072.395 MHz -2073.195 MHz	Receive
Other Satellite Service (please specify)	S Band for Back up telemetry	2250.7 MHz -2251.3 MHz	Transmit
Fixed-Satellite Service		13750.0 MHz -14500.0 MHz	Receive
Fixed-Satellite Service		11700.0 MHz -12200.0 MHz	Transmit
Fixed-Satellite Service		11450.0 MHz -11700.03 MHz	Transmit
Fixed-Satellite Service		12200.0 MHz -12750.0 MHz	Transmit
Fixed-Satellite Service		2072.67 MHz -2072.92 MHz	Receive

Orbital Information For Geostationary Satellites

Section	Question	Response
Orbital Longitude Information	Orbital Longitude	143.0 degrees
	Hemisphere of Orbital Longitude	W
Longitudinal Tolerance or East /West Station-Keeping	Toward West	0.1 degrees
	Toward East	0.1 degrees
Inclination Excursion or North /South Station-Keeping Tolerance	Inclination Excursion or North /South Station-Keeping Tolerance	3.0 degrees
Eccentricity	Max. Eccentricity	0.0012
Antenna Axis Attitude Accuracy	Roll	0.1 degrees
	Pitch	0.1 degrees
	Yaw	0.1 degrees

Receiving Beams 1:

Question	Response
Beam ID	EUHU
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Min. Cross-Polar Isolation within Service Area	20.0 dB
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	12.17 dB/K
Min. Saturation Flux Density	-102.0 dBW/m2
Max. Saturation Flux Density	-84.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	West coast

Receiving Beams 2:

Question	Response
Beam ID	EUUVU
Receive Beam Frequency	13750.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees

Antenna Rotational Error	0.32 degrees
Min. Cross-Polar Isolation within Service Area	20.0 dB
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	12.17 dB/K
Min. Saturation Flux Density	-102.0 dBW/m2
Max. Saturation Flux Density	-84.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	TBD

**Receiving
Beams 3:**

Question	Response
Beam ID	AMVU
Receive Beam Frequency	13750.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Min. Cross-Polar Isolation within Service Area	20.0 dB
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	4.63 dB/K
Min. Saturation Flux Density	-97.0 dBW/m2
Max. Saturation Flux Density	-79.0 dBW/m2
Co- or Cross Polar Mode	C

Service Area Description	Americas beam
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**Receiving
Beams 4:**

Question	Response
Beam ID	AMHU
Receive Beam Frequency	14000.0 MHz -14250.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Min. Cross-Polar Isolation within Service Area	20.0 dB
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	4.63 dB/K
Min. Saturation Flux Density	-97.0 dBW/m ²
Max. Saturation Flux Density	-79.0 dBW/m ²
Co- or Cross Polar Mode	C
Service Area Description	Americas beam

**Receiving
Beams 5:**

Question	Response
Beam ID	EKHU
Receive Beam Frequency	17300.0 MHz -17800.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi

Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Min. Cross-Polar Isolation within Service Area	20.0 dB
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	12.17 dB/K
Min. Saturation Flux Density	-102.0 dBW/m2
Max. Saturation Flux Density	-84.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	BSS band Uplink Only from Europe beam

Receiving Beams 6:

Question	Response
Beam ID	CMGJ
Receive Beam Frequency	14498.575 MHz -14498.825 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Min. Cross-Polar Isolation within Service Area	20.0 dB
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	-99.0 dB/K
Min. Saturation Flux Density	-92.0 dBW/m2

Max. Saturation Flux Density	-90.0 dBW/m ²
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 7:

Question	Response
Beam ID	CMDO
Receive Beam Frequency	2072.671 MHz -2072.921 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Min. Cross-Polar Isolation within Service Area	20.0 dB
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-99.0 dB/K
Min. Saturation Flux Density	-91.0 dBW/m ²
Max. Saturation Flux Density	-90.0 dBW/m ²
Co- or Cross Polar Mode	C
Service Area Description	S band back up command

Receiving Beams 8:

Question	Response
Beam ID	CMDG
Receive Beam Frequency	2072.67 MHz -2072.92 MHz

Beam Type	Fixed
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Min. Cross-Polar Isolation within Service Area	20.0 dB
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-99.0 dB/K
Min. Saturation Flux Density	-91.0 dBW/m ²
Max. Saturation Flux Density	-90.0 dBW/m ²
Co- or Cross Polar Mode	C
Service Area Description	S band Back up command

Receiving Channels (37)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
AM06	36.0	14231.0	Service Link
22	36.0	13892.0	Service Link
Ka04	33.0	17557.64	Service Link
24	36.0	13954.0	Service Link
1	50.0	14037.0	Service Link
12	36.0	14377.0	Service Link
11	72.0	14317.0	Service Link
10	46.0	14213.0	Service Link
AM03	36.0	14111.0	Service Link
AM02	36.0	14071.0	Service Link
5	42.0	14211.0	Service Link
4	36.0	14166.0	Service Link
3	36.0	14126.0	Service Link
20	36.0	13812.0	Service Link
AM04	36.0	14151.0	Service Link
AM05	36.0	14191.0	Service Link
AM07	54.0	14286.0	Service Link
AM01	36.0	14031.0	Service Link
2	36.0	14086.0	Service Link
19	36.0	13772.0	Service Link
AM08	36.0	14337.0	Service Link
6	54.0	14035.0	Service Link
17	72.0	14397.0	Service Link
CMGJ	0.25	14498.7	TT&C

Ka05	33.0	17634.36	Service Link
23	36.0	13932.0	Service Link
CMDO	0.25	2072.796	TT&C
15	54.0	14286.0	Service Link
16	36.0	14337.0	Service Link
18	46.0	14464.0	Service Link
Ka03	33.0	17480.92	Service Link
13	36.0	14417.0	Service Link
21	36.0	13852.0	Service Link
14	54.0	14468.0	Service Link
AM09	54.0	14468.0	Service Link
Ka02	33.0	17404.2	Service Link
Ka01	33.0	17327.48	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	EUHD
Transmit Beam Frequency	11450.0 MHz -11700.03 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-22.7 dBW/Hz
Max. Transmit EIRP	52.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	EU Ku Beam H DN

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):
4.0 kHz	-150.0	-149.8	-149.7	-149.6	-149.5	-148.7

Transmitting Beams 2:

Question	Response
Beam ID	EUVD
Transmit Beam Frequency	11450.0 MHz -11700.03 MHz

Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-22.7 dBW/Hz
Max. Transmit EIRP	52.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	EU beam Vertical

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):
4.0 kHz	-150.0	-149.8	-149.7	-149.6	-149.5	-148.7

Transmitting Beams 3:

Question	Response
Beam ID	EBVD
Transmit Beam Frequency	12200.0 MHz -12750.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees

Antenna Rotational Error	0.32 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-22.7 dBW/Hz
Max. Transmit EIRP	52.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	TBD

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):
4.0 kHz	-150.0	-149.8	-149.7	-149.6	-149.5	-148.7

Transmitting Beams 4:

Question	Response
Beam ID	EBHD
Transmit Beam Frequency	12500.0 MHz -12750.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-22.7 dBW/Hz

Max. Transmit EIRP	52.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	BSS band

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:
4.0 kHz	-150.0	-149.8	-149.7	-149.6	-149.5	-148.7

Transmitting Beams 5:

Question	Response
Beam ID	AMVD
Transmit Beam Frequency	11700.0 MHz -11950.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	20.0 degrees
Max. Transmit EIRP Density	-27.1 dBW/Hz
Max. Transmit EIRP	48.43 dBW
Co- or Cross Polar Mode	C
Service Area Description	Americas Beam

Max. Power Flux Density

Information not provided.

Transmitting Beams 6:

Question	Response
Beam ID	AMHD
Transmit Beam Frequency	11950.0 MHz -12200.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-27.1 dBW/Hz
Max. Transmit EIRP	48.43 dBW
Co- or Cross Polar Mode	C
Service Area Description	Americas beam

Max. Power Flux Density

Information not provided.

Transmitting Beams 7:

Question	Response
Beam ID	TLMJ
Transmit Beam Frequency	2250.875 MHz -2251.125 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	dBi

Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-48.2 dBW/Hz
Max. Transmit EIRP	5.76 dBW
Co- or Cross Polar Mode	C
Service Area Description	S band Back up telemetry

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:
4.0 kHz	-175.5	-175.4	-175.2	-175.1	-175.0	-174.3

Transmitting Beams 8:

Question	Response
Beam ID	TLMO
Transmit Beam Frequency	2250.875 MHz -2251.125 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees

Max. Transmit EIRP Density	-48.2 dBW/Hz
Max. Transmit EIRP	5.76 dBW
Co- or Cross Polar Mode	C
Service Area Description	S band Back up telemetry

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):
4.0 kHz	-175.5	-175.4	-175.2	-175.1	-175.0	-174.3

Transmitting Beams 9:

Question	Response
Beam ID	TLMG
Transmit Beam Frequency	12749.633 MHz -12749.883 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-35.0 dBW/Hz
Max. Transmit EIRP	19.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Ku band Telemetry

4.0	-150.0	-149.9	-149.8	-149.7	-149.6	-149.8
kHz						

Transmitting Beams 11:

Question	Response
Beam ID	UPKD
Transmit Beam Frequency	11699.97 MHz -11700.03 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.19 degrees
Antenna Rotational Error	0.32 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-22.8 dBW/Hz
Max. Transmit EIRP	25.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	ULPC Horizontal

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):
4.0	-150.0	-149.9	-149.9	-149.9	-149.9	-149.9
kHz						

Transmitting Channels (35)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
TLMG	0.25	12749.758	TT&C
AM18	36.0	12052.0	Service Link
AM17	36.0	12012.0	Service Link
KA22	33.0	12379.6	Service Link
16	36.0	11537.0	Service Link
18	54.0	11668.0	Service Link
3	36.0	12631.0	Service Link
17	72.0	11597.0	Service Link
UPKC	0.06	11700.0	TT&C
15	54.0	11486.0	Service Link
6	54.0	12540.0	Service Link
10	46.0	12718.0	Service Link
11	72.0	11517.0	Service Link
AM10	36.0	11724.0	Service Link
AM11	36.0	11764.0	Service Link
AM12	36.0	11804.0	Service Link
AM13	36.0	11844.0	Service Link
AM14	36.0	11884.0	Service Link
AM16	36.0	11972.0	Service Link
AM21	36.0	12172.0	Service Link
AM20	36.0	12132.0	Service Link
AM19	36.0	12092.0	Service Link
AM15	36.0	11924.0	Service Link
14	54.0	11668.0	Service Link

13	36.0	11617.0	Service Link
12	36.0	11577.0	Service Link
5	42.0	12716.0	Service Link
TLMJ	0.25	2251.0	TT&C
4	36.0	12671.0	Service Link
KA23	33.0	12456.32	Service Link
KA20	33.0	12226.16	Service Link
KA21	33.0	12302.88	Service Link
KA19	33.0	12149.44	Service Link
1	50.0	12542.0	Service Link
2	36.0	12591.0	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
<u>.mdb</u>		GSO Antenna Gain Contour Data	GIMS file (*.mdb)	
