



312 File Number: **SATPPL2018030200018**

Filing Description

Question	Response
Description	EUTELSAT 133WA Relocation

**Satellite
Information**

Question	Response
Select Orbit Type	GSO
Space Station or Satellite Network Name	E133WA
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 (7)

Nature of service	Description	Frequency Band(s)	Mode Type
Fixed-Satellite Service		10950.0 MHz -11200.0 MHz	Transmit
Fixed-Satellite Service		11450.0 MHz -11700.0 MHz	Transmit
Fixed-Satellite Service		13750.0 MHz -14000.0 MHz	Receive
Fixed-Satellite Service		14000.0 MHz -14500.0 MHz	Receive
Fixed-Satellite Service		13000.0 MHz -13250.0 MHz	Receive
Fixed-Satellite Service		11200.0 MHz -11450.0 MHz	Transmit
Fixed-Satellite Service		11199.95 MHz -11200.05 MHz	Transmit

**Orbital
Information For
Geostationary
Satellites**

Section	Question	Response
Orbital Longitude Information	Orbital Longitude	133.0 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	0.4 degrees
Antenna Axis Attitude Accuracy	Roll	0.1 degrees
	Pitch	0.1 degrees
	Yaw	0.1 degrees

Receiving Beams 1:

Question	Response
Beam ID	F1V1
Receive Beam Frequency	13000.0 MHz -13250.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	31.38 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	5.7 dB/K
Min. Saturation Flux Density	-92.0 dBW/m2
Max. Saturation Flux Density	-77.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Fixed Service Area #1

Receiving Beams 2:

Question	Response
Beam ID	F1H1
Receive Beam Frequency	13000.0 MHz -13250.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	31.38 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	5.7 dB/K
Min. Saturation Flux Density	-92.0 dBW/m2
Max. Saturation Flux Density	-77.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Fixed Service Area #1

**Receiving
Beams 3:**

Question	Response
Beam ID	S1V3
Receive Beam Frequency	14250.0 MHz -14500.0 MHz
Beam Type	Steerable
Polarization	V
Peak Gain	37.03 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	10.6 dB/K
Min. Saturation Flux Density	-92.0 dBW/m2
Max. Saturation Flux Density	-77.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Steerable Service Area #1

Receiving

Beams 4:

Question	Response
Beam ID	S1H3
Receive Beam Frequency	14250.0 MHz -14500.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	37.03 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	10.6 dB/K
Min. Saturation Flux Density	-92.0 dBW/m2
Max. Saturation Flux Density	-77.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Steerable Service Area #1

Receiving Beams 5:

Question	Response
Beam ID	F1V3
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	31.38 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	5.7 dB/K
Min. Saturation Flux Density	-92.0 dBW/m2
Max. Saturation Flux Density	-77.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Fixed Service Area #1

Receiving Beams 6:

Question	Response
Beam ID	F1V2
Receive Beam Frequency	13750.0 MHz -14000.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	31.38 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	5.7 dB/K
Min. Saturation Flux Density	-92.0 dBW/m2
Max. Saturation Flux Density	-77.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Fixed Service Area #1

Receiving Beams 7:

Question	Response
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Beam ID	F1H3
Receive Beam Frequency	14000.0 MHz -14500.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	31.38 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	5.7 dB/K
Min. Saturation Flux Density	-92.0 dBW/m2
Max. Saturation Flux Density	-77.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Fixed Service Area #1

Receiving Beams 8:

Question	Response
Beam ID	F1H2
Receive Beam Frequency	13750.0 MHz -14000.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	31.38 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	5.7 dB/K
Min. Saturation Flux Density	-92.0 dBW/m2
Max. Saturation Flux Density	-77.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Fixed Service Area #1

Receiving Beams 9:

Question	Response
Beam ID	T1H1
Receive Beam Frequency	13750.0 MHz -13751.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	24.1 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	-1.6 dB/K
Min. Saturation Flux Density	-92.0 dBW/m2
Max. Saturation Flux Density	-77.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Earth Coverage from 132.85 W.L.

Receiving Channels (37)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
US9	33.0	14423.08	Service Link
US8	33.0	14403.85	Service Link
US7	33.0	14384.62	Service Link
US6	33.0	14365.38	Service Link
US5	33.0	14346.15	Service Link
US10	33.0	14442.31	Service Link
US1	33.0	14269.23	Service Link
UC2	72.0	13041.67	Service Link
UC1	72.0	13041.67	Service Link
US3	33.0	14307.69	Service Link
US4	33.0	14326.92	Service Link
UF1	72.0	14041.67	Service Link
UF2	72.0	14041.67	Service Link
UF3	72.0	14125.0	Service Link
UF4	72.0	14125.0	Service Link
UF5	72.0	14208.33	Service Link
UF6	72.0	14208.33	Service Link
TC1	0.6	13750.6	TT&C
US2	33.0	14288.46	Service Link
US12	33.0	14480.77	Service Link
US11	33.0	14461.54	Service Link
UB6	72.0	13958.33	Service Link
UB5	72.0	13958.33	Service Link
UB4	72.0	13875.0	Service Link

UB3	72.0	13875.0	Service Link
UB2	72.0	13791.67	Service Link
UB1	72.0	13791.67	Service Link
UD6	72.0	14458.33	Service Link
UD5	72.0	14458.33	Service Link
UD4	72.0	14375.0	Service Link
UD3	72.0	14375.0	Service Link
UD2	72.0	14291.67	Service Link
UD1	72.0	14291.67	Service Link
UC6	72.0	13208.33	Service Link
UC5	72.0	13208.33	Service Link
UC4	72.0	13125.0	Service Link
UC3	72.0	13125.0	Service Link

Transmitting
Beams 1:

Question	Response
Beam ID	BG
Transmit Beam Frequency	11199.95 MHz -11200.05 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	18.5 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-36.03 dBW/Hz
Max. Transmit EIRP	13.97 dBW
Co- or Cross Polar Mode	C
Service Area Description	Earth Coverage from 132.85 W.L.

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	-165.3	-165.2	-165.0	-164.9	-163.8	-162.4

Transmitting
Beams 2:

Question	Response
Beam ID	F1V6

Transmit Beam Frequency	11200.0 MHz -11450.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	39.6 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-20.97 dBW/Hz
Max. Transmit EIRP	57.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Fixed Service Area #1

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	-159.3	-156.2	-152.7	-149.9	-148.8	-147.7

Transmitting Beams 3:

Question	Response
Beam ID	F1H6
Transmit Beam Frequency	11200.0 MHz -11450.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	39.6 dBi

Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-20.97 dBW/Hz
Max. Transmit EIRP	57.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Fixed Service Area #1

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	-159.3	-156.2	-152.7	-149.9	-148.8	-147.7

Transmitting Beams 4:

Question	Response
Beam ID	S1V7
Transmit Beam Frequency	11450.0 MHz -11700.0 MHz
Beam Type	Steerable
Polarization	V
Peak Gain	35.9 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees

Max. Transmit EIRP Density	-20.98 dBW/Hz
Max. Transmit EIRP	54.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	Steerable Service Area #1

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	-154.8	-154.2	-153.0	-151.4	-149.8	-147.6

Transmitting Beams 5:

Question	Response
Beam ID	F1V7
Transmit Beam Frequency	11450.0 MHz -11700.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	39.6 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-20.97 dBW/Hz
Max. Transmit EIRP	57.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Fixed Service Area #1

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	-159.3	-156.2	-152.7	-149.9	-148.8	-147.7

Transmitting Beams 6:

Question	Response
Beam ID	F1H7
Transmit Beam Frequency	11450.0 MHz -11700.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	39.6 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-20.97 dBW/Hz
Max. Transmit EIRP	57.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Fixed Service Area #1

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	-159.3	-156.2	-152.7	-149.8	-148.8	-147.7
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**Transmitting
Beams 7:**

Question	Response
Beam ID	S1H7
Transmit Beam Frequency	11450.0 MHz -11700.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	35.9 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-20.98 dBW/Hz
Max. Transmit EIRP	54.2 dBW
Co- or Cross Polar Mode	C
Service Area Description	Steerable Service Area #1

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* BW:	(dBW/m² /BW):	(dBW/m² /BW):	(dBW/m² /BW):	(dBW/m² /BW):	(dBW/m² /BW):	(dBW/m² /BW):
4.0 kHz	-154.8	-154.2	-153.0	-151.4	-149.8	-147.6

**Transmitting
Beams 8:**

Question	Response
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Beam ID	F1V5
Transmit Beam Frequency	10950.0 MHz -11200.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	39.6 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-20.97 dBW/Hz
Max. Transmit EIRP	57.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Fixed Service Area #1

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* (dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):
4.0 kHz	-159.3	-156.2	-152.7	-149.9	-148.8	-147.7

Transmitting Beams 9:

Question	Response
Beam ID	F1H5
Transmit Beam Frequency	10950.0 MHz -11200.0 MHz
Beam Type	Fixed
Polarization	H

Peak Gain	39.6 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-20.97 dBW/Hz
Max. Transmit EIRP	57.6 dBW
Co- or Cross Polar Mode	C
Service Area Description	Fixed Service Area #1

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	-159.3	-156.2	-152.7	-149.9	-148.8	-147.7

Transmitting Beams 10:

Question	Response
Beam ID	BR
Transmit Beam Frequency	11450.5 MHz -11453.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	22.91 dBi
Antenna Pointing Error	0.15 degrees
Antenna Rotational Error	0.4 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-40.56 dBW/Hz
Max. Transmit EIRP	14.21 dBW
Co- or Cross Polar Mode	C
Service Area Description	Regional Beacon Service Area

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	-169.8	-169.7	-169.6	-169.5	-168.4	-166.9

**Transmitting
Channels (33)**

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
TM1	0.3	11451.091	TT&C
TM2	0.3	11452.57	TT&C
DC1	72.0	11241.67	Service Link
DC2	72.0	11241.67	Service Link
DC3	72.0	11325.0	Service Link
DC4	72.0	11325.0	Service Link
DC5	72.0	11408.33	Service Link
DC6	72.0	11408.33	Service Link
DB2	72.0	10991.67	Service Link
DB3	72.0	11075.0	Service Link
DB4	72.0	11075.0	Service Link
DB5	72.0	11158.33	Service Link
DB6	72.0	11158.33	Service Link
DD1	72.0	11491.67	Service Link
DD2	72.0	11491.67	Service Link
DD3	72.0	11575.0	Service Link
DS2	33.0	11488.46	Service Link
DS3	33.0	11507.69	Service Link
DS4	33.0	11526.92	Service Link
DS5	33.0	11546.15	Service Link
DS6	33.0	11565.38	Service Link
B1	0.1	11200.0	TT&C
DB1	72.0	10991.67	Service Link
DD4	72.0	11575.0	Service Link

DD5	72.0	11658.33	Service Link
DD6	72.0	11658.33	Service Link
DS1	33.0	11469.23	Service Link
DS7	33.0	11584.62	Service Link
DS8	33.0	11603.85	Service Link
DS9	33.0	11623.08	Service Link
DS10	33.0	11642.31	Service Link
DS11	33.0	11661.54	Service Link
DS12	33.0	11680.77	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
E133WA - Service Areas.pdf		Service Area Diagram	PDF file (*.pdf)	Service Area Diagrams for all applicable beams
E133WA.mdb		GSO Antenna Gain Contour Data	GIMS file (*.mdb)	GIMS Database with Antenna Gain Contours for all applicable beams