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

Federal Communications Commission

312 File Number: **SATLOA2021110400140**

Filing Description

Question	Response
Description	Application for Approval for Orbital Deployment and Operating Authority For The Astra Constellation. Full constellation includes 13620 satellites. Schedule S contains Phase 1.0 parameters only. Phase 2.0 and 3.0 parameter attached as .xlsx in full app.

Satellite Information

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	Astra's Constellation
Estimated Lifetime of Satellite(s) From Date of Launch	5 Years
Will the space station(s) operate on a Common Carrier basis?	No

Operating Frequency Bands (5)

Nature of service	Description	Frequency Band(s)	Mode Type
Fixed-Satellite Service		50400.0 MHz -51400.0 MHz	Receive
Fixed-Satellite Service		47200.0 MHz -50200.0 MHz	Receive
Mobile-Satellite Service		40000.0 MHz -42000.0 MHz	Transmit
Mobile-Satellite Service		39500.0 MHz -40000.0 MHz	Transmit
Fixed-Satellite Service		37500.0 MHz -42000.0 MHz	Transmit

Orbital Information For Non-Geostationary Satellites

Question	Response
Total Number of Satellites in the active constellation	40
Orbit Epoch Date	01/01/2021
Celestrial Reference Body	Earth

Orbital Plane 1:

Question	Response
Number of Satellites in Plane	40
Inclination Angle	0.0 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5903.0 seconds
Apogee	700.0 km
Perigee	700.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	0.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	351.0
2	342.0
3	333.0
4	324.0
5	315.0
6	306.0
7	297.0
8	288.0
9	279.0
10	270.0
11	261.0
12	252.0
13	243.0

14	234.0
15	225.0
16	216.0
17	207.0
18	198.0
19	180.0
20	171.0
21	162.0
22	153.0
23	144.0
24	135.0
25	126.0
26	117.0
27	108.0
28	99.0
29	90.0
30	81.0
31	72.0
32	63.0
33	54.0
34	45.0
35	36.0
36	27.0
37	18.0
38	9.0
39	0.0

40	189.0

Receiving Beams 1:

Question	Response
Beam ID	GURL
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	32.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	5.8 dB/K
Min. Saturation Flux Density	-95.9 dBW/m2
Max. Saturation Flux Density	-89.9 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

Receiving Beams 2:

Question	Response
Beam ID	GULL
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	32.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	5.8 dB/K
Min. Saturation Flux Density	-95.9 dBW/m2
Max. Saturation Flux Density	-89.9 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

Receiving Beams 3:

Question	Response
Beam ID	GURU
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	32.8 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	6.2 dB/K
Min. Saturation Flux Density	-95.9 dBW/m2
Max. Saturation Flux Density	-89.9 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

Receiving Beams 4:

Question	Response
Beam ID	GULU
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	32.8 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	6.2 dB/K
Min. Saturation Flux Density	-95.9 dBW/m2
Max. Saturation Flux Density	-89.9 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

Receiving Beams 5:

Question	Response
Beam ID	TCR
Receive Beam Frequency	47200.0 MHz -47210.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	8.5 dBi
Antenna Pointing Error	0.01 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-23.9 dB/K
Min. Saturation Flux Density	-72.2 dBW/m2
Max. Saturation Flux Density	-66.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

Receiving Beams 6:

Question	Response
Beam ID	TCL
Receive Beam Frequency	47200.0 MHz -47210.0 MHz
Beam Type	Fixed
Polarization	LHCP
Peak Gain	8.5 dBi
Antenna Pointing Error	0.01 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-23.9 dB/K
Min. Saturation Flux Density	-72.2 dBW/m2
Max. Saturation Flux Density	-66.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

Receiving Beams 7:

Question	Response

Beam ID	UURL
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	32.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	5.5 dB/K
Min. Saturation Flux Density	-109.2 dBW/m2
Max. Saturation Flux Density	-103.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

Receiving Beams 8:

Question	Response
Beam ID	UULL
Receive Beam Frequency	47200.0 MHz -50200.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	32.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees

G/T at Max. Gain Point	5.5 dB/K
Min. Saturation Flux Density	-109.2 dBW/m2
Max. Saturation Flux Density	-103.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

Receiving Beams 9:

Question	Response
Beam ID	UURU
Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	32.8 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	5.8 dB/K
Min. Saturation Flux Density	-109.2 dBW/m2
Max. Saturation Flux Density	-103.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

Receiving Beams 10:

Question	Response
Beam ID	UULU

Receive Beam Frequency	50400.0 MHz -51400.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	32.8 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	5.8 dB/K
Min. Saturation Flux Density	-109.2 dBW/m2
Max. Saturation Flux Density	-103.2 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

Receiving Channels (66)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
UU22	100.0	49350.0	Service Link
UU21	100.0	49250.0	Service Link
UU20	100.0	49150.0	Service Link
UU13	100.0	48450.0	Service Link
UU14	100.0	48550.0	Service Link
UU31	100.0	50450.0	Service Link
UU32	100.0	50550.0	Service Link
UU33	100.0	50650.0	Service Link
UU34	100.0	50750.0	Service Link
UU35	100.0	50850.0	Service Link
UU36	100.0	50950.0	Service Link
UU37	100.0	51050.0	Service Link
UU38	100.0	51150.0	Service Link
UU39	100.0	51250.0	Service Link
UU40	100.0	51350.0	Service Link
UU19	100.0	49050.0	Service Link
UU18	100.0	48950.0	Service Link
UU17	100.0	48850.0	Service Link
UU16	100.0	48750.0	Service Link
UU15	100.0	48650.0	Service Link
UU30	100.0	50150.0	Service Link
UU29	100.0	50050.0	Service Link
UU28	100.0	49950.0	Service Link
UU27	100.0	49850.0	Service Link

UU26	100.0	49750.0	Service Link
UU25	100.0	49650.0	Service Link
UU24	100.0	49550.0	Service Link
UU23	100.0	49450.0	Service Link
GU10	250.0	47595.0	Feeder Link
GU11	250.0	49825.0	Feeder Link
GU12	250.0	50075.0	Feeder Link
GU13	250.0	50525.0	Feeder Link
GU14	250.0	50775.0	Feeder Link
GU15	250.0	51025.0	Feeder Link
UU1	100.0	47250.0	Service Link
UU2	100.0	47350.0	Service Link
UU3	100.0	47450.0	Service Link
UU4	100.0	47550.0	Service Link
UU5	100.0	47650.0	Service Link
UU6	100.0	47750.0	Service Link
UU7	100.0	47850.0	Service Link
UU8	100.0	47950.0	Service Link
UU9	100.0	48050.0	Service Link
UU10	100.0	48150.0	Service Link
UU11	100.0	48250.0	Service Link
UU12	100.0	48350.0	Service Link
GU9	250.0	49325.0	Feeder Link
GU8	250.0	49075.0	Feeder Link
GU7	250.0	48825.0	Feeder Link
GU6	250.0	48575.0	Feeder Link

GU5	250.0	48325.0	Feeder Link
GU4	250.0	48075.0	Feeder Link
GU3	250.0	47825.0	Feeder Link
GU2	250.0	47575.0	Feeder Link
GU16	250.0	51275.0	Feeder Link
C7	1.0	47206.5	TT&C
C8	1.0	47207.5	TT&C
C2	1.0	47201.5	TT&C
C3	1.0	47202.5	TT&C
C4	1.0	47203.5	TT&C
C5	1.0	47204.5	TT&C
C6	1.0	47205.5	TT&C
C9	1.0	47208.5	TT&C
C10	1.0	47209.5	TT&C
C1	1.0	47200.5	TT&C
GU1	250.0	47325.0	Feeder Link

Transmitting Beams 1:

Question	Response
Beam ID	GDR1
Transmit Beam Frequency	37500.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	34.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-44.3 dBW/Hz
Max. Transmit EIRP	39.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

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	-120.0	-120.0	-116.3	-112.5	-108.8	-105.0

Transmitting Beams 2:

Question	Response
Beam ID	GDL1
Transmit Beam Frequency	37500.0 MHz -42000.0 MHz

Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	34.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-44.3 dBW/Hz
Max. Transmit EIRP	39.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

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	-120.0	-120.0	-116.3	-112.5	-108.8	-105.0

Transmitting Beams 3:

Question	Response
Beam ID	GDR2
Transmit Beam Frequency	39500.0 MHz -40000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	34.5 dBi
Antenna Pointing Error	0.25 degrees

Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-44.3 dBW/Hz
Max. Transmit EIRP	39.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

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	-120.0	-120.0	-116.3	-112.5	-108.8	-105.0

Transmitting Beams 4:

Question	Response
Beam ID	GDL2
Transmit Beam Frequency	39500.0 MHz -40000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	34.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-44.3 dBW/Hz

Max. Transmit EIRP	39.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

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	-120.0	-120.0	-116.3	-112.5	-108.8	-105.0

Transmitting Beams 5:

Question	Response
Beam ID	GDR3
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	34.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-44.3 dBW/Hz
Max. Transmit EIRP	39.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

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	-115.0	-115.0	-112.5	-110.0	-107.5	-105.0

Transmitting Beams 6:

Question	Response
Beam ID	GDL3
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	34.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-44.3 dBW/Hz
Max. Transmit EIRP	39.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

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	-115.0	-115.0	-112.5	-110.0	-107.5	-105.0

Transmitting Beams 7:

Question	Response
Beam ID	UDR1
Transmit Beam Frequency	37500.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	34.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-40.3 dBW/Hz
Max. Transmit EIRP	39.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

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	-120.0	-120.0	-116.3	-112.5	-108.8	-105.0

Transmitting Beams 8:

Question	Response

Beam ID	UDL1
Transmit Beam Frequency	37500.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	34.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-40.3 dBW/Hz
Max. Transmit EIRP	39.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

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	-120.0	-120.0	-116.3	-112.5	-108.8	-105.0

Transmitting Beams 9:

Question	Response
Beam ID	TMR
Transmit Beam Frequency	37500.0 MHz -37510.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP

Peak Gain	8.5 dBi
Antenna Pointing Error	0.01 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-53.5 dBW/Hz
Max. Transmit EIRP	9.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

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	-120.0	-120.0	-116.3	-112.5	-108.8	-105.0

Transmitting Beams 10:

Question	Response
Beam ID	TML
Transmit Beam Frequency	37500.0 MHz -37510.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	8.5 dBi
Antenna Pointing Error	0.01 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-53.5 dBW/Hz
Max. Transmit EIRP	9.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

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	-120.0	-120.0	-116.3	-112.5	-108.8	-105.0

Transmitting Beams 11:

Question	Response
Beam ID	UDR2
Transmit Beam Frequency	39500.0 MHz -40000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	34.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-40.3 dBW/Hz
Max. Transmit EIRP	39.7 dBW
Co- or Cross Polar Mode	C

Service Area Description	Visible Earth down to minimum elevation

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	-120.0	-120.0	-116.3	-112.5	-108.8	-105.0

Transmitting Beams 12:

Question	Response
Beam ID	UDL2
Transmit Beam Frequency	39500.0 MHz -40000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	34.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-40.3 dBW/Hz
Max. Transmit EIRP	39.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

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	-120.0	-120.0	-116.3	-112.5	-108.8	-105.0

Transmitting Beams 13:

Question	Response
Beam ID	UDR3
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	RHCP
Peak Gain	34.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-40.3 dBW/Hz
Max. Transmit EIRP	39.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

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	-115.0	-115.0	-112.5	-110.0	-107.5	-105.0

Transmitting Beams 14:

Question	Response
Beam ID	UDL3
Transmit Beam Frequency	40000.0 MHz -42000.0 MHz
Beam Type	Both Steerable and Shapeable
Polarization	LHCP
Peak Gain	34.5 dBi
Antenna Pointing Error	0.25 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-40.3 dBW/Hz
Max. Transmit EIRP	39.7 dBW
Co- or Cross Polar Mode	C
Service Area Description	Visible Earth down to minimum elevation

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	-115.0	-115.0	-112.5	-110.0	-107.5	-105.0

Transmitting Channels (78)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
FG7	250.0	39125.0	Feeder Link
FG6	250.0	38875.0	Feeder Link
FG5	250.0	38625.0	Feeder Link
MGU1	250.0	39625.0	Feeder Link
MGU2	250.0	39875.0	Feeder Link
MGU3	250.0	40125.0	Feeder Link
MGU4	250.0	40375.0	Feeder Link
MGU5	250.0	40625.0	Feeder Link
MGU6	250.0	40875.0	Feeder Link
UD25	100.0	39950.0	Service Link
UD26	100.0	40050.0	Service Link
UD27	100.0	40150.0	Service Link
UD28	100.0	40250.0	Service Link
FG3	250.0	38125.0	Feeder Link
FG2	250.0	37875.0	Feeder Link
T5	2.0	37509.0	TT&C
T4	2.0	37507.0	TT&C
UD10	100.0	38450.0	Service Link
FG1	250.0	37625.0	Feeder Link
FG8	250.0	38875.0	Feeder Link
FG9	250.0	39625.0	Feeder Link
UD15	100.0	38950.0	Service Link
UD24	100.0	39850.0	Service Link
UD23	100.0	39750.0	Service Link

UD22	100.0	39650.0	Service Link
UD21	100.0	39550.0	Service Link
UD20	100.0	39450.0	Service Link
UD19	100.0	39350.0	Service Link
UD18	100.0	39250.0	Service Link
UD17	100.0	39150.0	Service Link
UD16	100.0	39050.0	Service Link
UD9	100.0	38350.0	Service Link
UD29	100.0	40350.0	Service Link
UD30	100.0	40450.0	Service Link
UD31	100.0	40550.0	Service Link
UD32	100.0	40650.0	Service Link
UD33	100.0	40750.0	Service Link
UD34	100.0	40850.0	Service Link
UD35	100.0	40950.0	Service Link
UD36	100.0	41050.0	Service Link
UD37	100.0	41150.0	Service Link
UD38	100.0	41250.0	Service Link
UD39	100.0	41350.0	Service Link
UD40	100.0	41450.0	Service Link
UD41	100.0	41550.0	Service Link
UD42	100.0	41650.0	Service Link
UD43	100.0	41750.0	Service Link
UD44	100.0	41850.0	Service Link
UD45	100.0	41950.0	Service Link
FG4	250.0	38375.0	Feeder Link

UD11	100.0	38650.0	Service Link
UD12	100.0	38650.0	Service Link
T3	2.0	37505.0	TT&C
MGU0	250.0	41875.0	Feeder Link
MGU9	250.0	41625.0	Feeder Link
MGU8	250.0	41375.0	Feeder Link
MGU7	250.0	41125.0	Feeder Link
UD14	100.0	38850.0	Service Link
UD13	100.0	38750.0	Service Link
UD8	100.0	38250.0	Service Link
UD7	100.0	38150.0	Service Link
UD6	100.0	38050.0	Service Link
UD5	100.0	37950.0	Service Link
UD4	100.0	37850.0	Service Link
UD3	100.0	37750.0	Service Link
UD2	100.0	37650.0	Service Link
UD1	100.0	37550.0	Service Link
FG13	250.0	40625.0	Feeder Link
FG14	250.0	40875.0	Feeder Link
FG15	250.0	41125.0	Feeder Link
FG16	250.0	41375.0	Feeder Link
FG17	250.0	41625.0	Feeder Link
FG18	250.0	41875.0	Feeder Link
T1	2.0	37501.0	TT&C
T2	2.0	37503.0	TT&C
FG10	250.0	39875.0	Feeder Link

FG11	250.0	40125.0	Feeder Link
FG12	250.0	40375.0	Feeder 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?	Yes
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
Astra_GIMS.mdb		NGSO Antenna Gain Data	GIMS file (*.mdb)	