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

Federal Communications Commission

312 File Number: **SATLOI2016111500111**

Filing Description

Question	Response
Description	Space Norway Arctic Satellite Broadband Mission (ASBM)

Satellite Information

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	ASBM
Estimated Lifetime of Satellite(s) From Date of Launch	15 Years
Will the space station(s) operate on a Common Carrier basis?	No

Operating Frequency Bands (11)

Nature of service	Description	Frequency Band(s)	Mode Type
Other Satellite Service (please specify)	Gateway band (Ka)	28000.0 MHz -29000.0 MHz	Receive
Other Satellite Service (please specify)	Gateway band (Ka)	18200.0 MHz -19200.0 MHz	Transmit
Fixed-Satellite Service		10700.0 MHz -10950.0 MHz	Transmit
Fixed-Satellite Service		10950.0 MHz -11200.0 MHz	Transmit
Fixed-Satellite Service		11200.0 MHz -11450.0 MHz	Transmit
Fixed-Satellite Service		11450.0 MHz -11700.0 MHz	Transmit
Fixed-Satellite Service		11700.0 MHz -12200.0 MHz	Transmit
Fixed-Satellite Service		14000.0 MHz -14500.0 MHz	Receive
Fixed-Satellite Service		12200.0 MHz -12750.0 MHz	Transmit
Fixed-Satellite Service		19700.0 MHz -20200.0 MHz	Transmit
Fixed-Satellite Service		29500.0 MHz -30000.0 MHz	Receive

Orbital Information For Non-Geostationary Satellites

Question	Response
Total Number of Satellites in the active constellation	2
Orbit Epoch Date	04/01/2019
Celestrial Reference Body	Earth

Orbital Plane 1:

Question	Response
Number of Satellites in Plane	2
Inclination Angle	63.4 degrees
Right Ascension of Ascending Node	280.0 degrees
Argument of Perigee	270.0 degrees
Orbital Period	57442.0 seconds
Apogee	43509.0 km
Perigee	8089.0 km
Active Service Arc Begin Angle with respect to Ascending Node	35.0 degrees
Active Service Arc End Angle with respect to Ascending Node	35.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	117.25
2	297.25

Receiving Beams 1:

Question	Response
Beam ID	RKU1
Receive Beam Frequency	14125.0 MHz -14250.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	8.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving Beams 2:

Question	Response
Beam ID	RKU2
Receive Beam Frequency	14000.0 MHz -14125.0 MHz
Beam Type	Steerable
Polarization	V
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	8.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving Beams 3:

Question	Response
Beam ID	RKA1
Receive Beam Frequency	29500.0 MHz -29625.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	6.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving

Beams 4:

Question	Response
Beam ID	RKA2
Receive Beam Frequency	29625.0 MHz -29750.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	6.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving Beams 5:

Question	Response
Beam ID	RKU3
Receive Beam Frequency	14000.0 MHz -14125.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	8.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving Beams 6:

Question	Response
Beam ID	RKU4
Receive Beam Frequency	14125.0 MHz -14250.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	8.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving Beams 7:

Question	Response

Beam ID	RKU5
Receive Beam Frequency	14000.0 MHz -14125.0 MHz
Beam Type	Steerable
Polarization	V
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	8.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving Beams 8:

Question	Response
Beam ID	RKU6
Receive Beam Frequency	14000.0 MHz -14125.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	8.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving Beams 9:

Question	Response
Beam ID	RKU7
Receive Beam Frequency	14125.0 MHz -14250.0 MHz
Beam Type	Steerable
Polarization	V
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	8.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving Beams 10:

Question	Response

Beam ID	RKA3
Receive Beam Frequency	29750.0 MHz -29875.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	6.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving Beams 11:

Question	Response
Beam ID	RKA4
Receive Beam Frequency	29500.0 MHz -29625.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	6.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving Beams 12:

Question	Response
Beam ID	RKA5
Receive Beam Frequency	29625.0 MHz -29750.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	6.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving Beams 13:

Question	Response

Beam ID	RKA6
Receive Beam Frequency	29750.0 MHz -29875.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	6.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving Beams 14:

Question	Response
Beam ID	RKA7
Receive Beam Frequency	29875.0 MHz -30000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 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	6.0 dB/K
Min. Saturation Flux Density	-115.0 dBW/m2
Max. Saturation Flux Density	-90.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Arctic north of 55N

Receiving Beams 15:

Question	Response
Beam ID	RGW1
Receive Beam Frequency	28000.0 MHz -29000.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	38.5 dBi
Antenna Pointing Error	0.12 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	8.5 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-80.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Nominal pointing towards Bjornoya (19E, 74.5N)

Receiving Beams 16:

Question	Response

Beam ID	RGW2
Receive Beam Frequency	28000.0 MHz -29000.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	38.5 dBi
Antenna Pointing Error	0.12 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	8.5 dB/K
Min. Saturation Flux Density	-105.0 dBW/m2
Max. Saturation Flux Density	-80.0 dBW/m2
Co- or Cross Polar Mode	X
Service Area Description	Nominal pointing towards Bjornoya (19E, 74.5N)

Receiving Channels (16)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
RKU7	115.0	14187.5	Service Link
RKU5	115.0	14062.5	Service Link
RKA2	115.0	29687.5	Service Link
RKA1	115.0	29562.5	Service Link
RKA7	115.0	29937.5	Service Link
RKA6	115.0	29812.5	Service Link
RKA5	115.0	29687.5	Service Link
RKA4	115.0	29562.5	Service Link
RGW2	805.0	28500.0	Feeder Link
RGW1	805.0	28500.0	Feeder Link
RKU6	115.0	14062.5	Service Link
RKU3	115.0	14062.5	Service Link
RKU2	115.0	14062.5	Service Link
RKU1	115.0	14187.5	Service Link
RKA3	115.0	29812.5	Service Link
RKU4	115.0	14187.5	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	TGW1
Transmit Beam Frequency	18200.0 MHz -19200.0 MHz
Beam Type	Steerable
Polarization	RHCP
Peak Gain	38.5 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.3 dBW/Hz
Max. Transmit EIRP	54.3 dBW
Co- or Cross Polar Mode	X
Service Area Description	Nominally pointed towards Bjornoya, Norway (19E 74.5N)

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	-127.8	-127.7	-127.6	-127.4	-127.3	-126.4

Transmitting Beams 2:

Question	Response
Beam ID	TGW2
Transmit Beam Frequency	18200.0 MHz -19200.0 MHz

Beam Type	Steerable
Polarization	LHCP
Peak Gain	38.5 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.3 dBW/Hz
Max. Transmit EIRP	54.3 dBW
Co- or Cross Polar Mode	X
Service Area Description	Nominally pointed towards Bjornoya, Norway (19E 74.5N)

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	-127.8	-127.7	-127.6	-127.4	-127.3	-126.4

Transmitting Beams 3:

Question	Response
Beam ID	TKA1
Transmit Beam Frequency	19700.0 MHz -19825.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.0 dBW/Hz
Max. Transmit EIRP	54.6 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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	-127.5	-127.4	-127.3	-127.1	-127.0	-126.1

Transmitting Beams 4:

Question	Response
Beam ID	TKA2
Transmit Beam Frequency	19825.0 MHz -19950.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.0 dBW/Hz

Max. Transmit EIRP	54.6 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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	-127.5	-127.4	-127.3	-127.1	-127.0	-126.1

Transmitting Beams 5:

Question	Response
Beam ID	TKA3
Transmit Beam Frequency	19950.0 MHz -20075.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.0 dBW/Hz
Max. Transmit EIRP	54.6 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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	-127.5	-127.4	-127.3	-127.1	-127.0	-126.1

Transmitting Beams 6:

Question	Response
Beam ID	TKA4
Transmit Beam Frequency	19700.0 MHz -19825.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.0 dBW/Hz
Max. Transmit EIRP	54.6 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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	-127.5	-127.4	-127.3	-127.1	-127.0	-126.1

Transmitting Beams 7:

Question	Response
Beam ID	TKA5
Transmit Beam Frequency	19825.0 MHz -19950.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.0 dBW/Hz
Max. Transmit EIRP	54.6 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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	-127.5	-127.4	-127.3	-127.1	-127.0	-126.1

Transmitting Beams 8:

Question	Response
Beam ID	TKA6
Transmit Beam Frequency	19950.0 MHz -20075.0 MHz

Beam Type	Steerable
Polarization	LHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.0 dBW/Hz
Max. Transmit EIRP	54.6 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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	-127.5	-127.4	-127.3	-127.1	-127.0	-126.1

Transmitting Beams 9:

Question	Response
Beam ID	TKA7
Transmit Beam Frequency	20075.0 MHz -20200.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-26.0 dBW/Hz
Max. Transmit EIRP	54.3 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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	-127.5	-127.4	-127.3	-127.1	-127.0	-126.1

Transmitting Beams 10:

Question	Response
Beam ID	X1
Transmit Beam Frequency	10700.0 MHz -10950.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-27.6 dBW/Hz

Max. Transmit EIRP	53.0 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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):
4.0 kHz	-153.1	-153.0	-152.8	-152.7	-152.6	-151.7

Transmitting Beams 11:

Question	Response
Beam ID	X2
Transmit Beam Frequency	11200.0 MHz -11450.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-27.6 dBW/Hz
Max. Transmit EIRP	53.0 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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):
4.0 kHz	-153.1	-153.0	-152.8	-152.7	-152.6	-151.7

Transmitting Beams 12:

Question	Response
Beam ID	X3
Transmit Beam Frequency	11450.0 MHz -11700.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-27.6 dBW/Hz
Max. Transmit EIRP	53.0 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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):
4.0 kHz	-153.1	-153.0	-152.8	-152.7	-152.6	-151.7

Transmitting Beams 13:

Question	Response
Beam ID	X4
Transmit Beam Frequency	11700.0 MHz -12200.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-27.6 dBW/Hz
Max. Transmit EIRP	53.0 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

Max. Power Flux Density

Information not provided.

Transmitting Beams 14:

Question	Response
Beam ID	X5
Transmit Beam Frequency	12200.0 MHz -12750.0 MHz
Beam Type	Steerable
Polarization	LHCP
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-27.3 dBW/Hz
Max. Transmit EIRP	53.0 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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):
4.0 kHz	-153.1	-153.0	-152.8	-152.7	-152.6	-151.7

Transmitting Beams 15:

Question	Response
Beam ID	TKU1
Transmit Beam Frequency	11075.0 MHz -11200.0 MHz
Beam Type	Steerable
Polarization	V
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-27.6 dBW/Hz

Max. Transmit EIRP	53.0 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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):
4.0 kHz	-153.1	-153.0	-152.8	-152.7	-152.6	-151.7

Transmitting Beams 16:

Question	Response
Beam ID	TKU2
Transmit Beam Frequency	10950.0 MHz -11075.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-27.6 dBW/Hz
Max. Transmit EIRP	53.0 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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):
4.0 kHz	-153.1	-153.0	-152.8	-152.7	-152.6	-151.7

Transmitting Beams 17:

Question	Response
Beam ID	TKU3
Transmit Beam Frequency	10950.0 MHz -11075.0 MHz
Beam Type	Steerable
Polarization	V
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-27.6 dBW/Hz
Max. Transmit EIRP	53.0 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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):
4.0 kHz	-153.1	-153.0	-152.8	-152.7	-152.6	-151.7

Transmitting Beams 18:

Question	Response
Beam ID	TKU4
Transmit Beam Frequency	11075.0 MHz -11200.0 MHz
Beam Type	Steerable
Polarization	V
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-27.6 dBW/Hz
Max. Transmit EIRP	53.0 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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):
4.0 kHz	-153.1	-153.0	-152.8	-152.7	-152.6	-151.7

Transmitting Beams 19:

Question	Response
Beam ID	TKU5
Transmit Beam Frequency	10950.0 MHz -11075.0 MHz

Beam Type	Steerable
Polarization	H
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-27.6 dBW/Hz
Max. Transmit EIRP	53.0 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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):
4.0 kHz	-153.1	-153.0	-152.8	-152.7	-152.6	-151.7

Transmitting Beams 20:

Question	Response
Beam ID	TKU6
Transmit Beam Frequency	10950.0 MHz -11075.0 MHz
Beam Type	Steerable
Polarization	V
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees

Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-27.6 dBW/Hz
Max. Transmit EIRP	53.0 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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):
4.0 kHz	-153.1	-153.0	-152.8	-152.7	-152.6	-151.7

Transmitting Beams 21:

Question	Response
Beam ID	TKU7
Transmit Beam Frequency	11075.0 MHz -11200.0 MHz
Beam Type	Steerable
Polarization	H
Peak Gain	35.0 dBi
Antenna Pointing Error	0.12 degrees
Antenna Rotational Error	0.1 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-27.6 dBW/Hz

Max. Transmit EIRP	53.0 dBW
Co- or Cross Polar Mode	X
Service Area Description	North of 55N

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):
4.0 kHz	-153.1	-153.0	-152.8	-152.7	-152.6	-151.7

Transmitting Channels (21)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
X5	500.0	12450.0	Service Link
X4	500.0	11950.0	Service Link
TKU7	115.0	11137.5	Service Link
TKU6	115.0	11012.5	Service Link
TKU5	115.0	11012.5	Service Link
TKA7	115.0	20137.5	Service Link
TKA5	115.0	19887.5	Service Link
TKA4	115.0	19762.5	Service Link
TKA3	115.0	20012.5	Service Link
TKA6	115.0	20012.5	Service Link
TKA2	115.0	19887.5	Service Link
TKA1	115.0	19762.5	Service Link
TKU4	115.0	11137.5	Service Link
TKU3	115.0	11012.5	Service Link
TKU2	115.0	11012.5	Service Link
TKU1	115.0	11137.5	Service Link
TGW2	1000.0	18700.0	Feeder Link
TGW1	1000.0	18700.0	Feeder Link
X3	250.0	11575.0	Service Link
X2	250.0	11325.0	Service Link
X1	250.0	10825.0	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?	No
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
ASBM Service area above 55 North.pdf		Service Area Diagram	PDF file (*.pdf)	ASBM service area north of 55N latitude
ASBM Ku and Ka band service beam cluster at handover.pdf		NGSO Antenna Gain Data	PDF file (*.pdf)	Ku and Ka band 7 beam cluster nominal pointing towards service area above 55N (satellite at handover)
ASBM Ku and Ka band service beam cluster at apogee.pdf		NGSO Antenna Gain Data	PDF file (*.pdf)	Ku and Ka band 7 beam cluster nominal pointing towards service area above 55N (satellite at apogee)
ASBM Ka band gateway beam nominal pointing.pdf		NGSO Antenna Gain Data	PDF file (*.pdf)	Ka band gateway beam with nominal pointing towards Bjornoya (19E, 74.5 N). At satellite apogee and handover
ASBM Ku and Ka band standard receive beam.pdf		NGSO Antenna Gain Data	PDF file (*.pdf)	Ku and Ka band standard receive beam. Will be arranged in a 7 beam steerable cluster
ASBM Ku and Ka band standard transmit beam.pdf		NGSO Antenna Gain Data	PDF file (*.pdf)	Ku and Ka band standard transmit beam. Will be arranged in a 7 beam steerable cluster