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

Federal Communications Commission

312 File Number: **SATLOI2019032800020**

Filing Description

Question	Response
Description	Myriota System

Satellite Information

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	Myriota
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 (2)

Nature of service	Description	Frequency Band(s)	Mode Type
Other Satellite Service (please specify)	Non-Voice, Non-Geostationary Mobile-Satellite Service	400.15 MHz -401.0 MHz	Transmit
Other Satellite Service (please specify)	Non-Voice, Non-Geostationary Mobile-Satellite Service	399.9 MHz -400.05 MHz	Receive

Orbital Information For Non-Geostationary Satellites

Question	Response
Total Number of Satellites in the active constellation	26
Orbit Epoch Date	12/01/2019
Celestrial Reference Body	Earth

Orbital Plane 1:

Question	Response
Number of Satellites in Plane	2
Inclination Angle	97.69 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	180.0
2	0.0

Orbital Plane 2:

Question	Response
Number of Satellites in Plane	2
Inclination Angle	97.69 degrees
Right Ascension of Ascending Node	30.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	240.0
2	60.0

Orbital Plane 3:

Question	Response
Number of Satellites in Plane	2
Inclination Angle	97.69 degrees
Right Ascension of Ascending Node	60.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	300.0
2	120.0

Orbital Plane 4:

Question	Response
Number of Satellites in Plane	2
Inclination Angle	97.69 degrees
Right Ascension of Ascending Node	90.0 degrees

Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	0.0
2	180.0

Orbital Plane 5:

Question	Response
Number of Satellites in Plane	2
Inclination Angle	97.69 degrees
Right Ascension of Ascending Node	120.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	60.0

2	240.0

Orbital Plane 6:

Question	Response
Number of Satellites in Plane	2
Inclination Angle	97.69 degrees
Right Ascension of Ascending Node	150.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	270.0
2	90.0

Orbital Plane 7:

Question	Response
Number of Satellites in Plane	2
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	90.0
2	0.0

Orbital Plane 8:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	30.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	300.0

Orbital Plane 9:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	54.0 degrees

Right Ascension of Ascending Node	60.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	240.0

Orbital Plane 10:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	90.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	180.0

Orbital Plane 11:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	120.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	120.0

Orbital Plane 12:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	150.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	60.0

Orbital Plane 13:

Question	Response
Number of Satellites in Plane	2
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	180.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	90.0
2	0.0

Orbital Plane 14:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	210.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds

Apogee	600.0 km
Perigee	600.0 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	300.0

Orbital Plane 15:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	240.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	240.0

Orbital Plane 16:

Question	Response
Number of Satellites in Plane	1

Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	270.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	180.0

Orbital Plane 17:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	300.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	120.0

Orbital Plane 18:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	54.0 degrees
Right Ascension of Ascending Node	330.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	600.0 km
Perigee	600.0 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	60.0

Receiving Beams 1:

Question	Response
Beam ID	UL1
Receive Beam Frequency	399.9 MHz -400.05 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	2.15 dBi
Antenna Pointing Error	2.0 degrees
Antenna Rotational Error	2.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
G/T at Max. Gain Point	-30.0 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 2:

Question	Response
Beam ID	UL2
Receive Beam Frequency	399.9 MHz -400.05 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	2.15 dBi
Antenna Pointing Error	2.0 degrees
Antenna Rotational Error	2.0 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
G/T at Max. Gain Point	-30.0 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Channels (15)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
UC10	0.01	399.995	Service Link
UC11	0.01	400.005	Service Link
UC12	0.01	400.015	Service Link
UC13	0.01	400.025	Service Link
UC14	0.01	400.035	Service Link
UC2	0.01	399.915	Service Link
UC3	0.01	399.925	Service Link
UC4	0.01	399.935	Service Link
UC8	0.01	399.975	Service Link
UC7	0.01	399.965	Service Link
UC6	0.01	399.955	Service Link
UC5	0.01	399.945	Service Link
UC9	0.01	399.985	Service Link
UC15	0.01	400.045	Service Link
UC1	0.01	399.905	Service Link

Transmitting Beams 1:

Question	Response
Beam ID	DL1
Transmit Beam Frequency	400.15 MHz -401.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	2.15 dBi
Antenna Pointing Error	2.0 degrees
Antenna Rotational Error	2.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	0.0 degrees
Max. Transmit EIRP Density	-34.5 dBW/Hz
Max. Transmit EIRP	14.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-125.0	-125.0	-125.0	-125.0	-125.0	-125.0

Transmitting Beams 2:

Question	Response
Beam ID	DL2
Transmit Beam Frequency	400.15 MHz -401.0 MHz
Beam Type	Fixed
Polarization	V

Peak Gain	2.15 dBi
Antenna Pointing Error	2.0 degrees
Antenna Rotational Error	2.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	90.0 degrees
Max. Transmit EIRP Density	-34.5 dBW/Hz
Max. Transmit EIRP	14.5 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

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	-125.0	-125.0	-125.0	-125.0	-125.0	-125.0

Transmitting Channels (85)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
DC55	0.01	400.695	Service Link
DC2	0.01	400.165	Service Link
DC27	0.01	400.415	Service Link
DC28	0.01	400.425	Service Link
DC29	0.01	400.435	Service Link
DC82	0.01	400.965	Service Link
DC83	0.01	400.975	Service Link
DC36	0.01	400.505	Service Link
DC37	0.01	400.515	Service Link
DC38	0.01	400.525	Service Link
DC39	0.01	400.535	Service Link
DC4	0.01	400.185	Service Link
DC40	0.01	400.545	Service Link
DC41	0.01	400.555	Service Link
DC42	0.01	400.565	Service Link
DC85	0.01	400.995	Service Link
DC84	0.01	400.985	Service Link
DC54	0.01	400.685	Service Link
DC53	0.01	400.675	Service Link
DC52	0.01	400.665	Service Link
DC11	0.01	400.255	Service Link
DC12	0.01	400.265	Service Link
DC13	0.01	400.275	Service Link
DC14	0.01	400.285	Service Link

DC15	0.01	400.295	Service Link
DC16	0.01	400.305	Service Link
DC17	0.01	400.315	Service Link
DC18	0.01	400.325	Service Link
DC19	0.01	400.335	Service Link
DC20	0.01	400.345	Service Link
DC21	0.01	400.355	Service Link
DC22	0.01	400.365	Service Link
DC23	0.01	400.375	Service Link
DC24	0.01	400.385	Service Link
DC25	0.01	400.395	Service Link
DC26	0.01	400.405	Service Link
DC3	0.01	400.175	Service Link
DC30	0.01	400.445	Service Link
DC31	0.01	400.455	Service Link
DC32	0.01	400.465	Service Link
DC33	0.01	400.475	Service Link
DC34	0.01	400.485	Service Link
DC35	0.01	400.495	Service Link
DC56	0.01	400.705	Service Link
DC57	0.01	400.715	Service Link
DC58	0.01	400.725	Service Link
DC59	0.01	400.735	Service Link
DC60	0.01	400.745	Service Link
DC61	0.01	400.755	Service Link
DC62	0.01	400.765	Service Link

DC63	0.01	400.775	Service Link
DC64	0.01	400.785	Service Link
DC65	0.01	400.795	Service Link
DC66	0.01	400.805	Service Link
DC67	0.01	400.815	Service Link
DC68	0.01	400.825	Service Link
DC69	0.01	400.835	Service Link
DC70	0.01	400.845	Service Link
DC71	0.01	400.855	Service Link
DC72	0.01	400.865	Service Link
DC73	0.01	400.875	Service Link
DC74	0.01	400.885	Service Link
DC75	0.01	400.895	Service Link
DC76	0.01	400.905	Service Link
DC77	0.01	400.915	Service Link
DC78	0.01	400.925	Service Link
DC79	0.01	400.935	Service Link
DC80	0.01	400.945	Service Link
DC81	0.01	400.955	Service Link
DC49	0.01	400.635	Service Link
DC1	0.01	400.155	Service Link
DC10	0.01	400.245	Service Link
DC43	0.01	400.575	Service Link
DC44	0.01	400.585	Service Link
DC45	0.01	400.595	Service Link
DC46	0.01	400.605	Service Link

DC47	0.01	400.615	Service Link
DC48	0.01	400.625	Service Link
DC5	0.01	400.195	Service Link
DC6	0.01	400.205	Service Link
DC7	0.01	400.215	Service Link
DC8	0.01	400.225	Service Link
DC9	0.01	400.235	Service Link
DC50	0.01	400.645	Service Link
DC51	0.01	400.655	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?	
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?	
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
Gain Contours.pdf		NGSO Antenna Gain Data	PDF file (*.pdf)	