



312 File Number: **SATLOA2025061800149**

Filing Description

Question	Response
Description	The IM-3 Mission is part of the Commercial Lunar Payload Services program sponsored by NASA to explore the surface of the Moon. The NOVA-C is the third in a series of lunar landers that will deliver important payloads to the lunar surface.

Satellite
Information

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	IM-3 Nova-C
Estimated Lifetime of Satellite(s) From Date of Launch	1 Years
Will the space station(s) operate on a Common Carrier basis?	No

**Operating
Frequency
Bands (4)**

Nature of service	Description	Frequency Band(s)	Mode Type
Other Satellite Service (please specify)	Operation under RR 4.4 and FN 5.150.	2400.0 MHz -2500.0 MHz	Transmit
Other Satellite Service (please specify)	Operation under RR 4.4 and FN 5.150.	2400.0 MHz -2500.0 MHz	Receive
Space Operation Service		2025.0 MHz -2110.0 MHz	Receive
Space Research Service		2200.0 MHz -2290.0 MHz	Transmit

**Orbital
Information For
Non-
Geostationary
Satellites**

Question	Response
Total Number of Satellites in the active constellation	1
Orbit Epoch Date	02/27/2026
Celestial Reference Body	Moon

Orbital Plane 1:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	0.0 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	0.0 seconds
Apogee	1.0 km
Perigee	1.0 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

Receiving Beams 1:

Question	Response
Beam ID	RHEM
Receive Beam Frequency	2025.0 MHz -2110.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	6.5 dBi
Antenna Pointing Error	0.5 degrees
Antenna Rotational Error	1.5 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-20.0 dB/K
Min. Saturation Flux Density	-122.0 dBW/m2
Max. Saturation Flux Density	-59.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	ITU service area code XAA (shared throughout the world)

Receiving Beams 2:

Question	Response
Beam ID	RHGA
Receive Beam Frequency	2025.0 MHz -2110.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	14.8 dBi
Antenna Pointing Error	0.5 degrees
Antenna Rotational Error	1.5 degrees

Receiving Beams 3:

Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-10.9 dB/K
Min. Saturation Flux Density	-133.0 dBW/m2
Max. Saturation Flux Density	-70.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	ITU service code XAA (shared throughout the world)

Question	Response
Beam ID	RROV
Receive Beam Frequency	2400.0 MHz -2500.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	5.9 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	-23.0 dB/K
Min. Saturation Flux Density	-65.0 dBW/m2
Max. Saturation Flux Density	-5.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Lunar surface exclusively.

Receiving
Channels (6)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
RR02	4.0	2472.0	Service Link
RR01	4.0	2411.0	Service Link
RX02	0.075	2035.5941	TT&C
RX03	0.202	2035.5941	TT&C
RUM1	0.004	2035.5941	TT&C
RX01	0.03	2035.5941	TT&C

Transmitting
Beams 1:

Question	Response
Beam ID	THEM
Transmit Beam Frequency	2200.0 MHz -2290.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	5.6 dBi
Antenna Pointing Error	0.5 degrees
Antenna Rotational Error	1.5 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-22.9 dBW/Hz
Max. Transmit EIRP	14.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	ITU service area code XAA (shared throughout the world)

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	-169.2	-169.2	-169.2	-169.2	-169.2	-169.1

Transmitting
Beams 2:

Question	Response
Beam ID	THGA
Transmit Beam Frequency	2200.0 MHz -2290.0 MHz

Beam Type	Fixed
Polarization	RHCP
Peak Gain	15.6 dBi
Antenna Pointing Error	0.5 degrees
Antenna Rotational Error	1.5 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-12.9 dBW/Hz
Max. Transmit EIRP	24.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	ITU service code XAA (shared throughout the world)

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	-159.2	-159.2	-159.2	-159.2	-159.2	-159.1

Transmitting Beams 3:

Question	Response
Beam ID	QHEM
Transmit Beam Frequency	2200.0 MHz -2290.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	5.6 dBi
Antenna Pointing Error	0.5 degrees

Antenna Rotational Error	1.5 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-33.3 dBW/Hz
Max. Transmit EIRP	19.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	ITU service area code XAA (shared throughout the world)

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	-179.7	-179.6	-179.6	-179.6	-179.6	-179.5

Transmitting Beams 4:

Question	Response
Beam ID	QHGA
Transmit Beam Frequency	2200.0 MHz -2290.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	15.6 dBi
Antenna Pointing Error	0.5 degrees
Antenna Rotational Error	1.5 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-23.3 dBW/Hz

Max. Transmit EIRP	29.1 dBW
Co- or Cross Polar Mode	C
Service Area Description	ITU service area code XAA (shared throughout the world)

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	-169.7	-169.6	-169.6	-169.6	-169.6	-169.5

Transmitting Beams 5:

Question	Response
Beam ID	TROV
Transmit Beam Frequency	2400.0 MHz -2500.0 MHz
Beam Type	Fixed
Polarization	V
Peak Gain	5.9 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	-60.1 dBW/Hz
Max. Transmit EIRP	5.9 dBW
Co- or Cross Polar Mode	C
Service Area Description	Lunar surface exclusively.

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	-200.0	-200.0	-200.0	-200.0	-200.0	-200.0

**Transmitting
Channels (16)**

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
TR01	4.0	2411.0	Service Link
TR02	4.0	2472.0	Service Link
TX13	8.0	2250.0	Service Link
TX12	5.5	2250.0	Service Link
TX11	2.6	2250.0	Service Link
TX06	0.175	2250.0	Service Link
TX07	0.35	2250.0	Service Link
TX08	0.5	2250.0	Service Link
TX09	0.625	2250.0	Service Link
TX10	1.5	2250.0	Service Link
TX14	10.7	2250.0	Service Link
TX01	0.005	2210.6	TT&C
TX02	0.03	2210.6	TT&C
TX03	0.075	2210.6	TT&C
TX04	0.125	2210.6	TT&C
TX05	0.275	2210.6	TT&C

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?	
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
THGA.gxt	THGA	NGSO Antenna Gain Data	GXT file (*.gxt)	
RHEM.gxt	RHEM	NGSO Antenna Gain Data	GXT file (*.gxt)	
RHGA.gxt	RHGA	NGSO Antenna Gain Data	GXT file (*.gxt)	
QHEM.gxt	QHEM	NGSO Antenna Gain Data	GXT file (*.gxt)	
QHGA.gxt	QHGA	NGSO Antenna Gain Data	GXT file (*.gxt)	
THEM.gxt	THEM	NGSO Antenna Gain Data	GXT file (*.gxt)	
RROV.gxt	RROV	NGSO Antenna Gain Data	GXT file (*.gxt)	
TROV.gxt	TROV	NGSO Antenna Gain Data	GXT file (*.gxt)	