

Narrative

Momentum Space LLC (“Momentum”) requests special temporary authority (“STA”)¹ for a period of 30 days to operate the Vigoride-3 (“VR-3”) spacecraft on additional frequencies.² The satellite is experiencing anomalies, and Momentum has been unable to communicate with VR-3 using the authorized center frequencies (*i.e.*, 8200 MHz (downlink) and 2075 MHz (uplink)).

Momentum has determined that the communications equipment on VR-3 is erroneously operating on different center frequencies (*i.e.*, 8250 MHz (downlink) and 2067.5 MHz (uplink))(the “New Frequencies”). To avoid the potential loss of the VR-3 spacecraft and its payloads during this critical period after deployment, Momentum has commenced operations on the New Frequencies to communicate with VR-3 and address the anomalies expeditiously. Also, Momentum will attempt to set the operating frequencies to the originally authorized center frequencies. As part of this application, Momentum will reach out to federal spectrum managers to pre-coordinate use of the New Frequencies. For the above reasons, Momentum requests that the IB grant this application expeditiously.

Technical Information:

Provided below are the technical parameters associated with the use of the New Frequencies. The parameters are identical to those previously authorized by the IB under the Momentum STA, except that the center frequency has changed. Momentum will use only those ground stations identified in Appendix A of the Momentum STA.

Criteria	Uplink (Earth-to-space)	Downlink (space-to-Earth)	Notes
Center Frequency	2067.5 MHz	8250 MHz	
Bandwidth	0.1 MHz	1 MHz	
Data Rate	50 kbps	500 kbps	Data rate is configurable from approximately 1 kbps up to a maximum listed
Modulation & Coding	BPSK	OQPSK	Links may include FEC.
Transmit Power	9W	3W	
Transmit Antenna	4.5m (dish)	Patch (6 dBiC)	

¹ 47 C.F.R. § 25.120.

² On April 28, 2022, the International Bureau (“IB”) granted Momentum authority to deploy and operate VR-3. *See* Stamp Grant, Momentum Space LLC, File No. SAT-STA-20211216-00195 (granted April 28, 2022)(“Momentum STA”). VR-3 was deployed into orbit on May 25, 2022.

Transmit Antenna EIRP	43 dBW	6.16 dBW	
Receive Antenna	Patch (7 dBiC)	Dish (48 dBiC)	
Receive Antenna G/T	-23 dB/K	25 dB/K	

Table 1: Radio Frequency Plan