

Appendix to Rocket Lab USA, Inc. Ground Testing STA Application

Application File Number: 0336-EX-ST-2020

Date of Submission: February 24, 2020

This document provides additional details for the application for Special Temporary Authority (STA) for which Rocket Lab USA, Inc. (“Rocket Lab”) has applied to authorize ground testing for its Electron Launch Vehicle at Wallops Island, VA. First, it briefly summarizes the purpose of the STA application and the proposed testing. Next, it provides tables of technical details for the testing, including specific frequency usage information.

Rocket Lab is in the process of coordinating its testing operations with appropriate federal incumbents and proposes only to operate consistent with coordination agreements reached with these incumbents, including the U.S. Air Force, U.S. Navy, NASA, and AFTRCC (non-government).

Background and Testing Overview:

Rocket Lab seeks FCC authorization to use frequencies to conduct ground testing on Rocket Lab’s launch vehicle – Electron – at Rocket Lab’s launch complex (LC-2) which is located at the Mid-Atlantic Regional Spaceport on Wallops Island, Virginia. The ground testing is conducted as part of vehicle and ground system verification. The testing is planned to be carried out while the launch vehicle is in a hangar and when the launch vehicle is on the launch pad. The ground tests will include communications between the launch vehicle and ground systems. The actual launch operation will occur at some point in the future, and Rocket Lab will seek authorization for the launch communications separately.

REQUESTED TESTING TRANSMISSIONS

Center Frequency	2385 MHz
Minimum 99% BW	7.97 MHz
Maximum 99% BW	7.97 MHz
Proposed minimum emission designation	N/A
Proposed maximum emission designation	7M97G1D--
Minimum transmit power	3 dBW
Maximum transmit power	10 dBW
Minimum PSD	-67.8 dBW/Hz
Maximum PSD	-60.8 dBW/Hz
Minimum Elevation Angle Transmit	0
Maximum Elevation Angle Transmit	0
Transmit Antenna Polarization	Linear 45 degrees
Notes	Emission designation and maximum 99% BW includes +/- 65kHz of simulated Doppler shift.

Center Frequency	2374 MHz
Minimum 99% BW	3.17 MHz
Maximum 99% BW	3.17 MHz
Proposed minimum emission designation	N/A
Proposed maximum emission designation	3M17G1D--
Minimum transmit power	3 dBW
Maximum transmit power	6 dBW
Minimum PSD	-63.8 dBW/Hz
Maximum PSD	-56.8 dBW/Hz
Minimum Elevation Angle Transmit	0
Maximum Elevation Angle Transmit	-1.5
Transmit Antenna Polarization	Linear 45 degrees
Notes	Emission designation and maximum 99% BW includes +/- 65kHz of simulated Doppler shift.

Center Frequency	2272.5 MHz
Minimum 99% BW	0.15 MHz
Maximum 99% BW	0.3 MHz
Proposed minimum emission designation	150KG1D--
Proposed maximum emission designation	300KG1D--
Minimum transmit power	-10 dBW
Maximum transmit power	0 dBW
Minimum PSD	-64.8 dBW/Hz
Maximum PSD	-54.8 dBW/Hz
Minimum Elevation Angle Transmit	0
Maximum Elevation Angle Transmit	0
Transmit Antenna Polarization	RHCP
Notes	

Center Frequency	2061 MHz
Minimum 99% BW	0.75 MHz
Maximum 99% BW	0.15 MHz
Proposed minimum emission designation	75K0G1D--
Proposed maximum emission designation	150KG1D--
Minimum transmit power	-60 dBW
Maximum transmit power	-40 dBW
Minimum PSD	-111.8 dBW/Hz
Maximum PSD	-91.8 dBW/Hz