



Rev 1.1, 5/7/2018

Request for Special Temporary Authority

Virgin Orbit, LLC

Virgin Orbit is designing a satellite launch vehicle ("Launcher One") that will be air launched from a modified 747 airplane ("Cosmic Girl"). STA License is requested to operate an S-Band Transmitter on Launcher One at 2262MHz for the upcoming first launch. STA is necessary to authorize the use of S-Band transmitter for telemetry and video transmission. The transmitter is located on 2nd stage, it will be turned on few minutes before launch and will stay ON until the 2nd stage battery is depleted. Data rate will be switched from 5.4Mbps to 2.7Mbps at some point in time after the launch.



Figure 1: Cosmic Girl (747) with Launcher One under the wing

747 will take-off from Mojave Air and Space Port in California with Launcher One in captive carry. Launcher One will be dropped and launched in the Western Sea Range restricted airspace off Point Mugu, California. Details of captive carry phase, launch and trajectory are being coordinated with FAA Commercial Space Transportation Office (AST). Launch license to be provided by FAA-AST. Virgin Orbit is coordinating with FAA-ATO (FAA-Air Traffic Control Organization) and LA Air Traffic Control Center (ZLA) for use of air space. Captive carry flight and orbital trajectory details will be shared with NASA, NTIA, NOAA, WAFC and other Government agencies through FAA or directly if necessary.

Virgin Orbit has also shared the details of this application with Western Area Frequency Coordinator. We are currently in contact with Mr. Andrew Foltz at DOD Western Area Frequency Coordinator (WAFC), andrew.foltz@navy.mil.



	Data Rate	
Output Power	20 Watts	20 Watts
EIRP	49 dBm	43 dBm
Bandwidth	7.02 MHz	3.51 MHz
Modulation Scheme	SOQPSK-TG	SOQPSK-TG
Emissions Designator	7M02G1W	3M51G1W
Carrier Frequency Tolerance	+/- 20 ppm	+/- 20 ppm
Transmitter Manufacturer	Quasonix	
Transmitter Partnumber	QSX-VSR4-1111-20-80-04AB-VP-WV	
Antenna Manufacturer	Haigh Farr	
Antenna Part Number	13155	

Table 2: Transmitter Specs

Stop Buzzer Point of Contact:

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