

From: Joshua Kirschenheiter

To: Doug Young
Date: April 12, 2018

Subject: Request for Info - File # 0537-EX-ST-2018

Message:

1. Due to possible HIA to a Commerce weather radar in the Santa Ana Mountains, CA (C 960146), the center frequency must be increased 20 MHz.

Due to hardware limitations we have changed our frequency request from 2.93625 - 2.97625GHz to 2.98 to 3.02GHz.

2. Has a COA been authorized for this flight? Please provide COA information.

The balloon system complies with CFR14.101 (widely known as Part 101) regulations for Unmanned Free Balloons. As such, no prior FAA authorization is required. The balloon provider uses an established procedure to begin coordinating with the FAA 72 hours in advance of the launch time, as specified in CFR14.101.

3. Is there a transponder and/or VHF communications associated with this flight?

There are no transponders or VHF (0.03 to 0.3GHz) emissions from our payload. The only other emission from our payload is an Iridium Satellite link. The Iridium link is a commercial off the shelf satellite communications solution. The Iridium link uses Time-Division Multiple Access (TDMA) and Frequency-Division Multiple Access (FDMA) transmission schemes, with a Differentially Encoded Quadrature Phase Shift Keyed (DEQPSK) modulation scheme. The Iridium satellite constellation operates from 1616MHz to 1626.5MHz. The balloon will have two of these Iridium links. Each of these links average RF power is ~7W, and a standard 3dBi "Hockey Puck" antenna is connected, giving a EIRP of ~14W. The beamwidth is ~145 degrees.

All of these items have been updated in the application and the exhibit submitted on 4/12/2018.