**COM**

The communication subsystem provides a method of verification for the completion of each mission phase. It also provides a way to maintain communication with the primary spacecraft and serves as a means to power on and off the LEDs on the secondary spacecraft. Data sent over the RF link would be relative distances and velocities, images from the payload, and primary spacecraft health. Boeing is providing the communication subsystem on the primary spacecraft and the communication subsystem on the secondary spacecraft consists of an RF receiver and patch antenna.

The primary spacecraft will be sending down relative distances and velocities, images from the payload, and primary spacecraft health and a communication system to support the transfer of that data. The radio will be operating in the 430/440 MHz range using GMSK modulation. The uplink data rate will be at least 4000 bps and the downlink data rate will be at least 100 kbps. Knowing the health of the spacecraft is important, so data such as battery voltage, temperature data, solar panel current, etc. will beacon down periodically. Based off historical data and experience, finding a CubeSat early in its mission can be difficult, so the beacon interval will be no more than 10 seconds to make it an easy target to listen for.

The RF link between the secondary spacecraft and the ground is much simpler. One command needs to be sent to the secondary spacecraft to power the navigation aids on and off. An RF receiver on the secondary spacecraft will listen for a command sent from the ground. The receiver will operate in the 430 MHz range and use FSK modulation.

**CDH**