From: Tim DeBenedictis

To: Doug Young
Date: November 30, 2012

Subject: Request for Info - STA File #0587-EX-ST-2012

Message:

Communications between our satellite and the MC3 ground stations will take place only when the satellite passes in view of a ground station. Ground station passes will take place 2 - 3 times per day. They will last no more than 10 minutes each, but will usually be much shorter (about 5 minutes).

During passes, digital communication between the satellite and ground stations will utilize AX.25 packetized radio transmission at 450 MHz at 9.6 kbps (ground-to-satellite) and 915 MHz (satellite-to-ground), at 57.6 kbps, with data packets of various lengths. There is no regular pulse repetition rate, as a radar installation might produce. But in a typical second, the satellite might transmit to ground with a 75% duty cycle (transmitting 750 msec, off 250 msec). We emphasize that this will not be a regular, repeating pattern; that is just a typical scenario, and transmission pulses will usually be slower than this.

During passes, ground stations will transmit data to the satellite at relatively higher power (75W) on 450 MHz using a narrow, directional beam; the satellite will transmit data to ground using an 8W omnidirectional transmitter at 915 MHz.

For all of these reasons, we expect the signature of our satellite's 915 MHz transmissions to look very different from the regular pulses generated by terrestrial radar installations. Due to the very short duration of our mission (90 days), we do not expect any interference with intentional ground transmissions on this frequency.