

The RECONSO mission is designed to demonstrate visual detection and tracking of space debris from a small Cubesat platform. The spacecraft has been designed, fabricated and tested by a team of Georgia Tech undergraduate and graduate students who will also be responsible for mission operations. Photographs of the sky regions of interest will be acquired during the sunlight portion of the orbit. Onboard processing will occur during the eclipse periods. Image processing will detect moving objects in the acquired series of images and assign orbital parameters to the detected objects. Downlinked data will be the estimated orbital elements for the debris, not raw images. RECONSO contains no propulsion system, and is pointed using a 3°axis magnetorquer system.

Planned Orbit:

Apogee – 500 km

Perigee - 800 km

Inclination - 75 deg

Period: - 97.728 min

Additional Info:

1. THE TYPE OF SATELLITE, GEOSTATIONARY OR NONGEOSTATIONARY
 - Non-geostationary
2. IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM

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of Satellites: 1

b) THE SATELLITE TRANSMITTER ANTENNA GAIN AND BEAMWIDTH

Antenna Gain – 2.2 dBi

Beamwidth – 156.2 deg

**c) THE SATELLITE TRANSMITTER ANTENNA AZIMUT: NARROWBEAM (NB),
EARTH COVERAGE (EC),**

Earth Coverage

3. THE EARTH STATION RECEIVER ANTENNA GAIN, BEAMWIDTH, AZIMUTHAL RANGE, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS AND THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS,

Antenna gain - 18.9 dBi

Beamwidth – 21 deg

Site Elevation – 286 m

Antenna Height – 20 m

4. THE EARTH STATION RECEIVER ANTENNA AZIMUTH, THE MINIMUM ANGLE OF ELEVATION (V00 TO V90),

Receiver azimuth – 360 deg

Min Angle of Elevation – V10

5. THE TRANSMITTER ANTENNA ORIENTATION (XAP), EXAMPLE XAP01 J , AND THE RECEIVER ANTENNA ORIENTATION (RAP), EXAMPLE RAP01 J , WHERE J REPRESENTS LINEAR POLARIZATION. OTHER POLARIZATIONS INCLUDE H FOR HORIZONTAL, V FOR VERTICAL, S FOR HORIZONTAL AND VERTICAL, L FOR LEFT HAND CIRCULAR, R FOR RIGHT HAND CIRCULAR, T FOR RIGHT AND LEFT HAND CIRCULAR, E FOR ELLIPTICAL AND O FOR OBLIQUE ANGLED CROSSED.,

XAP01 J

RAP01 T