

Libertad I

GENERAL TECHNICAL INFORMATION
PICOSATELLITE - CUBESAT -
"LIBERTAD I"
UNIVERSIDAD SERGIO ARBOLEDA

Name: Libertad 1

Type of satellite: Cubesat - Picosatellite

Design and Fabrication: Universidad Sergio Arboleda

Country: Colombia

LAUNCH

Date of Launch: Tuesday 27th of March of 2007

Local Time (Colombia) of Launch: 1: 46 a.m.

Place of Launch: Cosmodrome of Baikonur, Kazakhstan

Parameters of the Orbit:

Type of Orbit: LEO. Low Earth Orbit

LTAN: 22:30 UTC

Inclination: 98 Degrees

Period: 1 hour 39 minutes

Apogee: 787.5 Km

Perigee: 659.56 Km

Eccentricity: 0.0090

Speed of insertion of the picosatellite: 7.5 Km/seg

Time of separation from the rocket after launch: 16 minutes

Technical data of Libertad 1:

Dimensions: 10 x 10 x 10 cm

Mass: 995 gr

License of the Picosatellite: 5K3L

License of the ground station "Rodrigo Noguera Laborde": 5k3USA

Radio Frequencies (IARU) :

Downlink: 437.405 MHz

Uplink: 145.825 MHz

Power of transmission: Downlink: 400 mW

Power of transmission: Uplink: Max: 35 W

Consumption of current: Stand by: 5 mA

Consumption of current: In transmission: 135 mA
Type of batteries: Lithium Ion: 2 batteries of 7.2 V, 950 mA)
Maximum Current of the batteries: 1.9 A

For further information contact:

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News:

After a very long and complex process, "Libertad I" was sent to CalPoly University so that some technical and very rigorous tests could be done. When these tests are passed, the satellite will be sent to Baikonur (Space center of the former Soviet Union), so that it can be put in orbit on the 27th of March at 1:45 am.

As of now the mission was a success, in the sense that it enabled our country to believe in our human capabilities. Also, space technology is now a current topic of discussion, and there is now a good environment to keep achieving technological advances. We are all still waiting at the moment.

Cubesat "Libertad I"

By the end of the XX century, the so called Space Age was born. This provided technological advances that have contributed to the development of humanity. One of these advances is evident in academia: Professor Robert Twiggs from Stanford University, invented a type of satellite (CubeSat) that because of its small size, is commonly called Picosatellite, and enables the development of projects that generate multiple benefits. There are currently more than 40 institutions all over the world that have developed these "Cube Satellites", and some of these still perform research related to the subject. Among these is Montana State University, Calpoly, University of Louisiana, University of California at Irvine and University of Toronto and Soka University (Japan).

Because of the need that Colombia has to solve multiple problems that have to do with space matters such as weather prediction or telecommunications, the University Sergio Arboleda has pioneered the first steps in learning about these issues. This has enabled students, teachers, and researchers in engineering, to be involved in the latest issues related to Cube satellites.

The project started with a pedagogical nature, and evolved to become a formative research

project that has unleashed technological and scientific challenges. Several institutions of different levels have started to take part in this and other related areas of knowledge.