ESAT

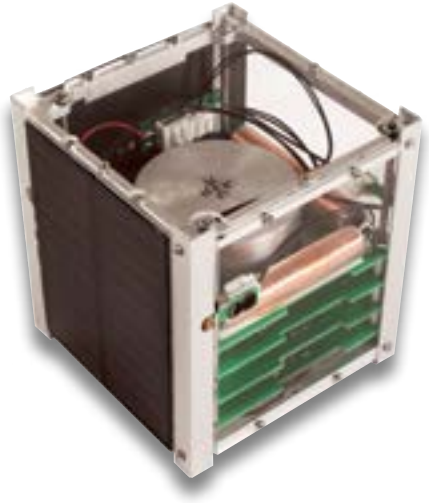
ESAT is an educational satellite designed for hands-on learning for all education levels: STEM education, university studies and professional training.

ESAT is perfectly fitted to train on design, manufacture, integration, validation and operation of satellites.

The users can build on it. ESAT allows them to integrate and test their own developments, both SW and HW.

Theia is an initiative of the Spanish User Support and Operations Center (E-USOC), a center delegated by the European Space Agency (ESA) to perform the operations of scientific experiments onboard the International Space Station (ISS). E-USOC is part of the Universidad Politécnica de Madrid (UPM).

info@theiaspace.com / www.theiaspace.com / tel.:+34 914524883



ESAT is a 10×10×10 cm nanosatellite based on the successful CubeSat standard, weighing less than 1 kg.

ESAT has the following typical spacecraft subsystems:

- Electrical Power.
- Command and Data Handling.
- Attitude Determination and Control.
- Structure.

ESAT features a Wi-Fi communication system allowing the connection to a PC, where the ESAT GUI allows an easy operation of the satellite.

All the information needed to operate and extend ESAT is available in the set of documentation provided with it.

With ESAT the users can choose to focus and work on each subsystem independently or to practice with the fully integrated satellite. ■

Theia SPACE

Structure:

- Lightweight.
- Easy to assemble.
- Allows the integration of custom subsystems and payloads. ■

Electrical Power Subsystem:

- Two solar panels.
- Main board with an MPPT regulator and a programmable processor.
- Secondary board with two batteries and DET regulator.
- Both boards provide more than 3 hours autonomy.
- Two power switches.
- Current, voltage and temperature sensors. ■

Command and Data Handling Subsystem:

- Programmable processor.
- Micro SD card memory storage.
- USB debug communication. ■

Attitude Determination and Control Subsystem:

- Possibility to implement and test different control laws.
- Magnetometer.
- Two magnetorquers.
- Momentum wheel with tachometer.
- Four sun sensors. ■

ESAT Graphical User Interface:

- Real time monitoring and commanding.
- Telemetry numerical fields and plots.
- Telecommand parameter fields. ■

Ground Support Equipment:

- Magnetic field simulator.
- Sun simulator.
- Turntable.
- Assembly tools. ■

E-USOC: Spanish User Support and Operations Centre / Centro de Investigación y Desarrollo Aeroespacial
info@theiaspace.com / tel.: +34 91 452 4925 / www.theiaspace.com