



**Space
Sustainability
Forum 2026**

Assembly, integration and test of Argentina's Atenea mission on crewed Artemis II

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Leandro Jablonski – Araceli Romina Barrera –
Javier Vázquez – Florencia Zuccolo –
Mariano Amarfil – Pablo Servidia – Josefina Pérès

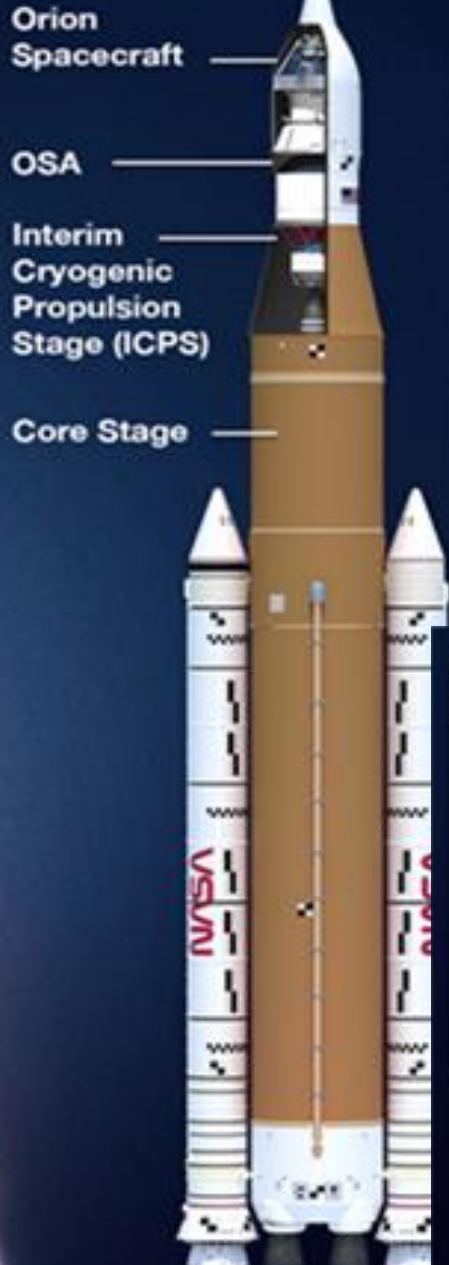


October 14th, 2026

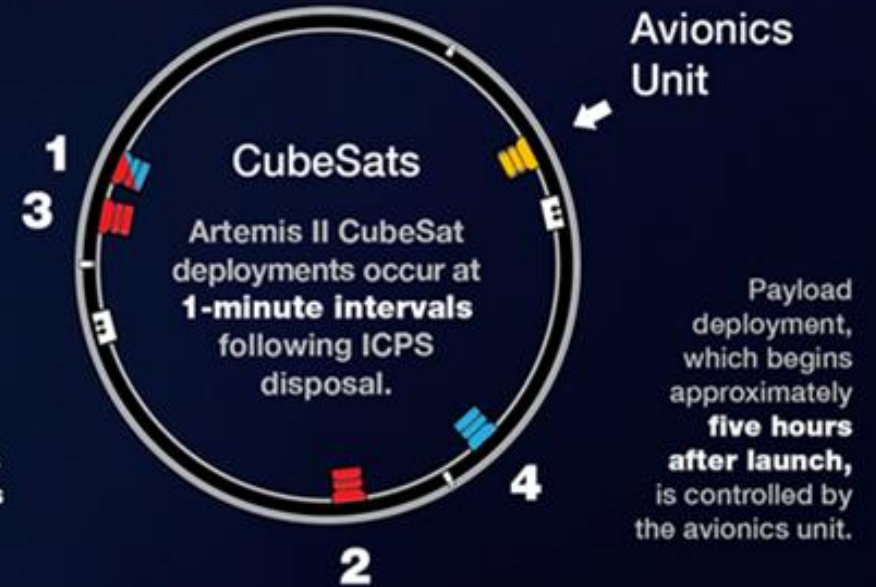
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- Introduction & Mission Definition
- Concept of Operation
- Mission Objectives
- Safety and Mission Assurance
- Flight Segment Description
- Manufacture, Integration and Testing
- Launch, Operations & Results
- Questions

Introduction and Mission Definition



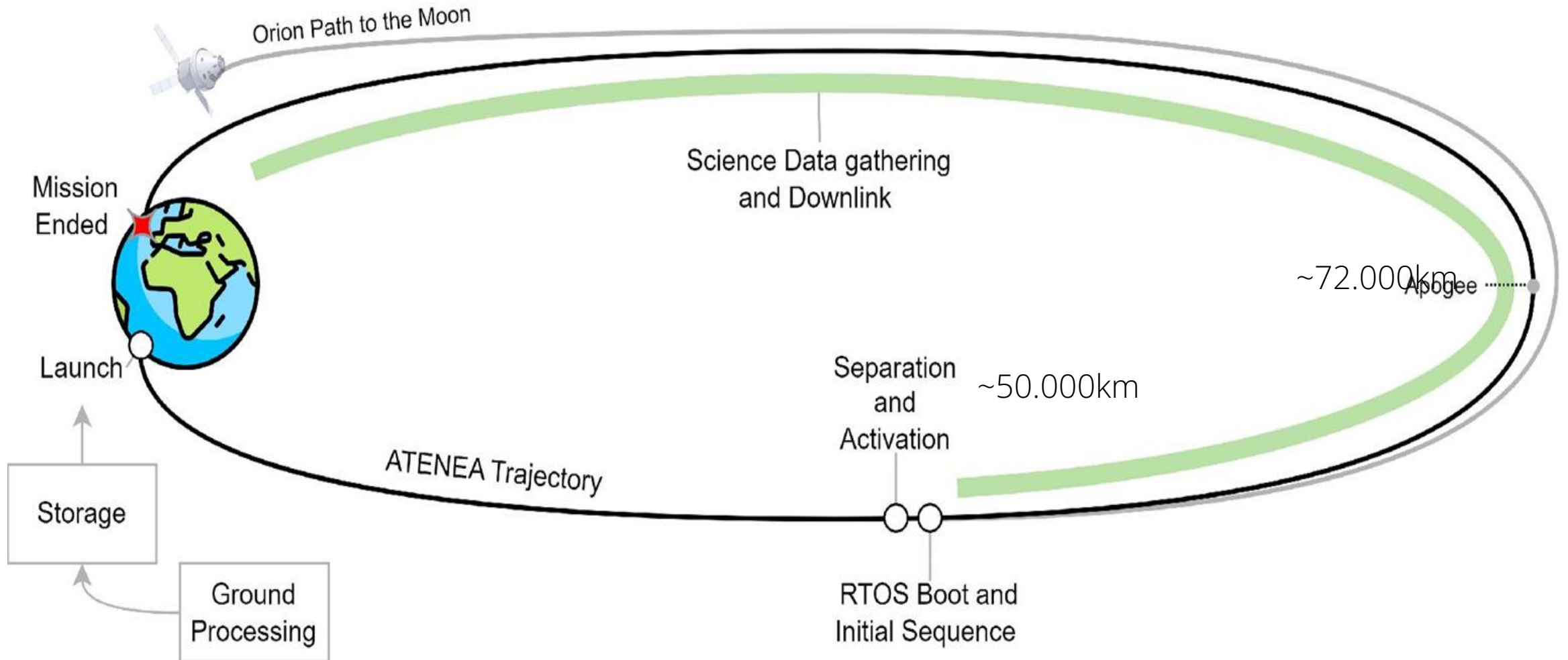
All four **Artemis II CubeSats** are provided by countries that are signatories of the **Artemis Accords**.



CubeSat	Space Agency
1  ATENEA	Argentina National Space Activities Commission (CONAE)
2  K-RadCube	Korea AeroSpace Administration (KASA)
3  Space Weather CubeSat-1	Saudi Space Agency (SSA)
4  TACHELES	German Aerospace Center (DLR)







1. Improve :

- **International cooperation**
- **low-cost subsystems**
- **crewed missions.**

1. Agile methodologies to validate our multidisciplinary team structures and our ALT processes for **CubeSat platforms.**

1. Technical main goals:

- Validate a low-cost, long-range **communication system.**
- Evaluate **navigation** signals above standard GNSS altitudes.
- Collect critical scientific data with our on-board **radiation sensors** and **silicon photomultipliers.**

PSRP I
(PDR)

PSRP II
(CDR)

PSRP III
(QR)

**Hazards
identification,
controls and
verifications**

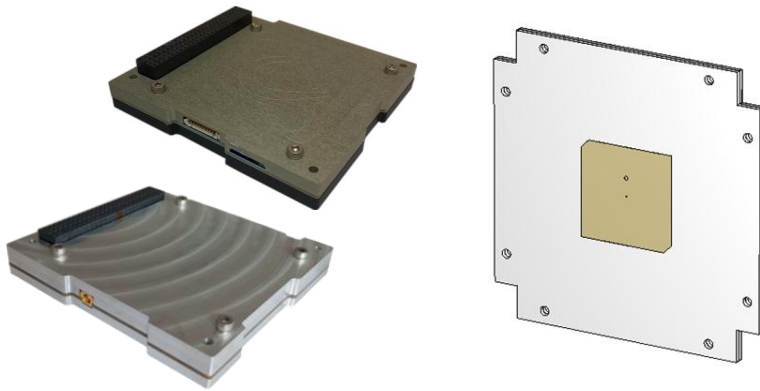
- Premature activation
- Primary structure failure
- Battery rupture/leak
- Ignition of flammable materials/atmospheres
- Inadequate materials/processes (contamination)
- Electromagnetic susceptibility/emissions

Systems Engineering

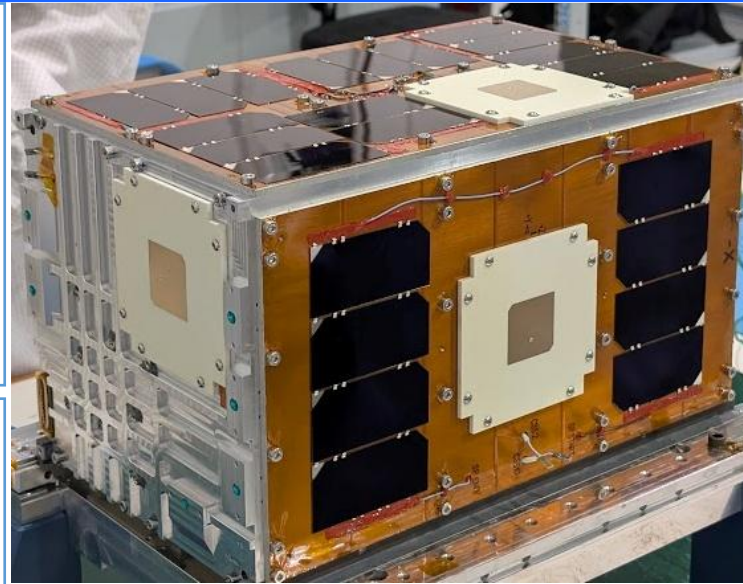


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C&DH and S-Band COMMS



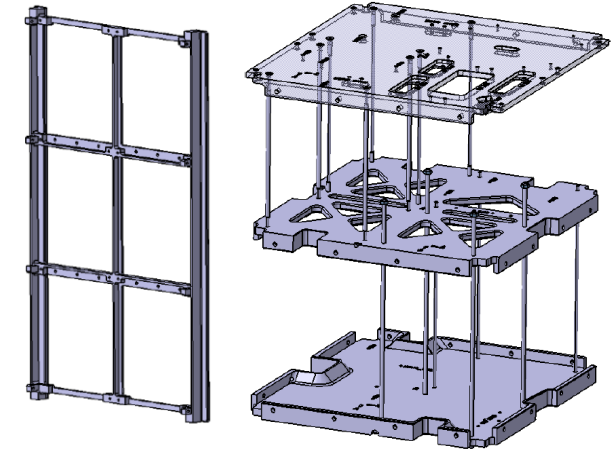
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Structure



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Harness



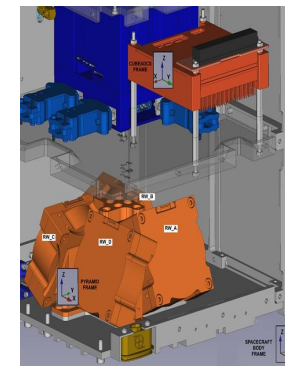
Solar panels



Battery charger



ADCS (COTS)



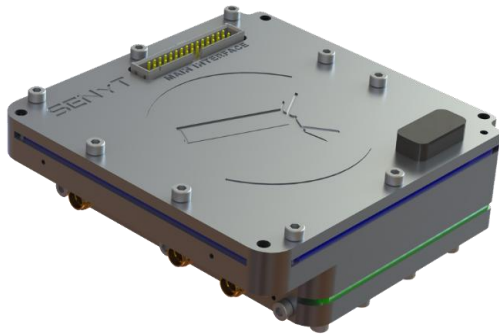
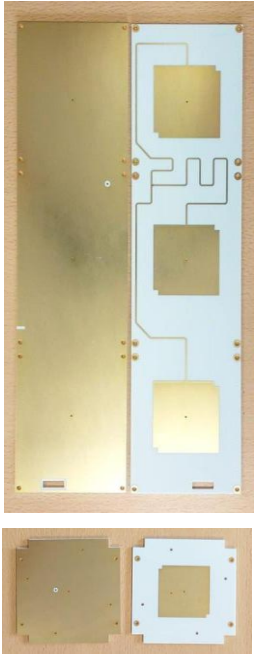
CUBESPACE

Power (COTS)

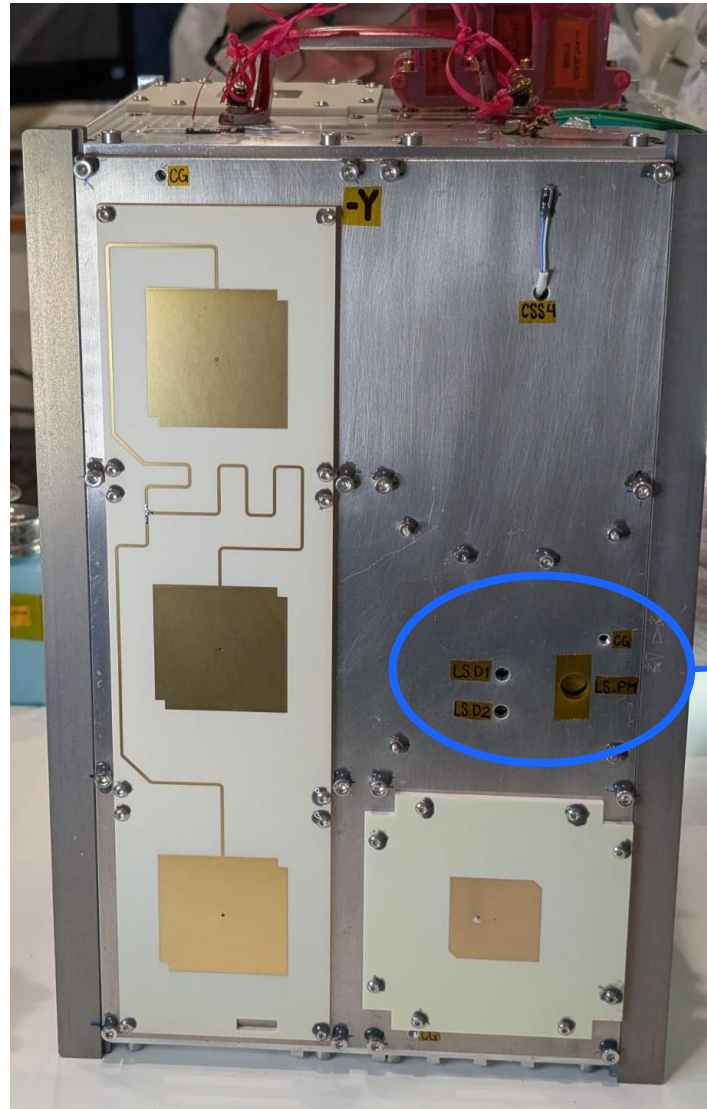


ENDUROSAT

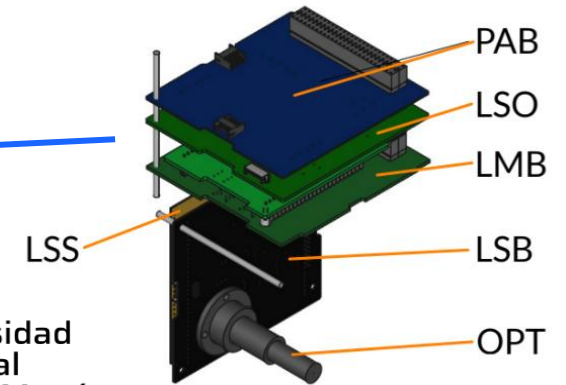
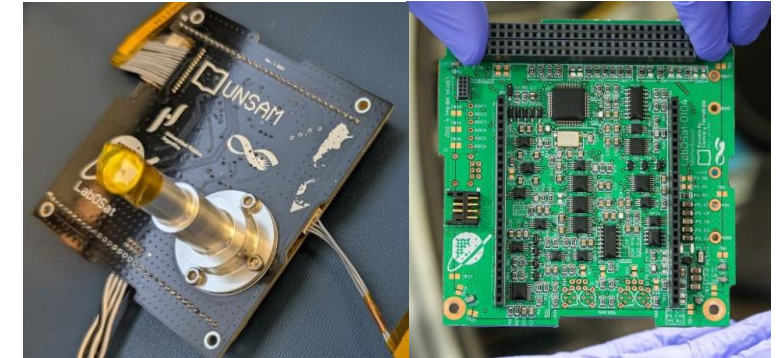
GNSS Receiver and Antennas



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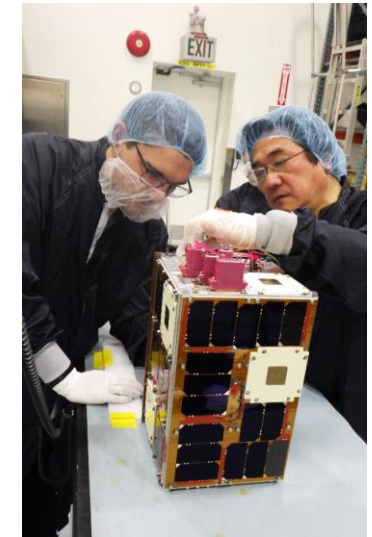
LabOSat Controller and SiPM



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Dosimeters





AIT Stage 0/1:
FlatSAT
iterative
incremental AIT

AIT Stage 2:
PFM interactive
incremental AIT

AIT Stage 3:
Environmental
Tests

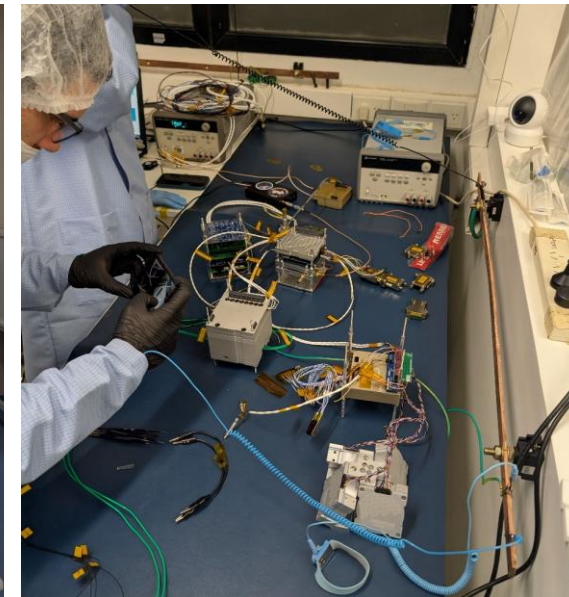
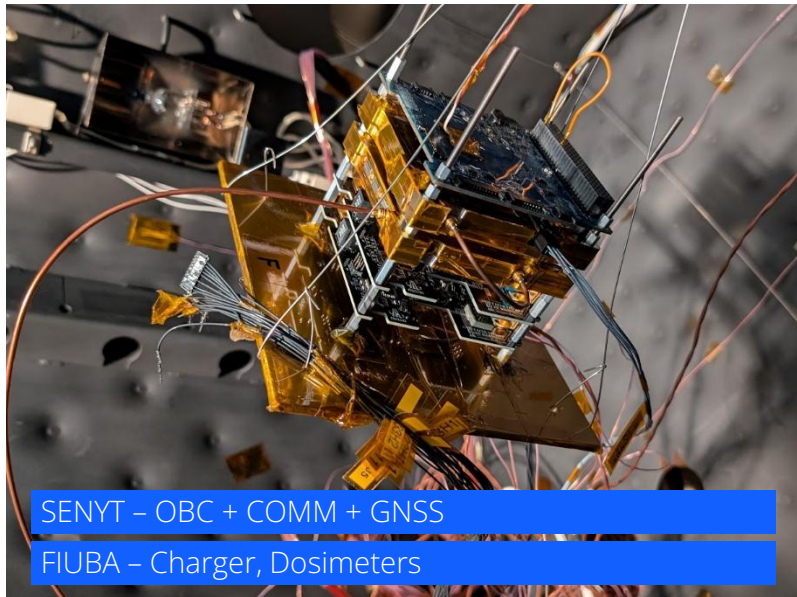
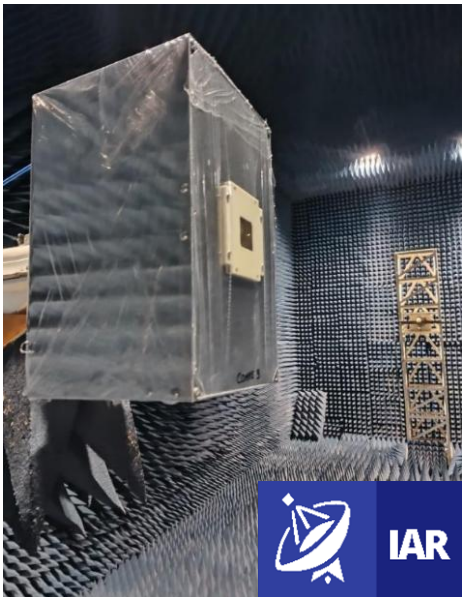
AIT Stage 4:
Ground
Processing

Buenos Aires

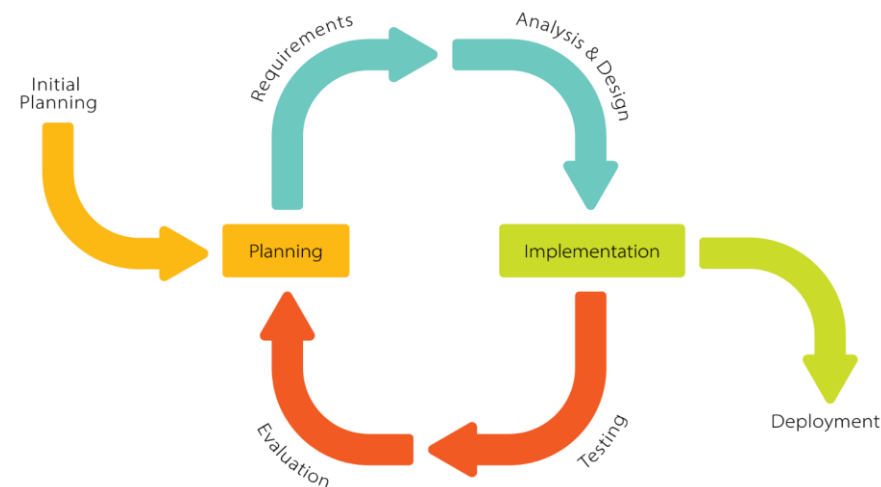
Córdoba (CBA)

EEUU

AIT – Stage 0/1: FlatSat



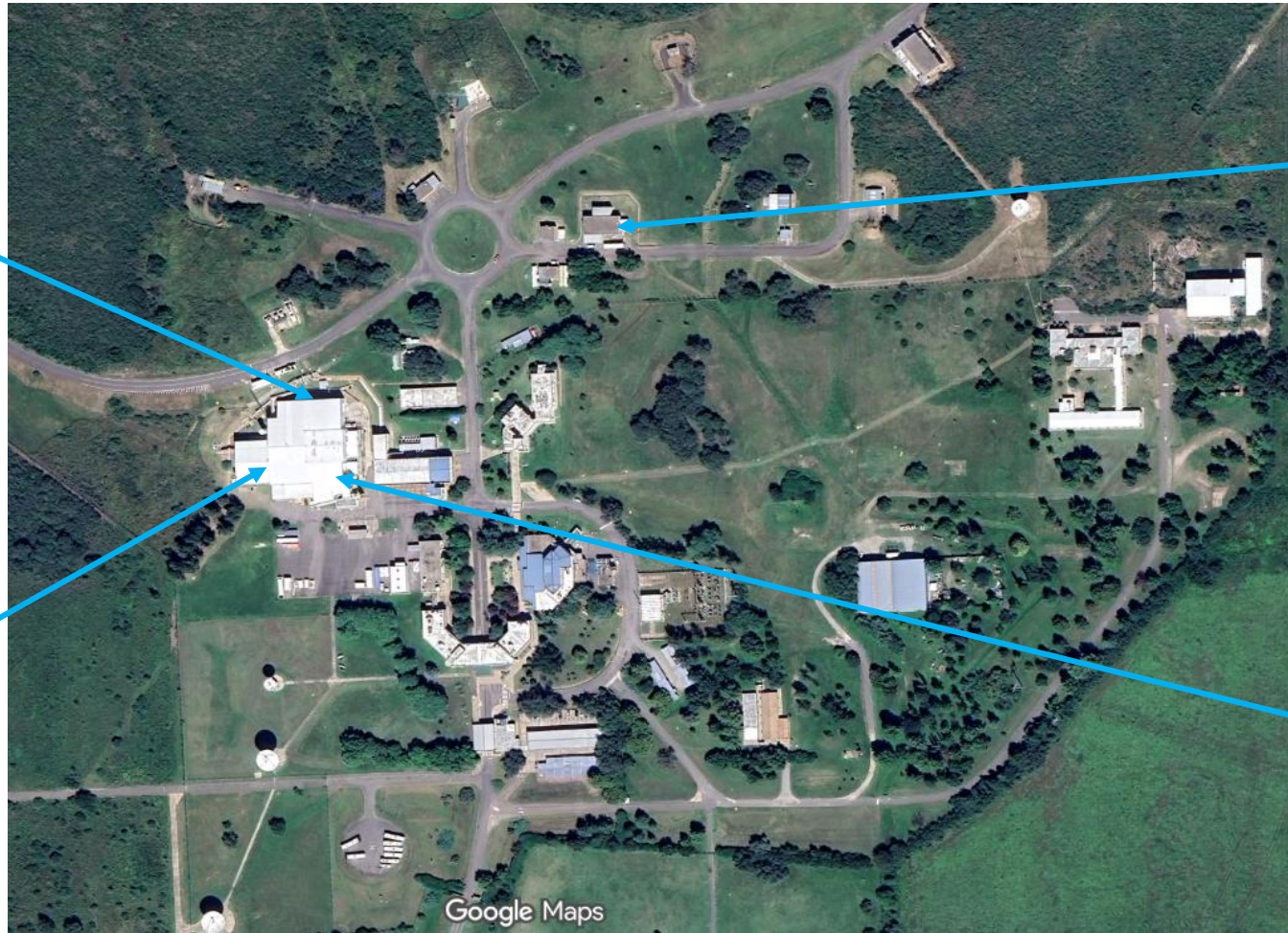
Iterative incremental process
(coming back and forward)



AIT – Stage 2 & 3



**Integration Clean Room
10.000**



**Centro Espacial Teófilo Tabanera
(CETT)**

Falda del Cañete, Córdoba, Argentina



LaCEM
(Laboratorio de
Compatibilidad Electromagnética)



LET (Laboratorio de Ensayos Termicos)

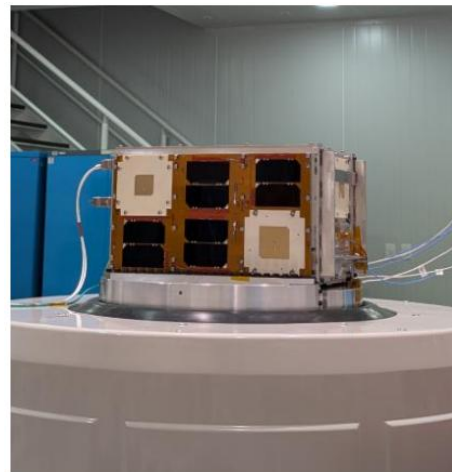
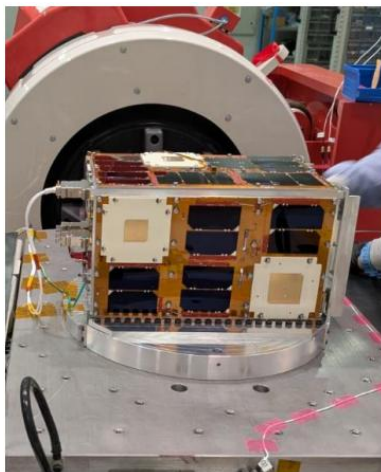
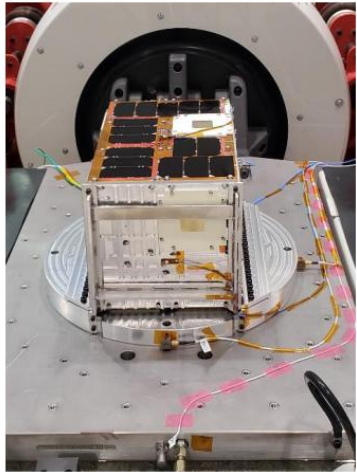


LEM (Laboratorio de Ensayos Mecanicos)



Integration Clean Room 10.000

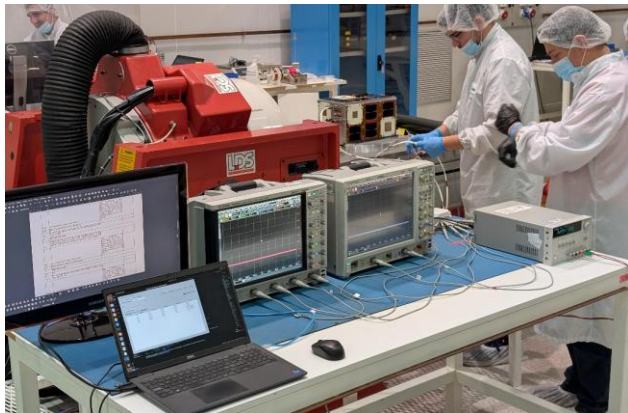
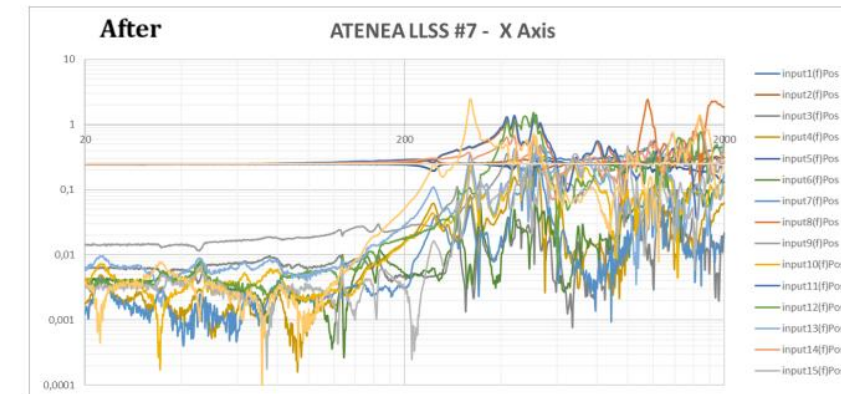
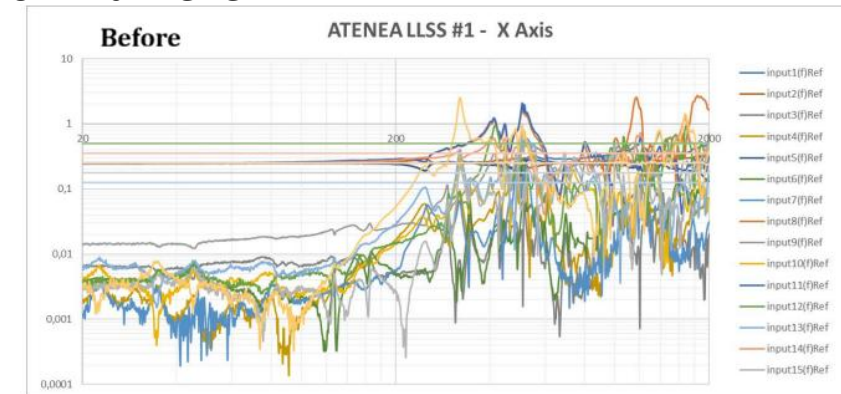
AIT – Stage 3: Environmental (Vibration)



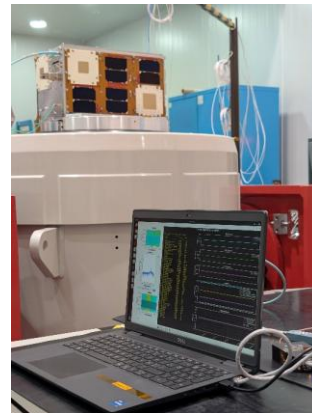
Vibration Test in Z, X and Y axis

In each Axis:

- LLSS (Low Level Sine Sweep)
- Sine Burst Full level
- Random Full level



Switches premature activation



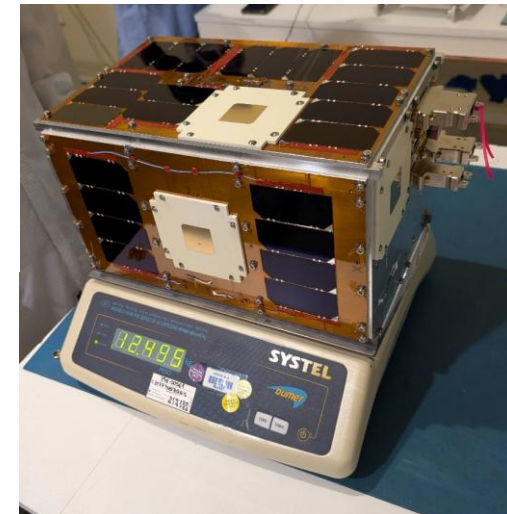
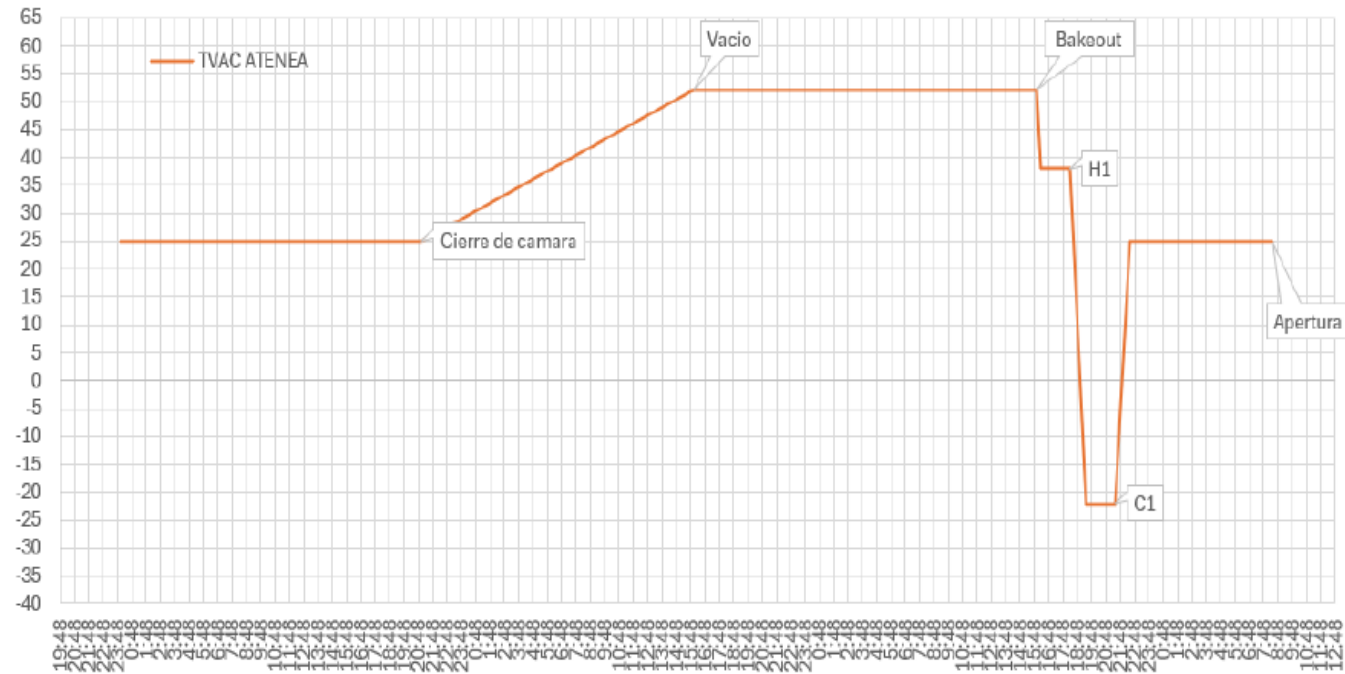
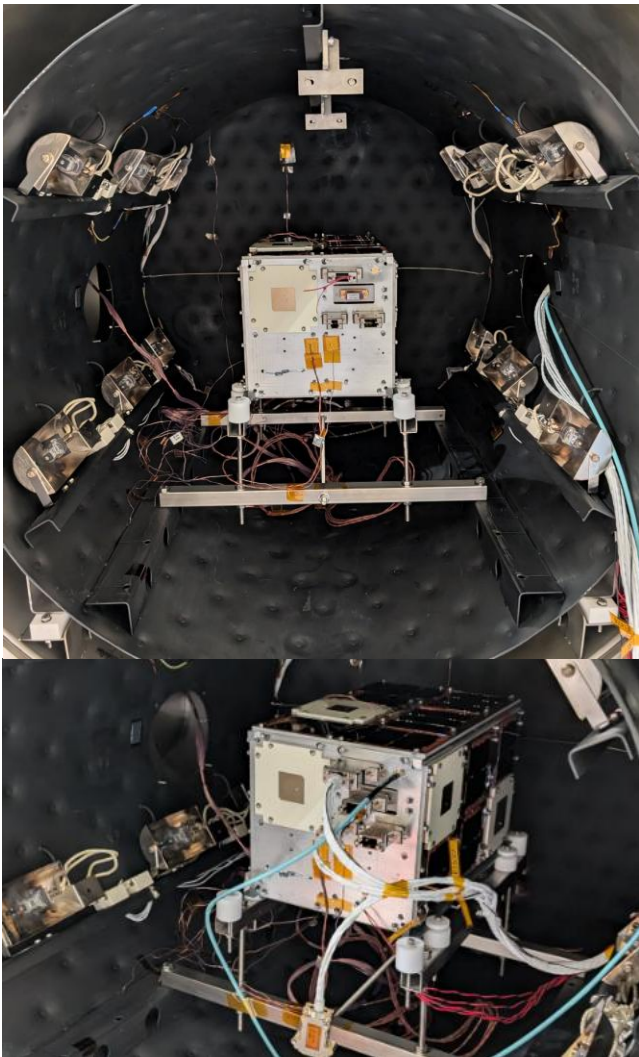
Functional Testing



Physical Measurements

LEM (Laboratorio de Ensayos Mecánicos)

AIT – Stage 3: Environmental (TVAC)



CVCM (Collected Volatile Condensable Material)

TML (Total Mass Loss)

LET (Laboratorio de Ensayos Termicos)

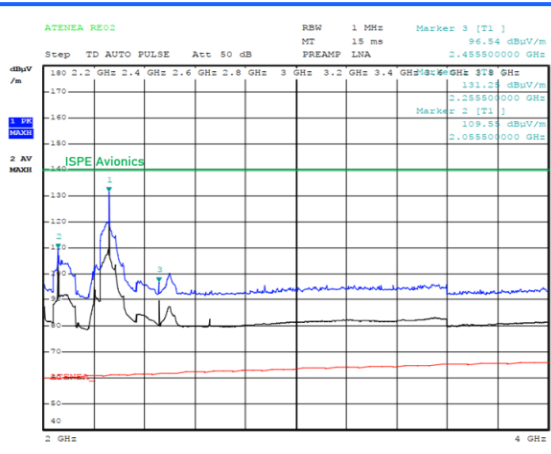
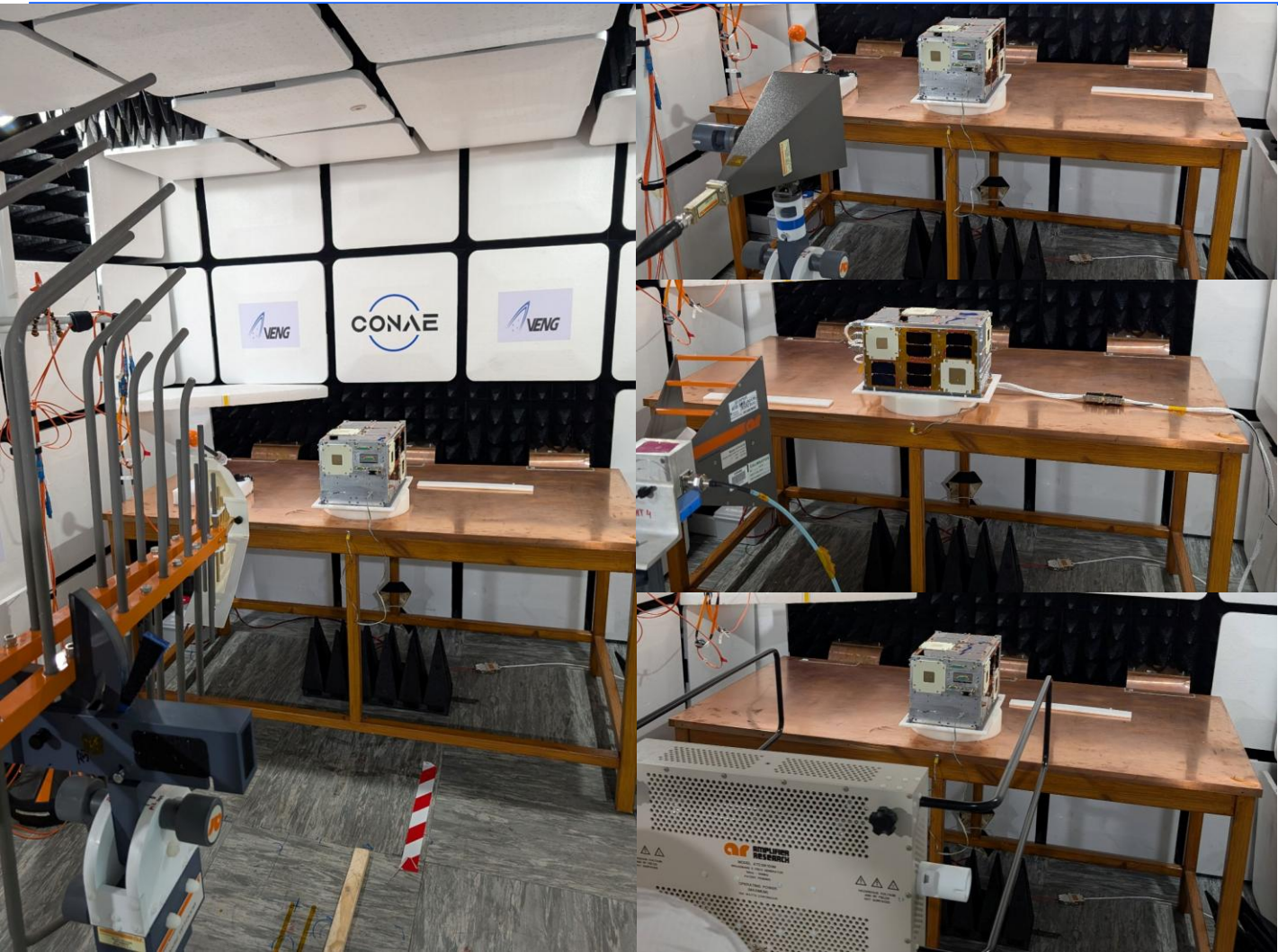
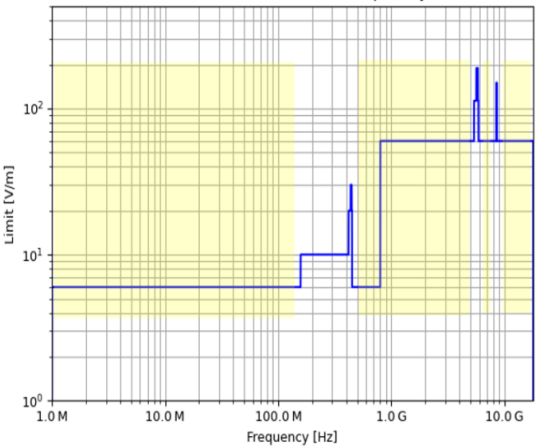


Figure 5.7.1.b: +Z Face Scan – Vertical Polarization (DUT ON)

Radiated Emissions

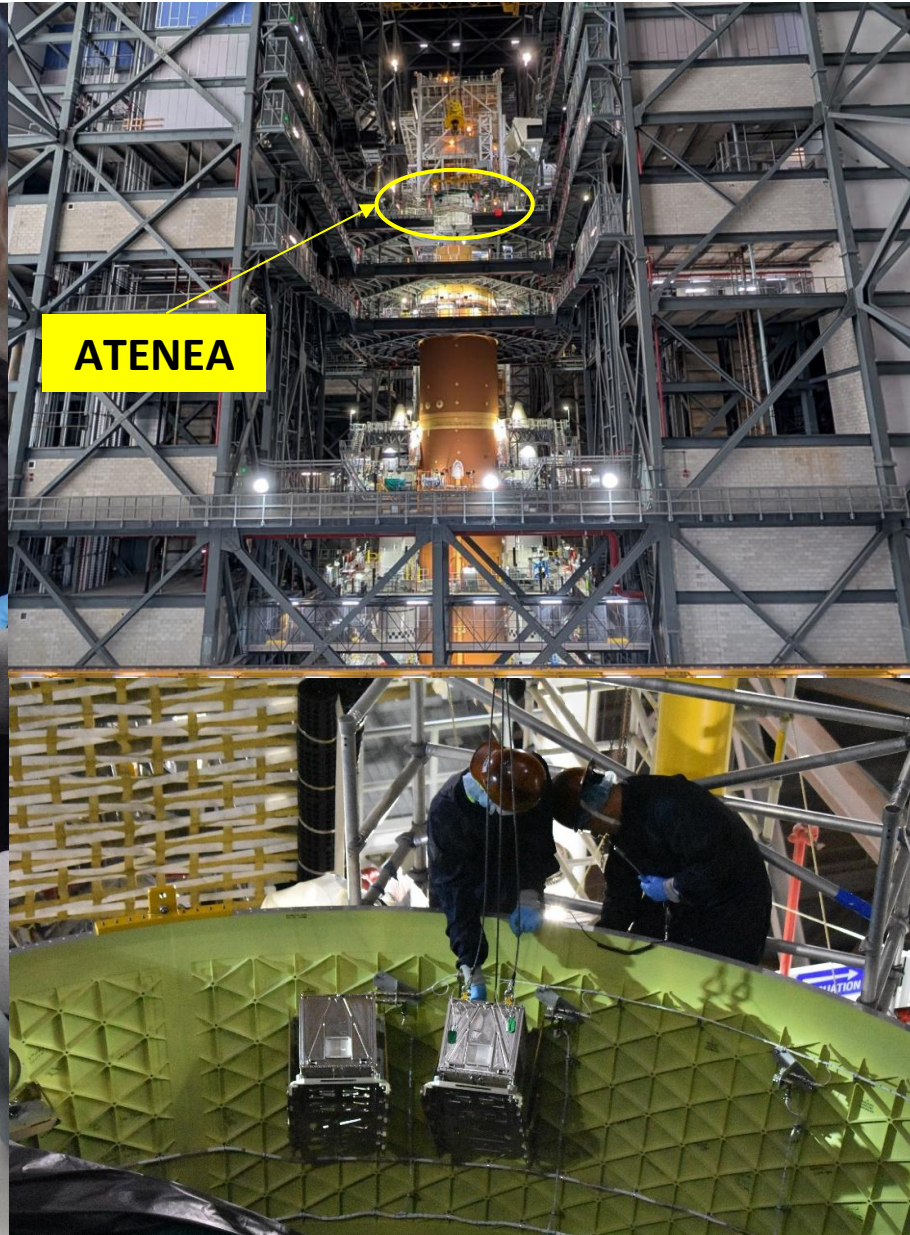
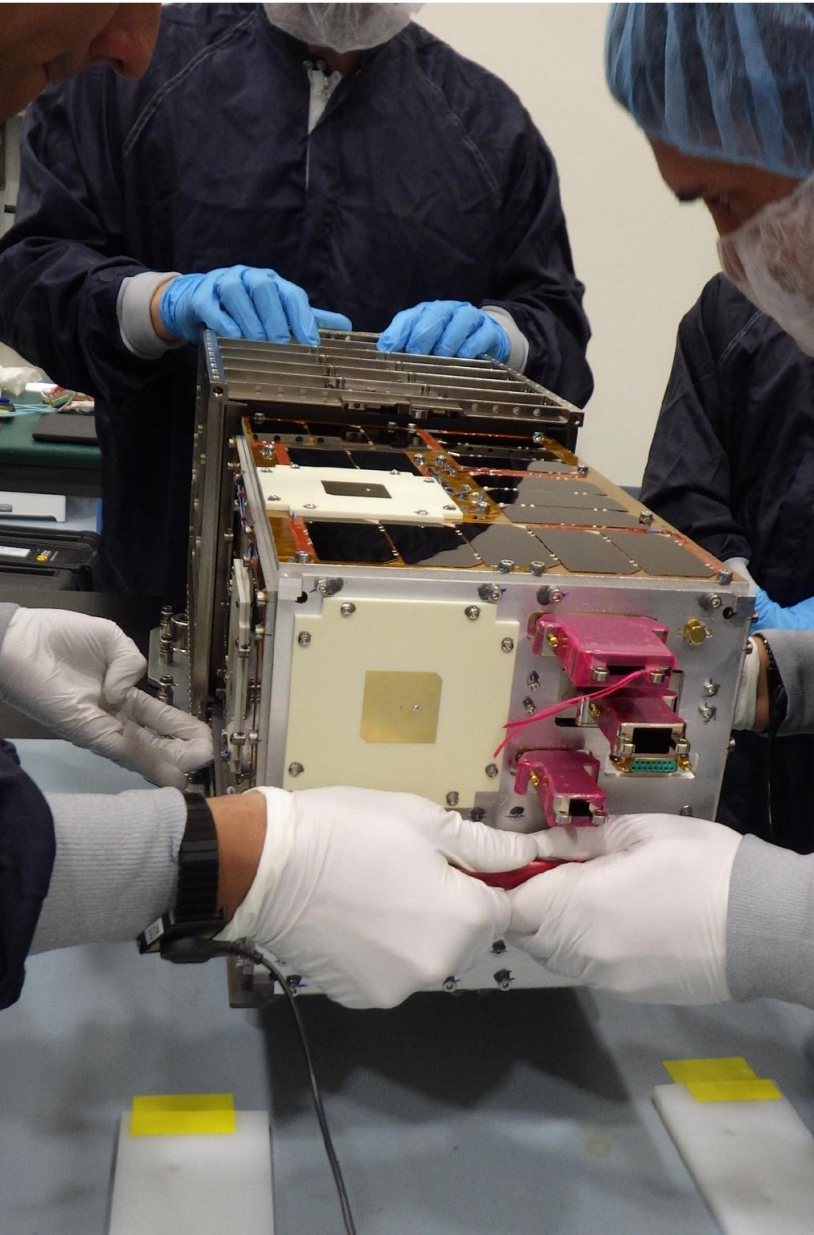


Radiated Susceptibility

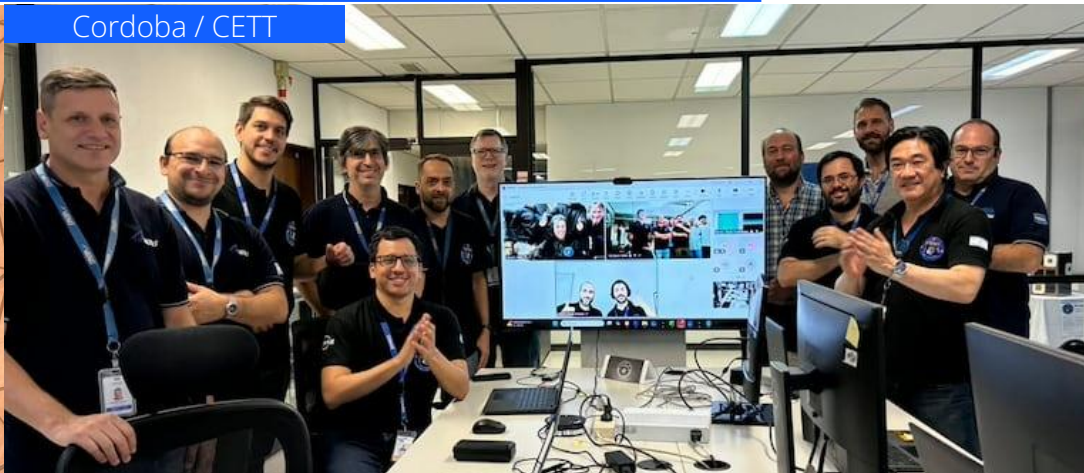
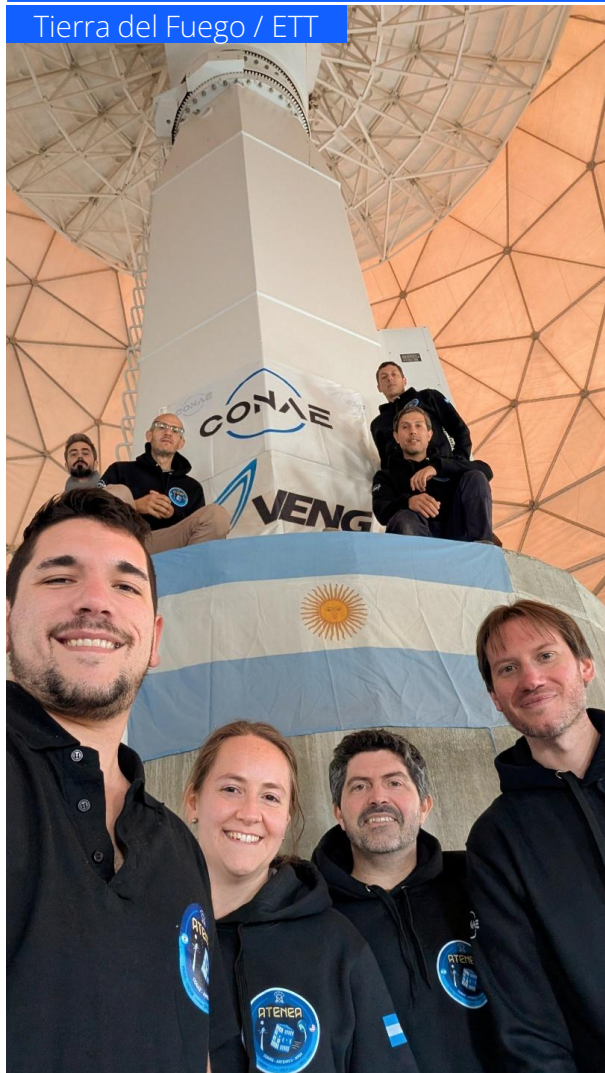
LaCEM
(Laboratorio de
Compatibilidad Electromagnética)



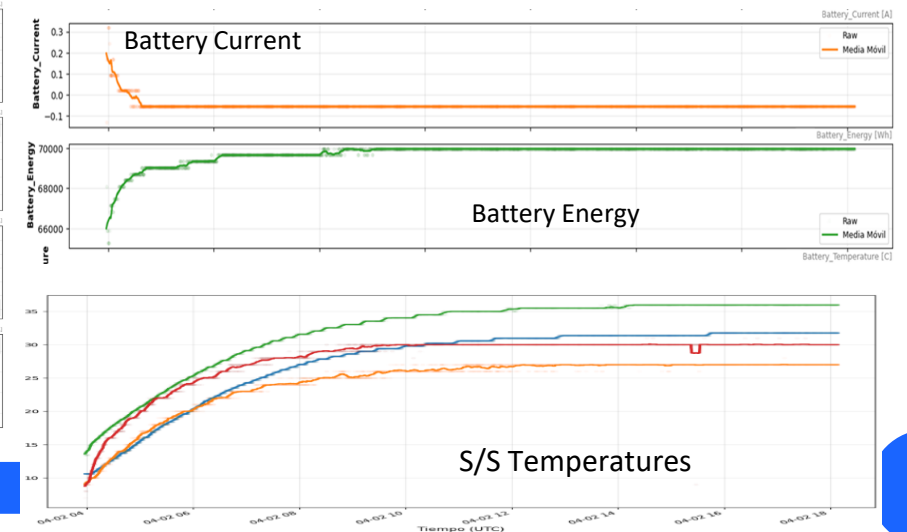
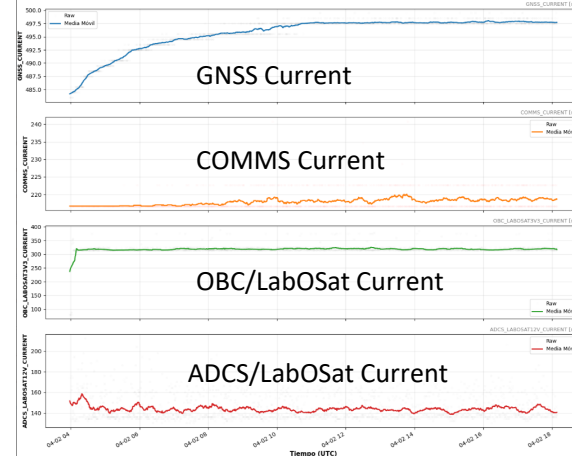
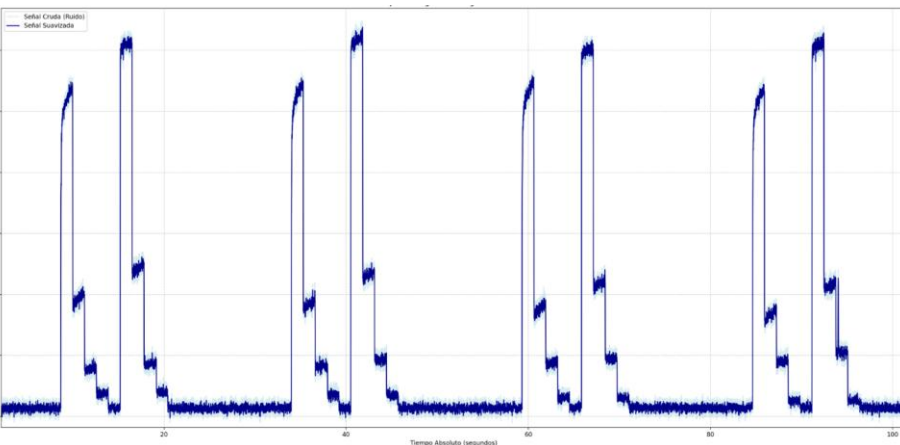
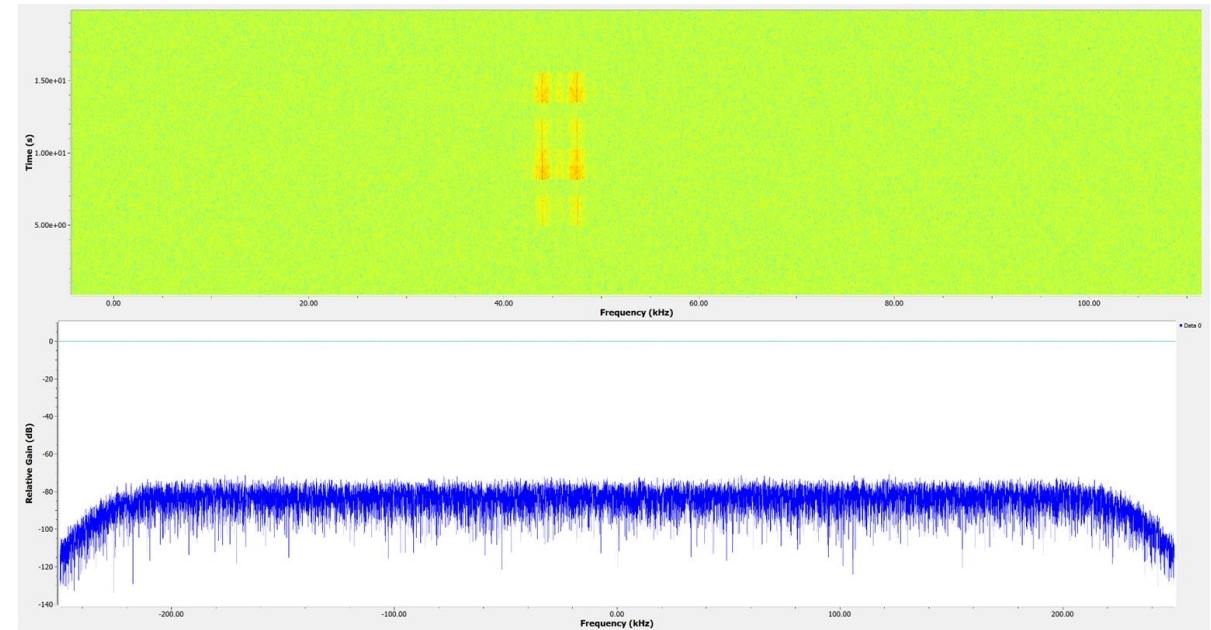
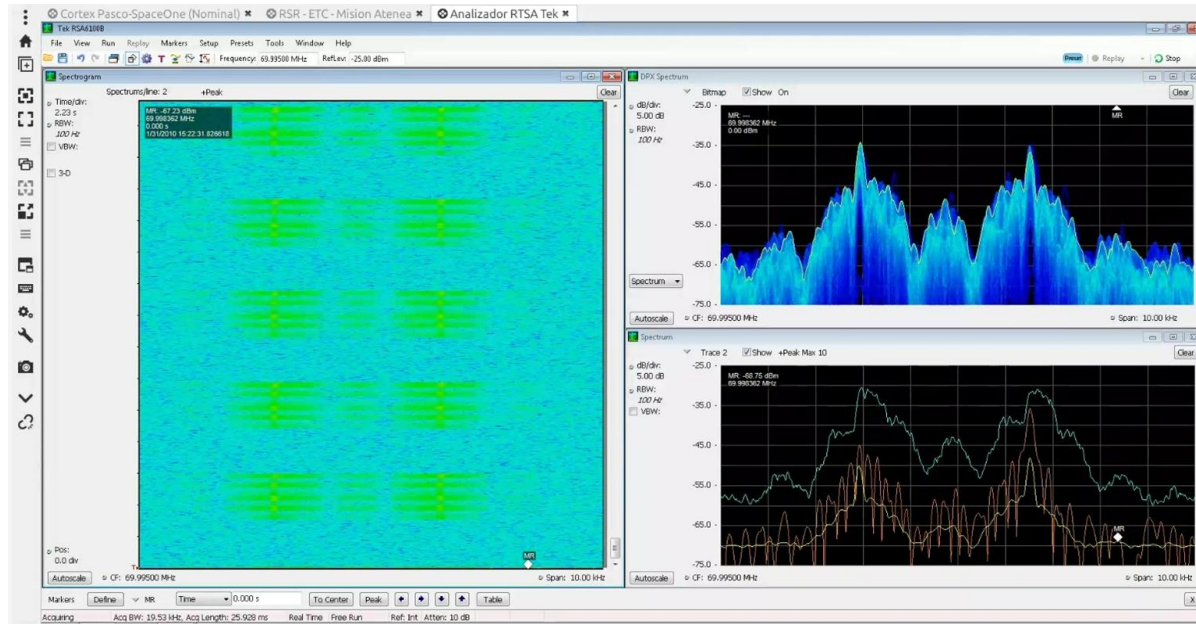
AIT – Stage 4: KSC Ground Processing



Launch, Operations & Results



April 1st, 2026

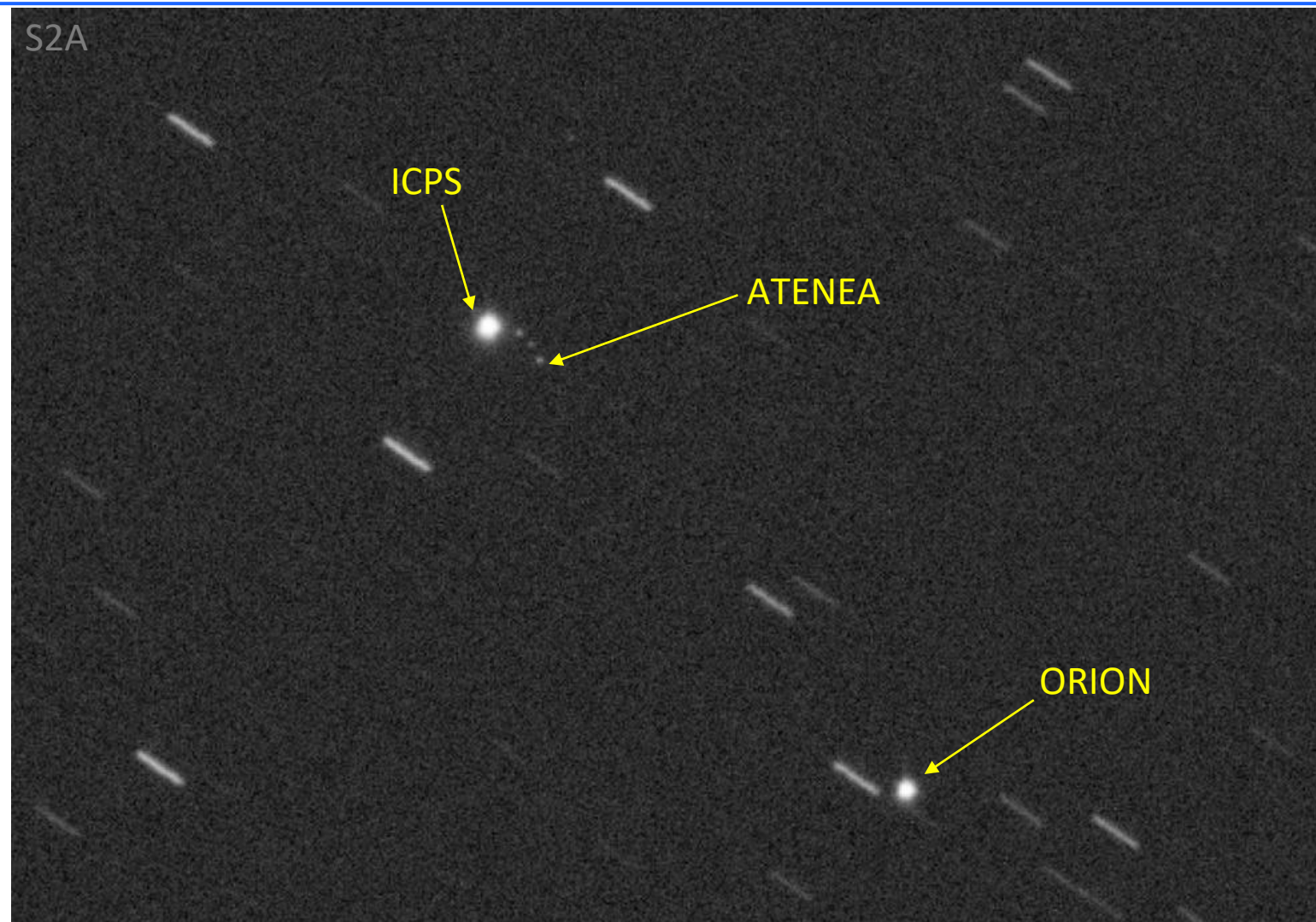
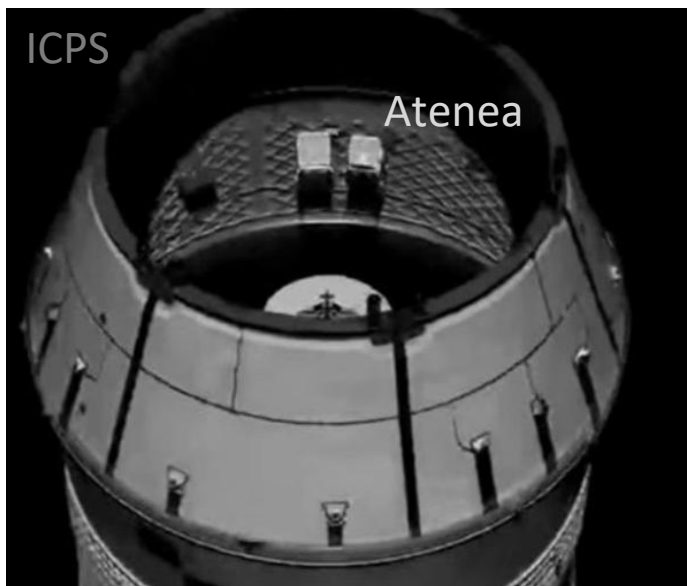


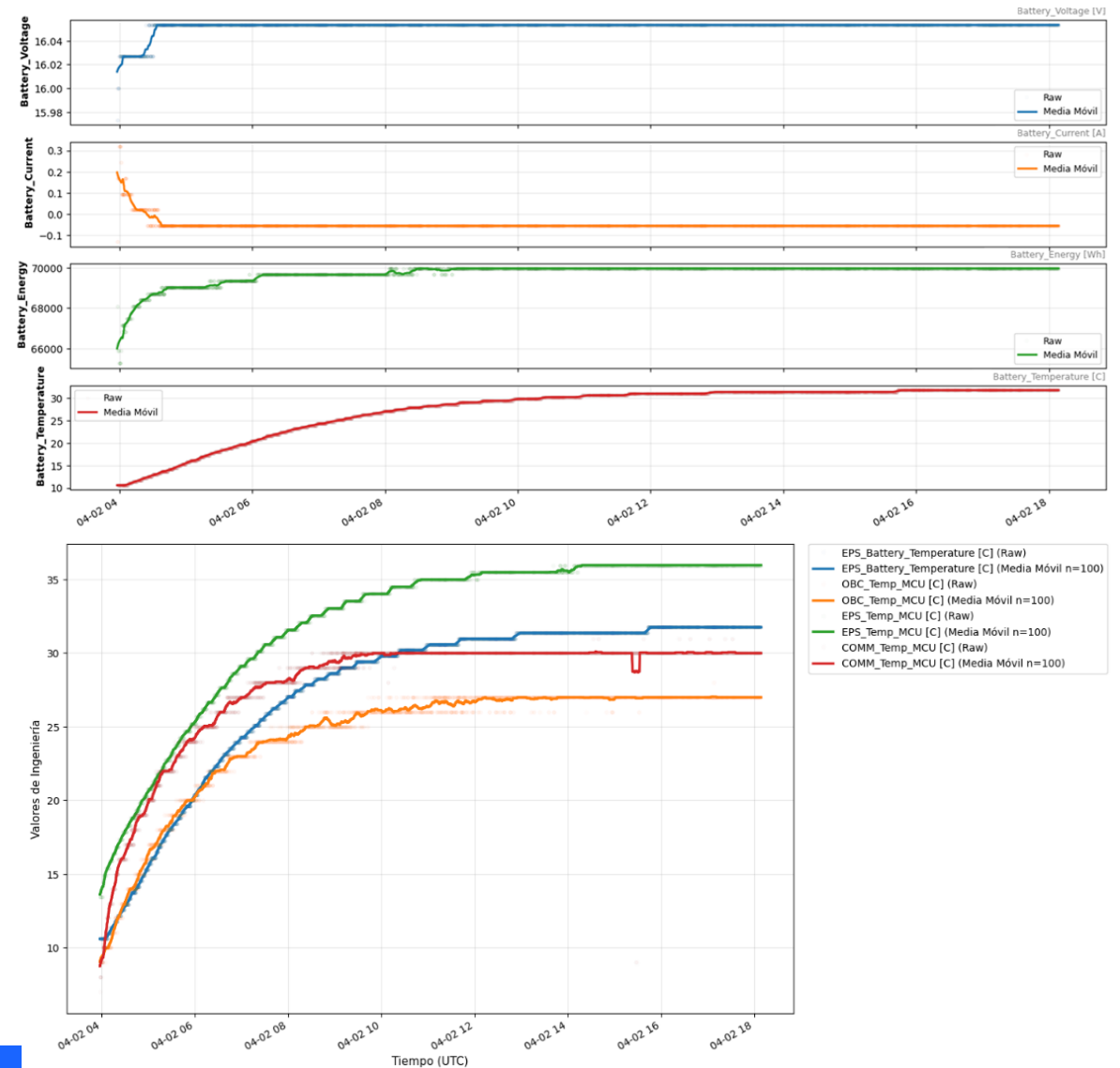
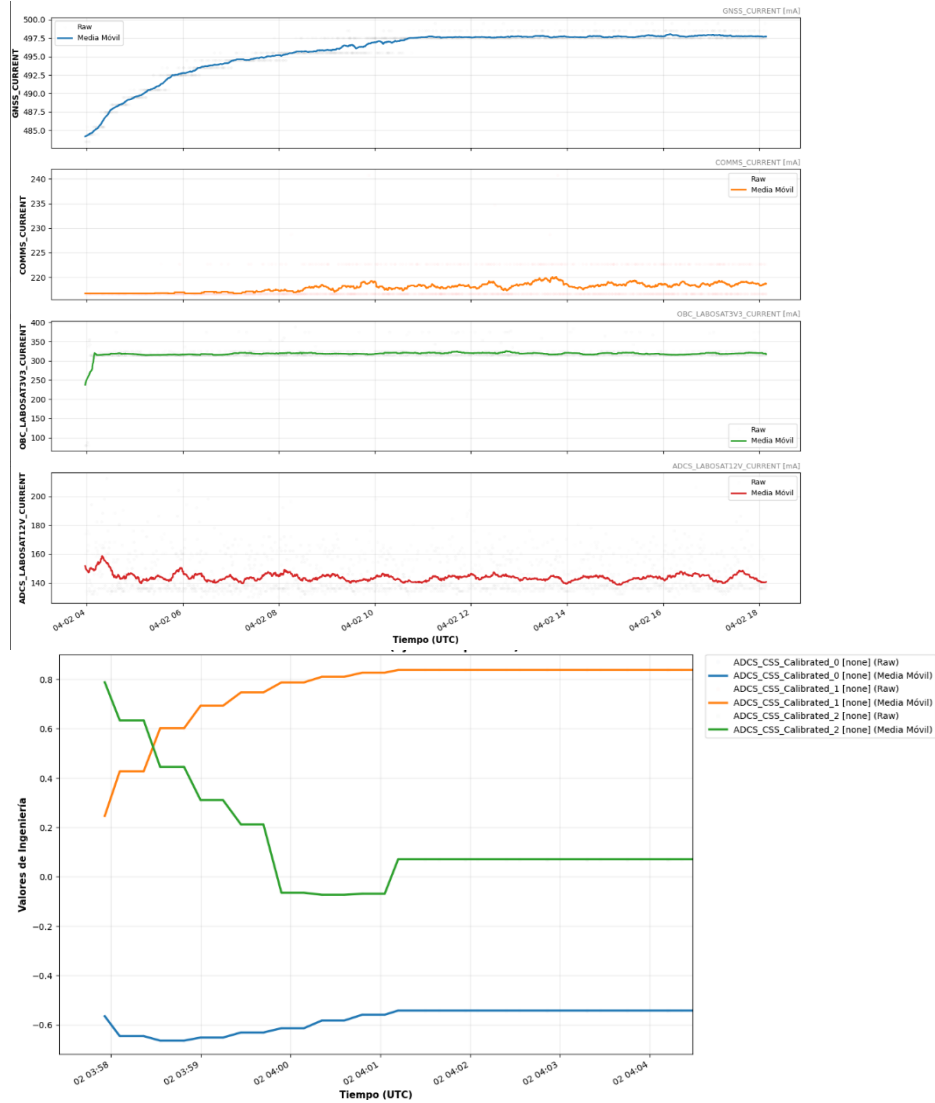
Attitude stabilized with solar panels oriented to sun

The background of the slide is a high-resolution photograph of the Earth as seen from the Moon's surface. The Earth is a large, bright blue and white sphere, partially obscured by the dark, cratered horizon of the Moon in the foreground. The Moon's surface is covered in numerous craters of various sizes, and the overall scene is set against the blackness of space.

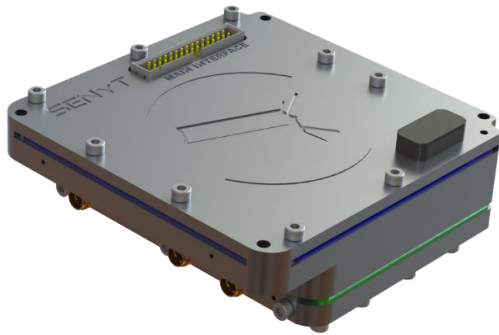
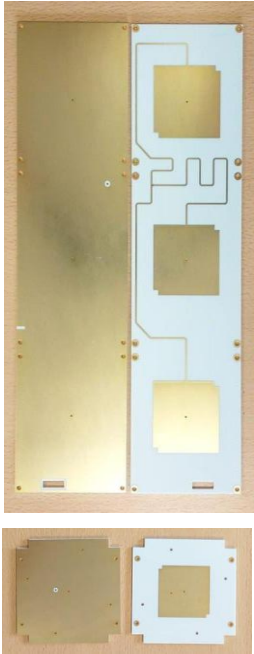
Thank you!

BACKUP SLIDES

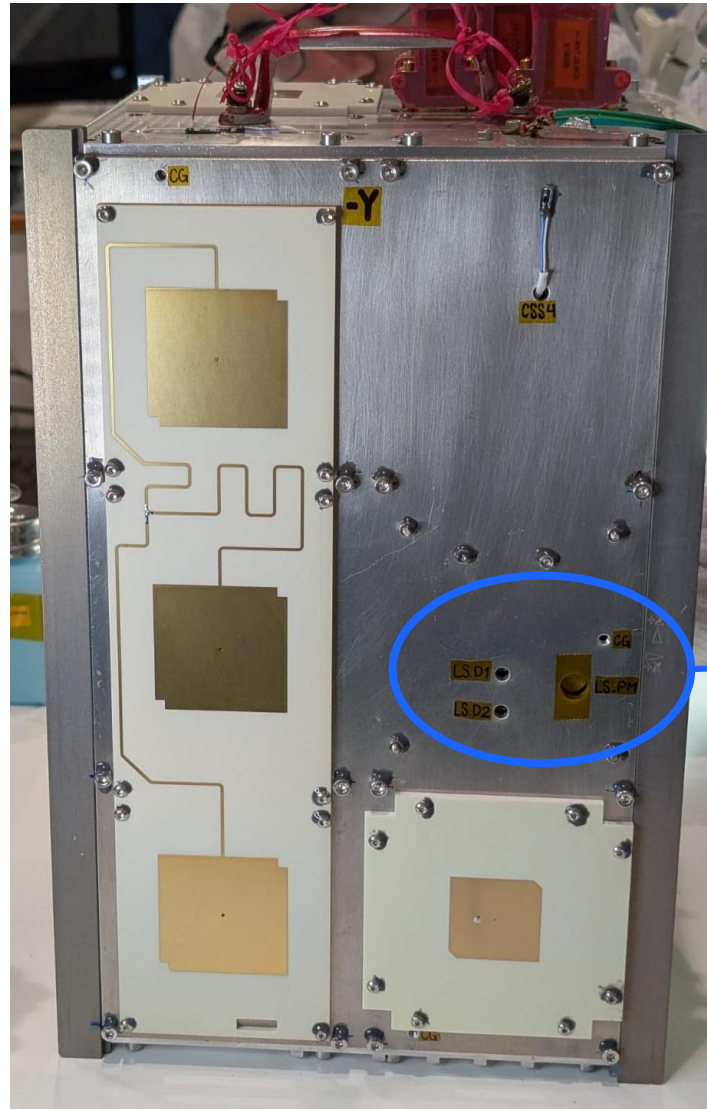




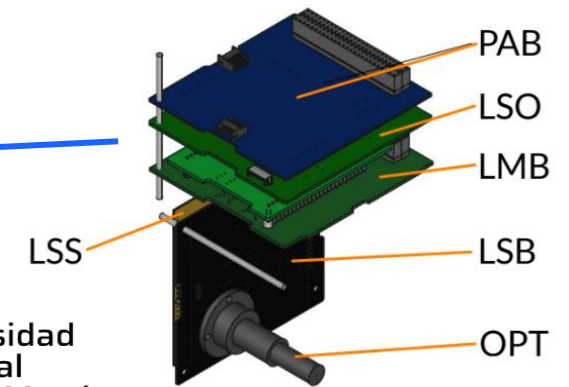
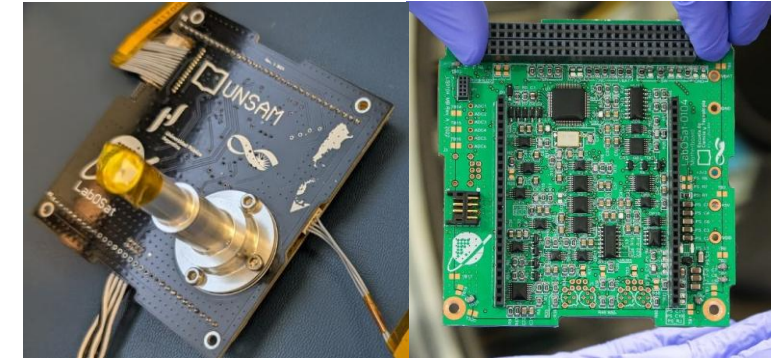
GNSS Receiver and Antennas



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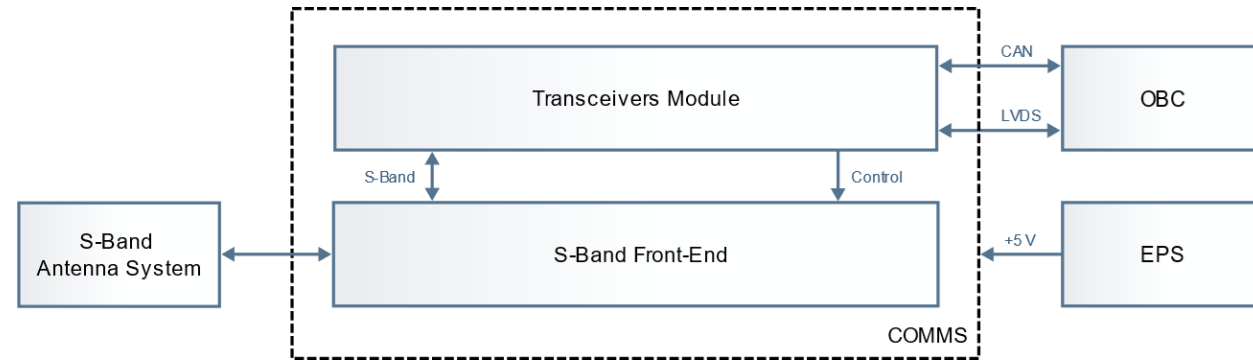
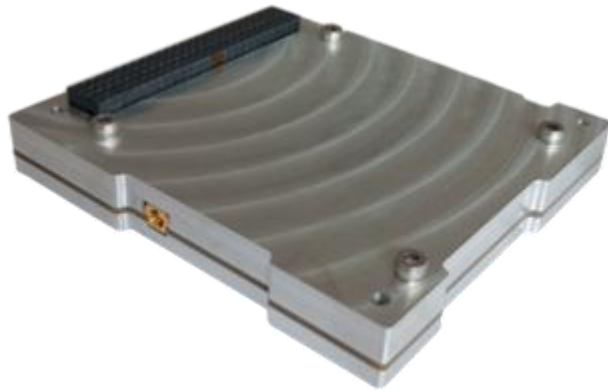
LabOSat Controller and SiPM



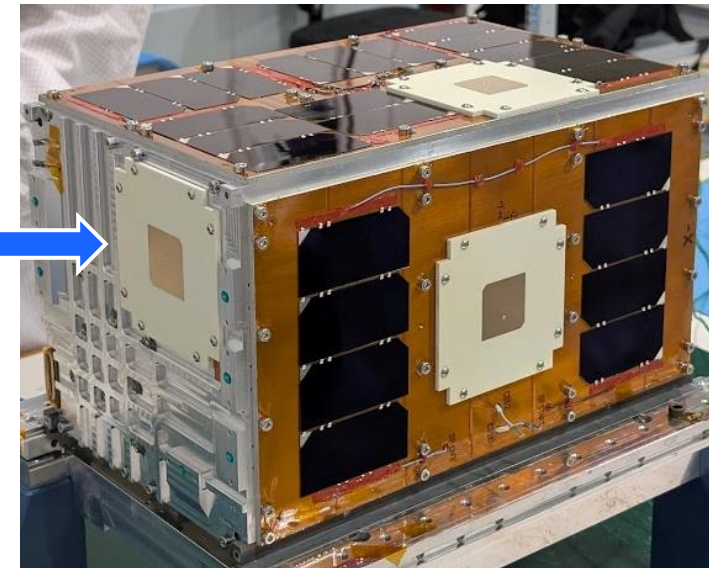
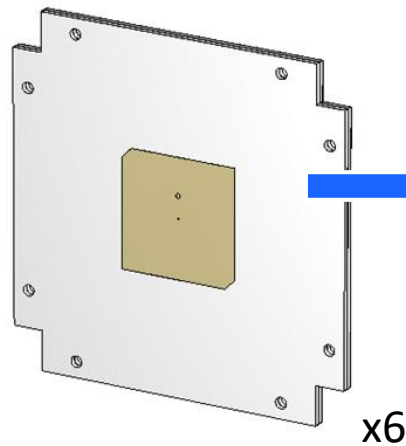
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Dosimeters

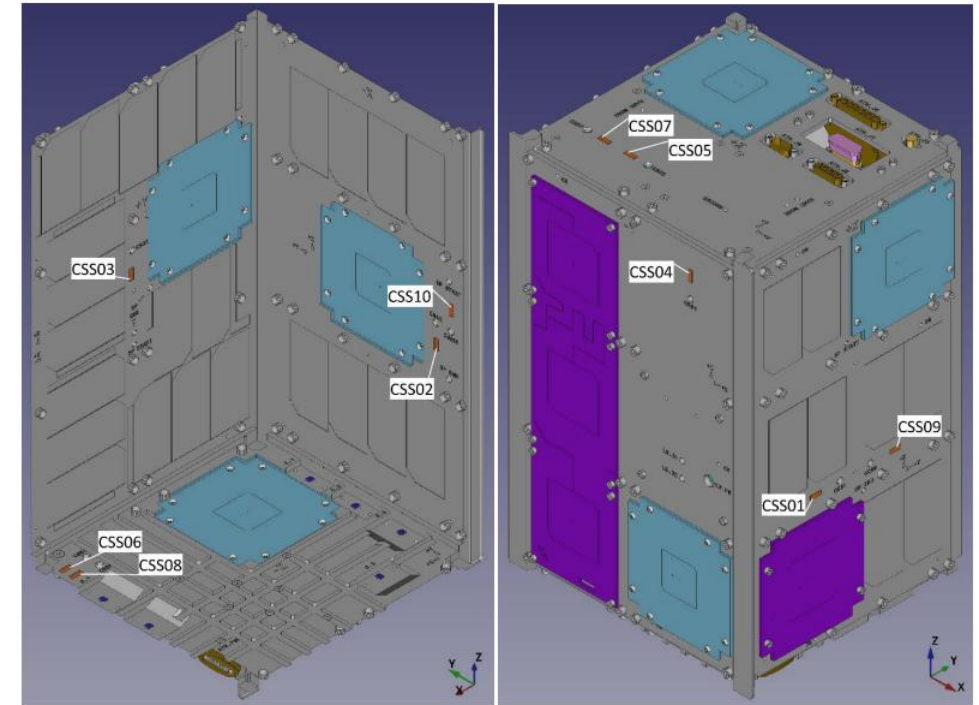
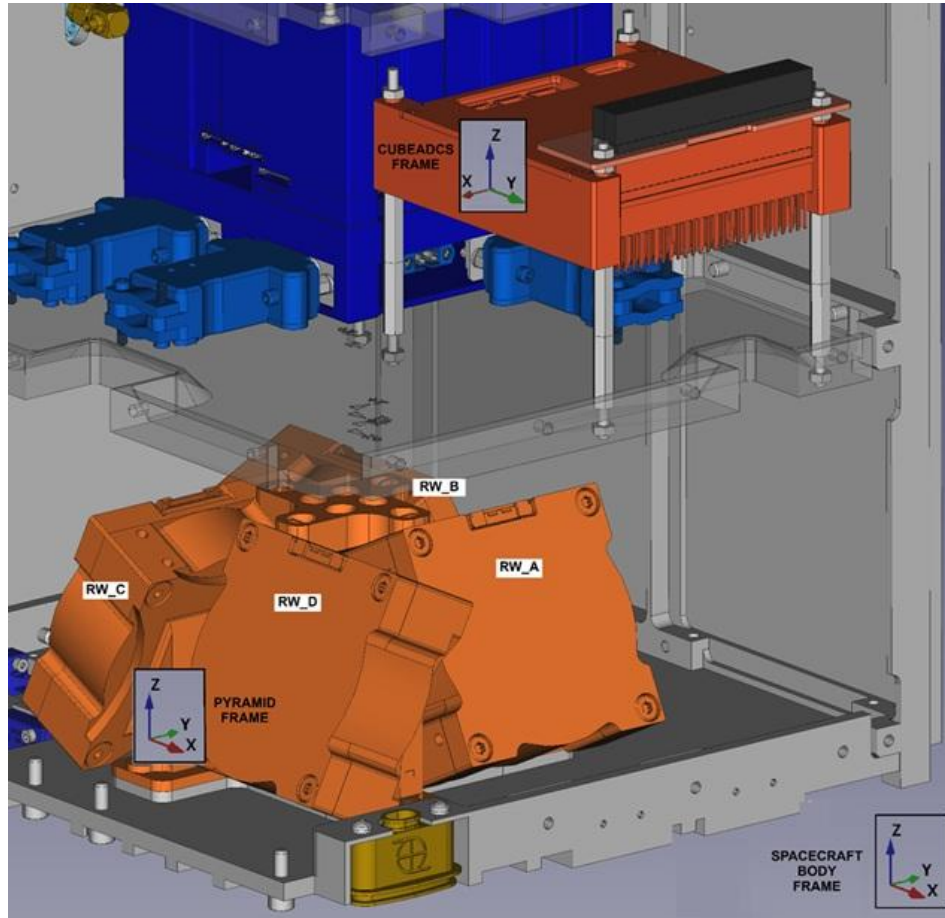




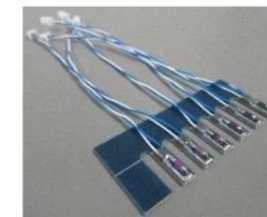
Parameter	Value
Central Frequency	2255.5 MHz
Modulation scheme	2-FSK
Bandwidth	6000 Hz
Bit Rate	1200 bps
Codification	
RF output power	
Antenna gain	2 dB
Polarization	LHCP



Capable of communication at 72000km!



Coarse Sun Sensors (Sub-System)

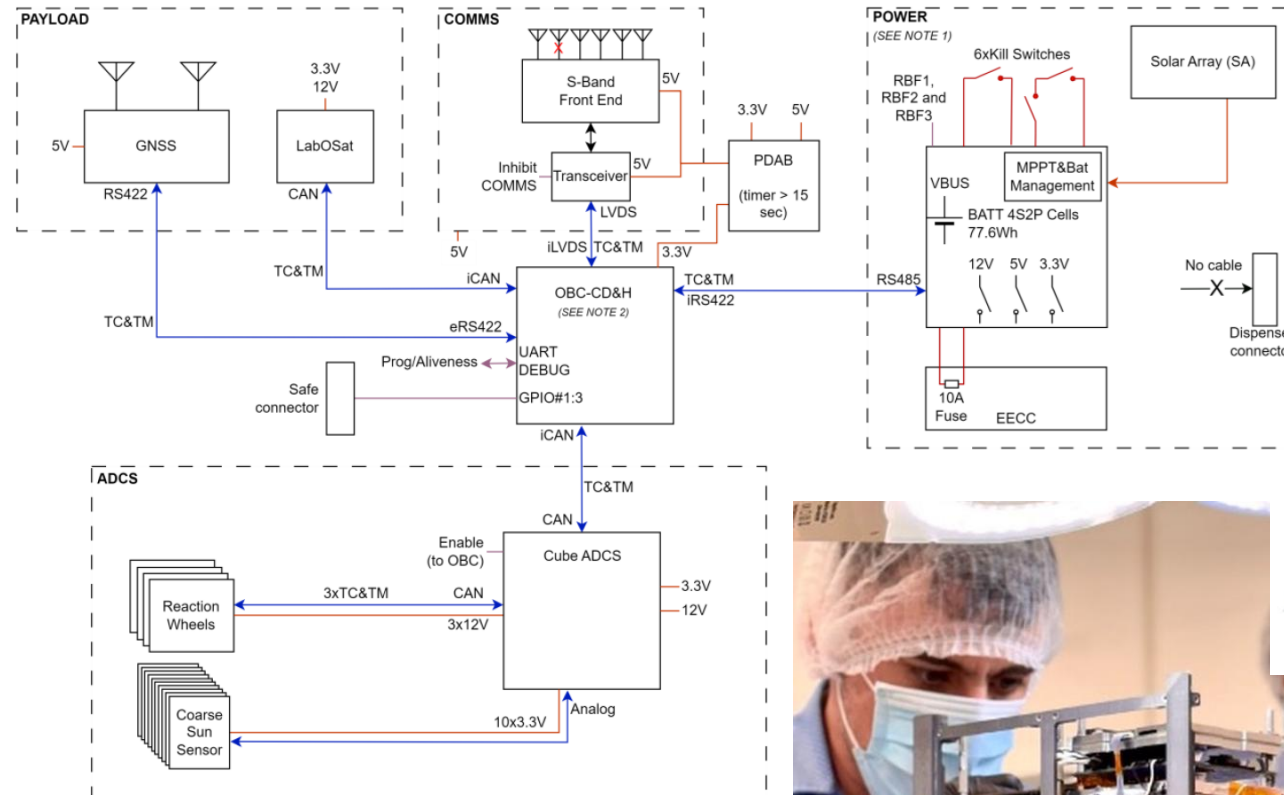




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SENYT
Sistemas Electrónicos de Navegación y Telecomunicaciones



Color legend:
 ■ ARM pins
 ■ Communication interface
 ■ Power rails
 ■ Debug link

