

23rd IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)  
Small Space Science Missions (2)

Author: Dr. Lorenzo Arena

University of Rome "La Sapienza", Italy, lorenzo.arena@uniroma1.it

Dr. Tommaso Cardona

University of Rome "La Sapienza", Italy, tommaso.cardona@gmail.com

Dr. Gioacchino Scire

University of Rome "La Sapienza", Italy, scire.gio@gmail.com

Mr. Armando Grossi

University of Rome "La Sapienza", Italy, armandogrossi91@gmail.com

Mr. Federico Curiano

University of Rome "La Sapienza", Italy, fcuriano@gmail.com

INTEGRATION AND GROUND TEST CAMPAIGN RESULTS OF URSA MAIOR

**Abstract**

URSA MAIOR (University of Rome la Sapienza Micro Attitude In Orbit testing) is a 3U CubeSat designed in the framework of QB50, an FP7 Project led by the Von Karman Institute for Fluid Dynamics, with the aim to perform multi-point in-situ measurements in the lower thermosphere, which is the least explored layer of the atmosphere. In particular, URSA MAIOR carries on-board as the main payload the multi-Needle Langmuir Probes (mNLP) science unit, provided by University of Oslo. The CubeSat has been developed at S5LAB (Sapienza Space Systems and Space Surveillance Laboratory) by PhD and Master students, supported by a staff of professors. It carries on-board, as secondary payloads, a cold-gas micro thruster experiment for nano-satellite attitude control, a deorbiting system based on a polymeric drag sail and cameras to take pictures. All the subsystems are in-house developed at S5LAB, with the exception of the ADCS and the radios. The CubeSat is expected to be launched on a sun-synchronous orbit of 480 km of altitude on July 2016. The paper describes the integration of the nano-satellite and the results of thermo-vacuum and vibration tests.