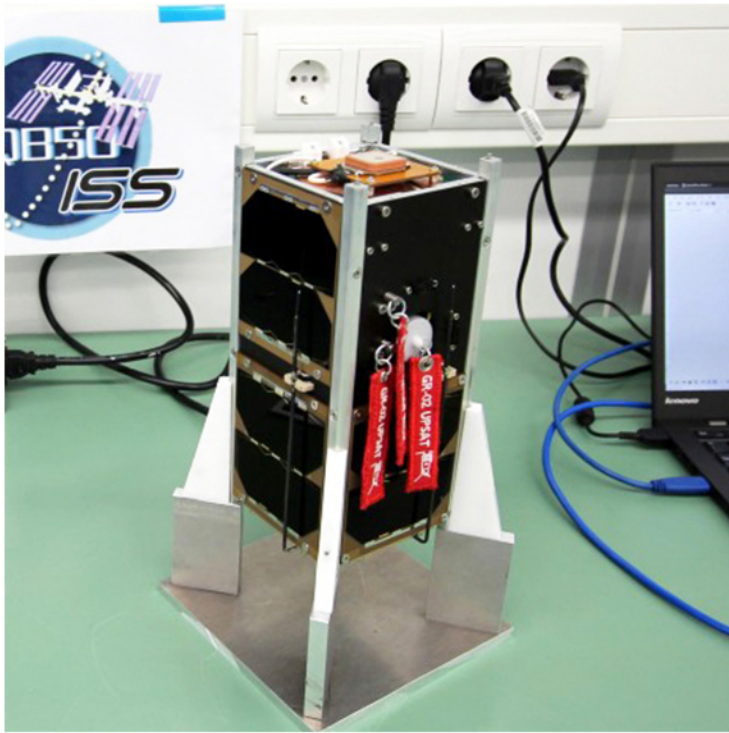


## UPSat



UPSat the first micro-satellite made in Greece and also the first satellite that its mechanical designs, software, and the vast majority of its components are freely available under open hardware and open software licenses. This makes it the first completely open source satellite ever launched.

The satellite was launched to the ISS on April 18, 2017 on the ATLAS V rocket.

UPSat is a nano-satellite with dimensions of 20cm x 10cm x 10cm, in compliance with the cubesat size 2U classification. Due to their small size, cubesats are often deployed into orbit by special equipment on board the International Space Station, or as secondary payload to other orbital missions of larger satellites.

Onboard UPSat is a primary payload, the science unit (designed by the University of Oslo and supplied through the Von Karman Institute as part of the QB50 program) will be used for plasma measurements during the mission duration.

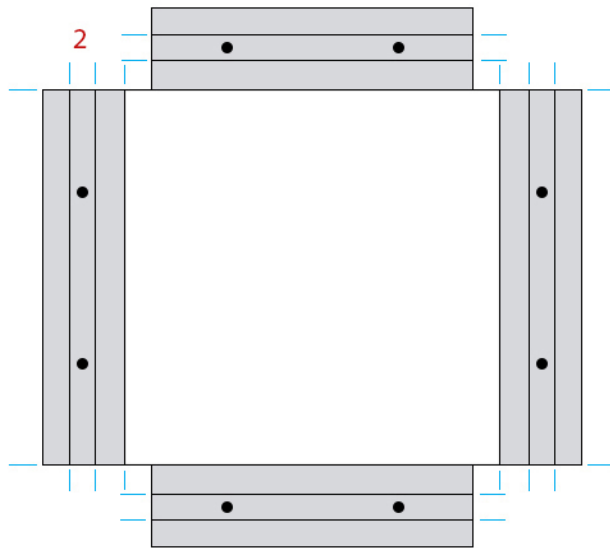
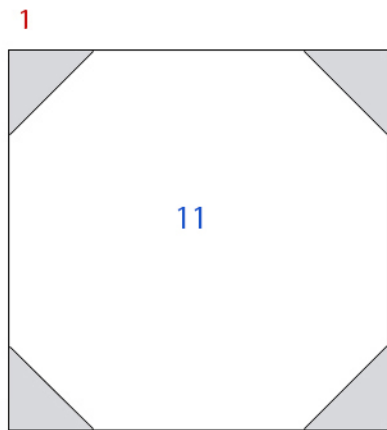
The science unit is a multi-Needle Langmuir Probe instrument works by measuring the current collected individually from four needle probes, placed in front of the satellite's shock front. The collected current is converted to voltage, filtered, digitalized and then sent to the central telemetry system.

As a secondary payload UPSat sports an embedded Linux board (DART-4460) running a modified version of the OpenWRT operating system controlling a b/w camera (MU9PM-MH) with 1 / 2.5" sensor size.

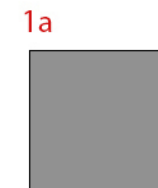
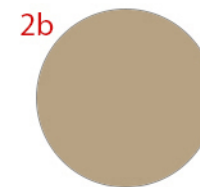
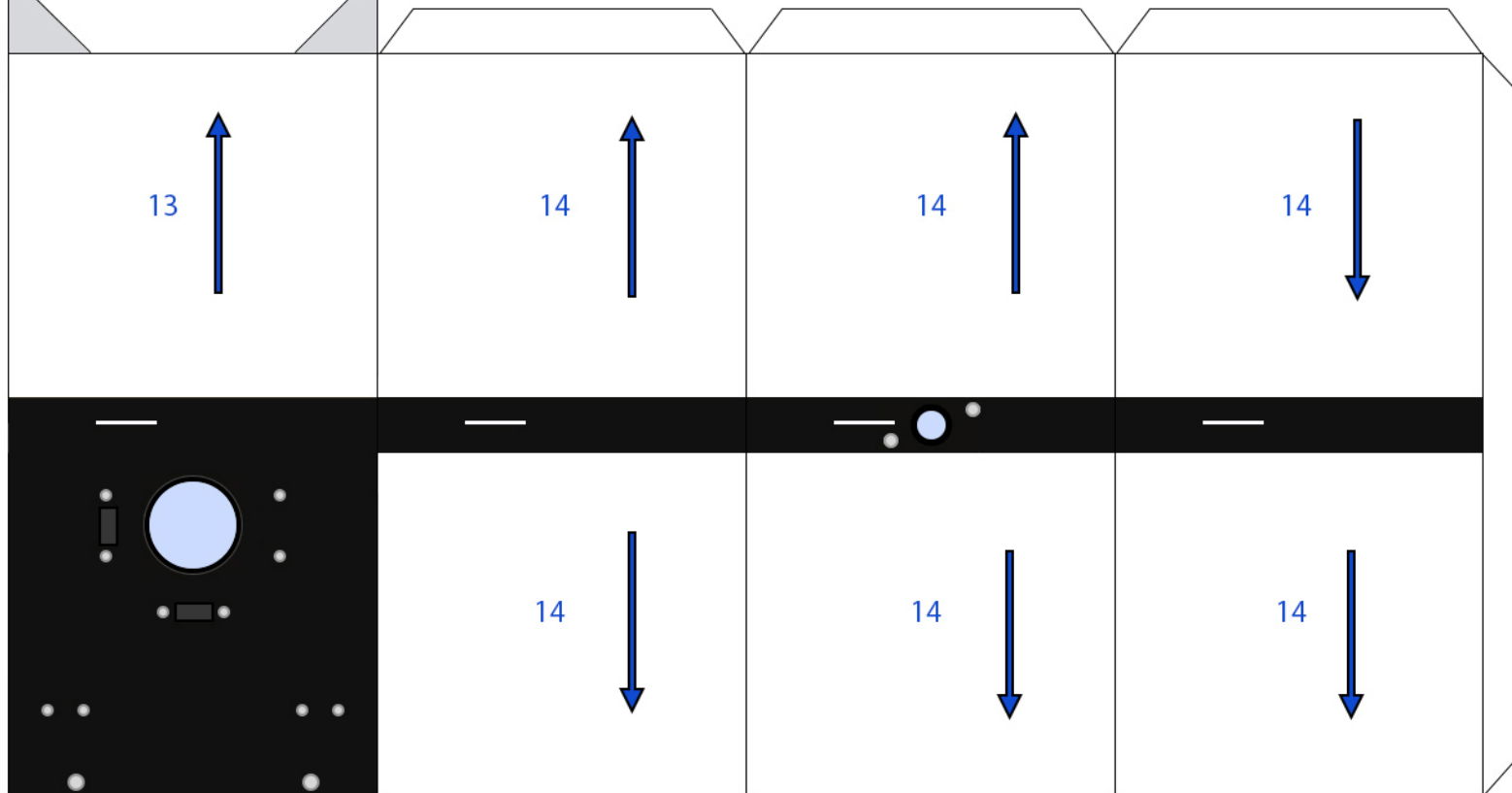
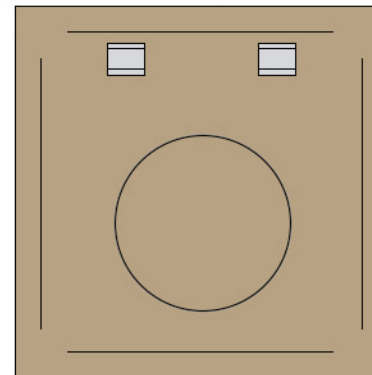
University of Patras University of Patras is a public university in Patras, Greece. The Department of Mechanical Engineering and Aeronautics together with the Department of Electrical Engineering and Computer Engineering started the UPSat project since 2010.

Libre Space Foundation Libre Space Foundation—LSF is a non-profit organization aiming to promote, advance and develop open source technologies for space. LSF designed, manufactured and delivered UPSat subsystems (hardware and software) as open source projects.



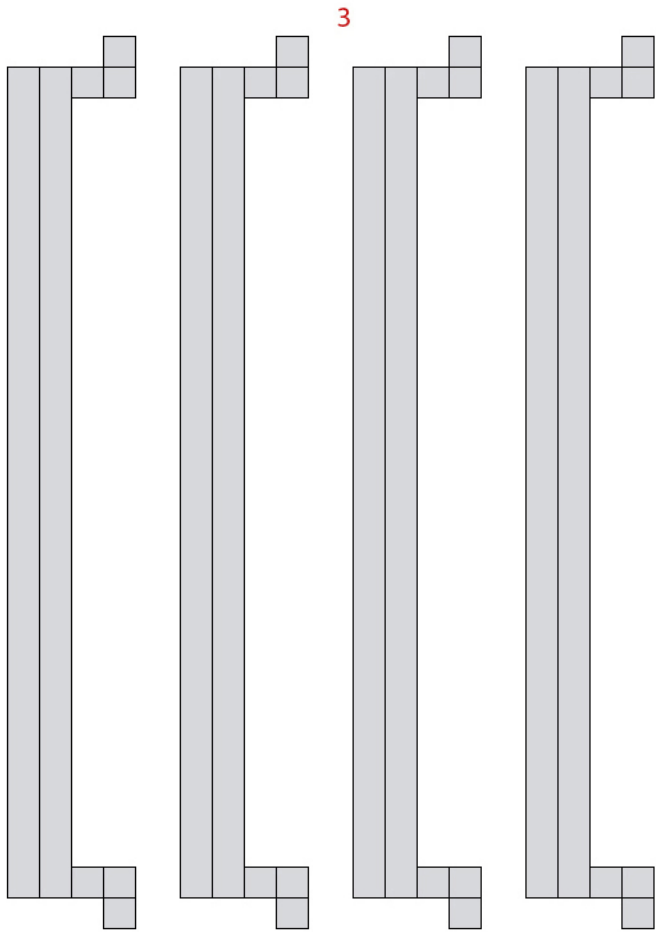


2a  
Glue to backside of part 2, then fold in the tabs on part 2.

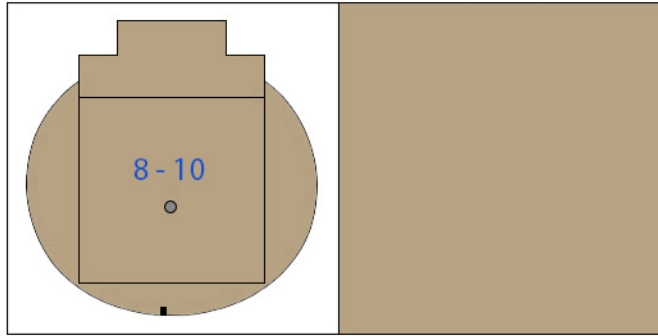


Cut out the two light blue circles

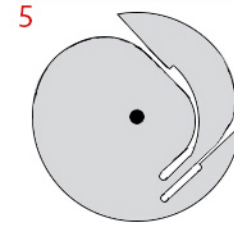
# UPSat



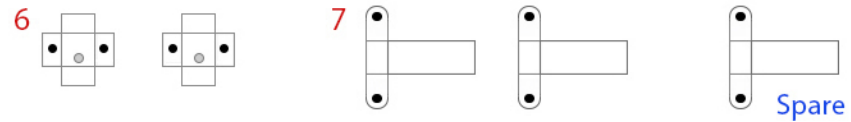
4 Glue back-to-back and cut out for color on both sides.



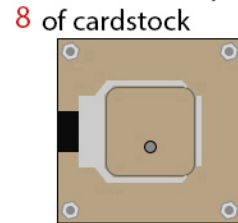
Glue to FOUR layers of cardstock



Poke holes on the dots before cutting and folding.



Glue to two layers of cardstock



Glue to three layers of cardstock

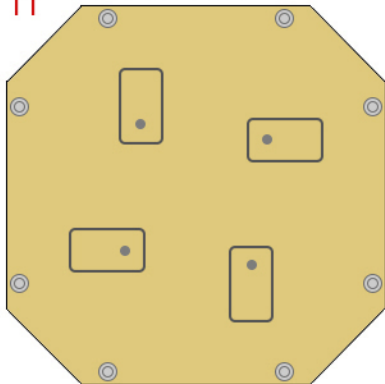


Glue to three layers of cardstock

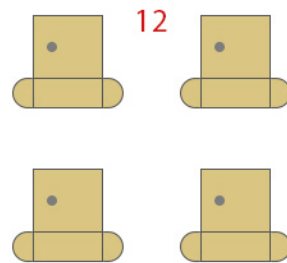


Color edges the same color for both of these.

11 Glue to cardstock



Poke holes on the dots before cutting and folding.



Glue to two layers of cardstock



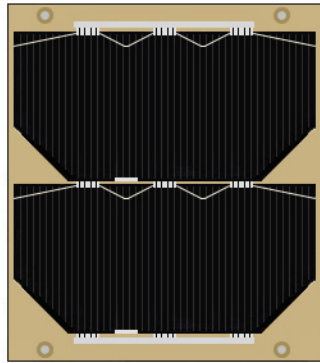
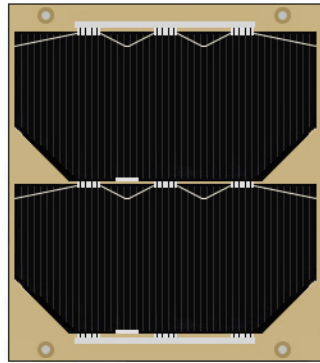
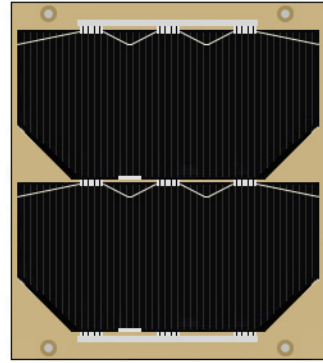
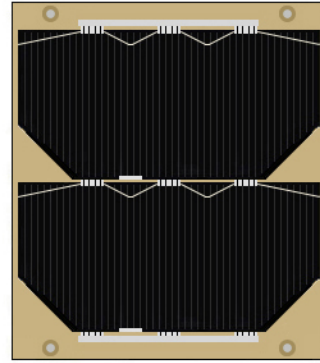
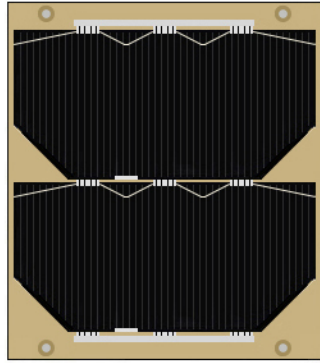
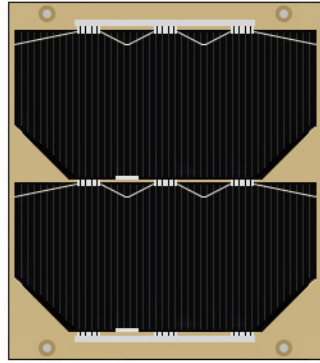
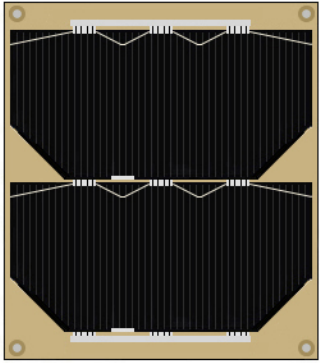
Need four long plastic broom straws cut and bend at the same shape and size as the drawing below. Color this light grey or silver.

UPSat

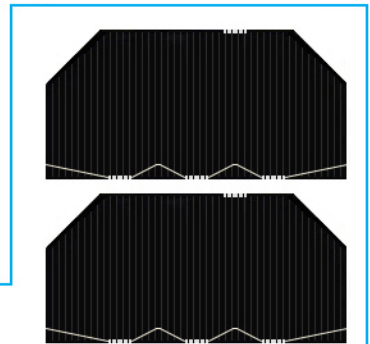
13

Glue all seven of these to cardstock

14



Optional Antennas, color other side the same color



Optional Detail parts

