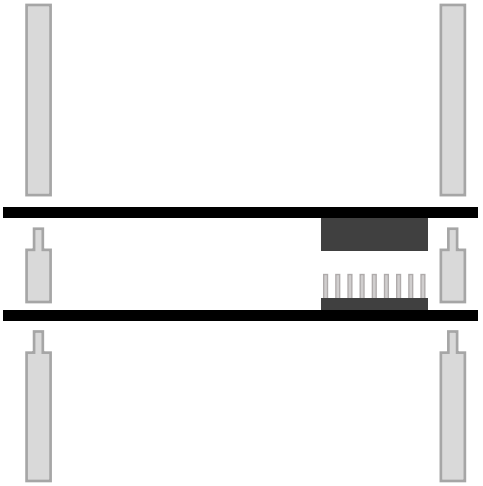
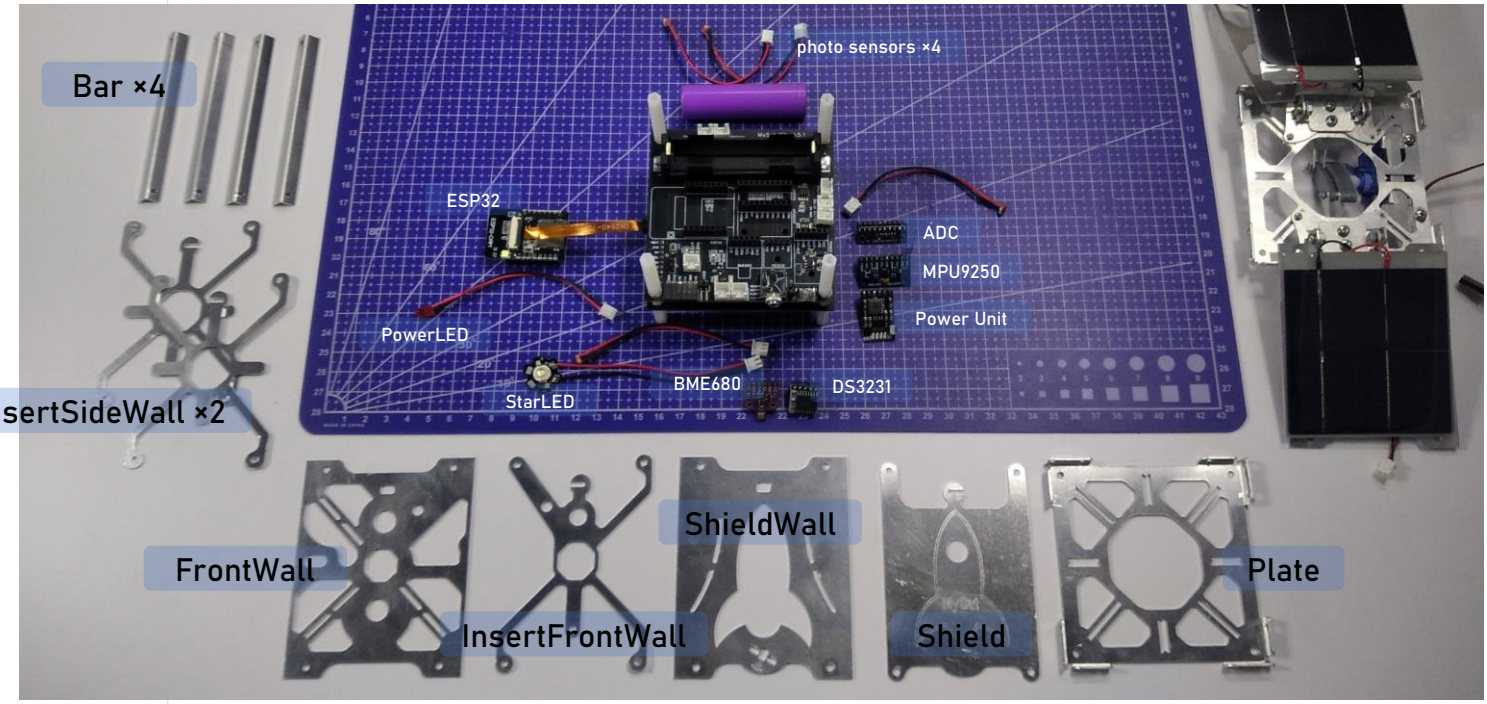
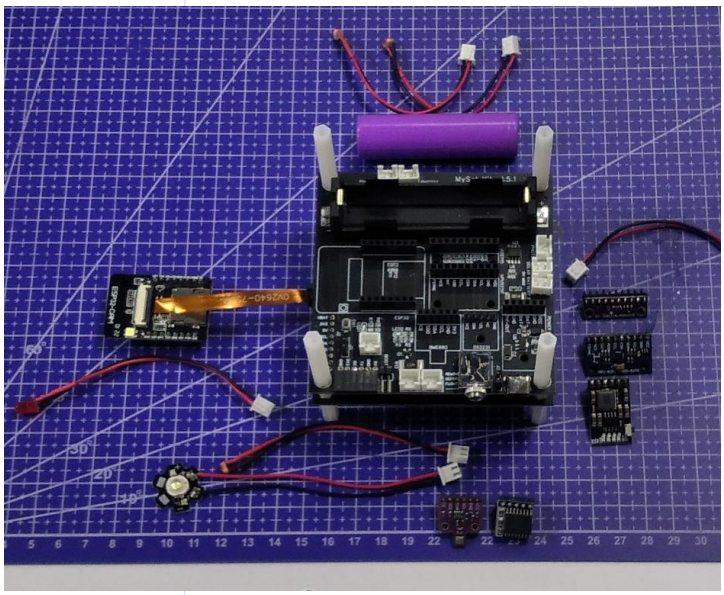
Assembly instructions

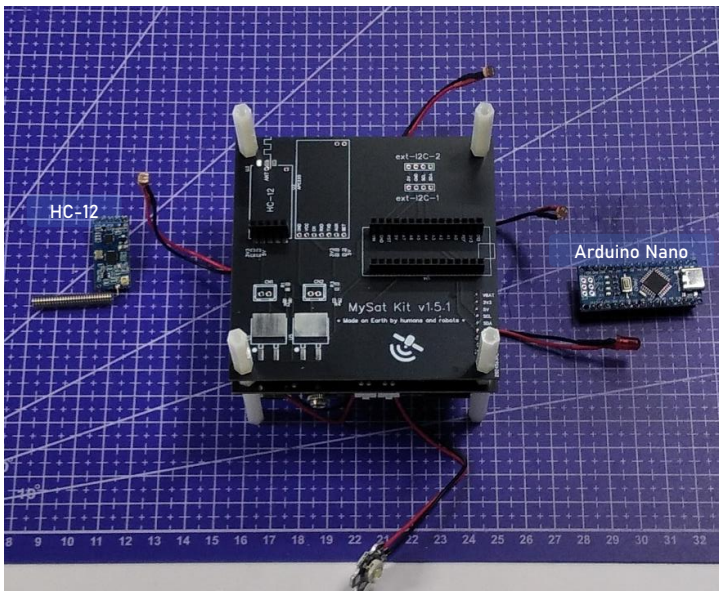
1 Start with the boards. Attach the standoff pillars first to the bottom board, then put the top board on it and screw the remaining pillars on top.



Get to know the components.

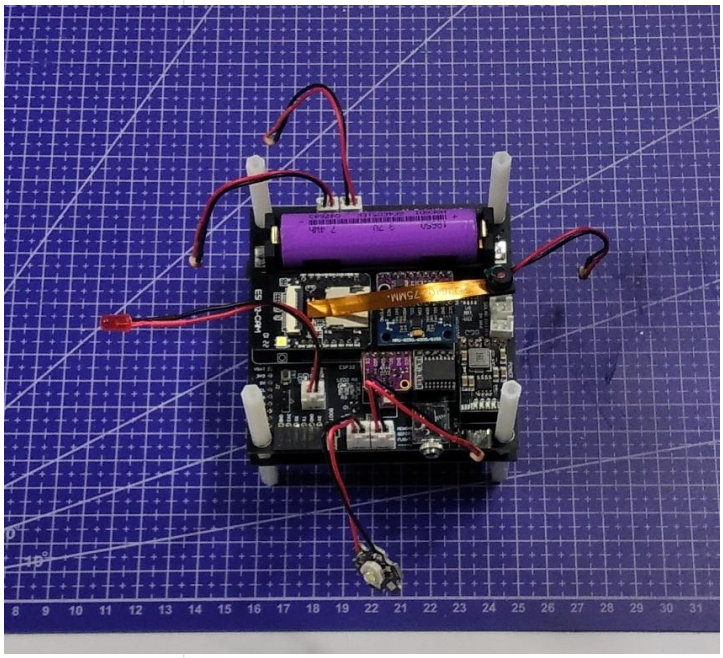


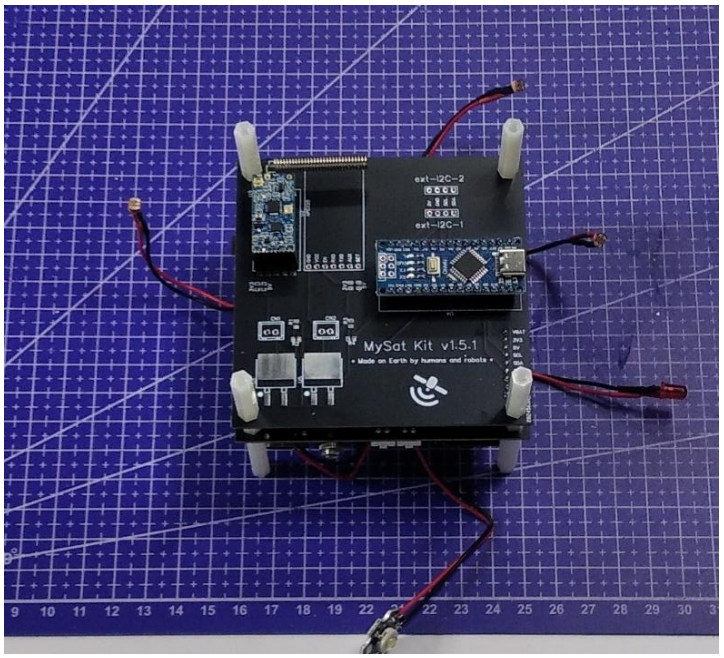




2 Insert all electronic components into both boards according to the labels on the board (do not reverse the battery polarity!).

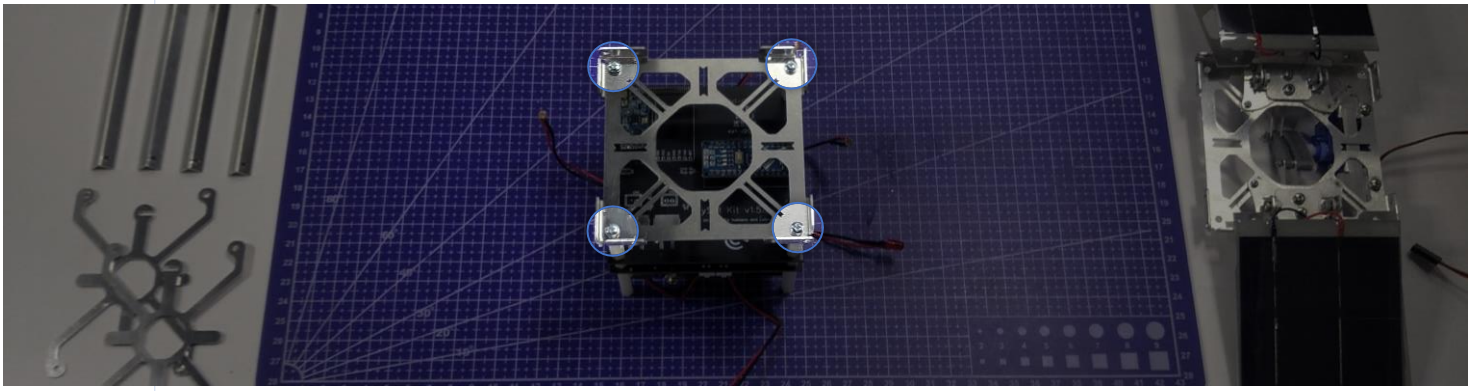
Insert the red PowerLED into the `Power` socket on the board, and the large black StarLED into the `Star` socket. Also insert 4 photo sensors into the 4 sockets provided for them.





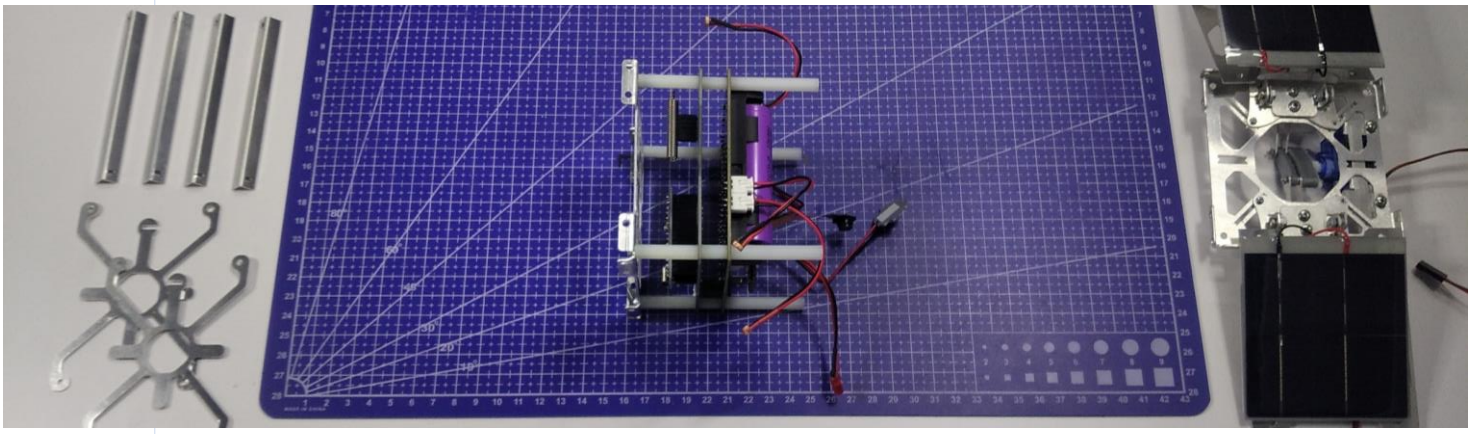
3

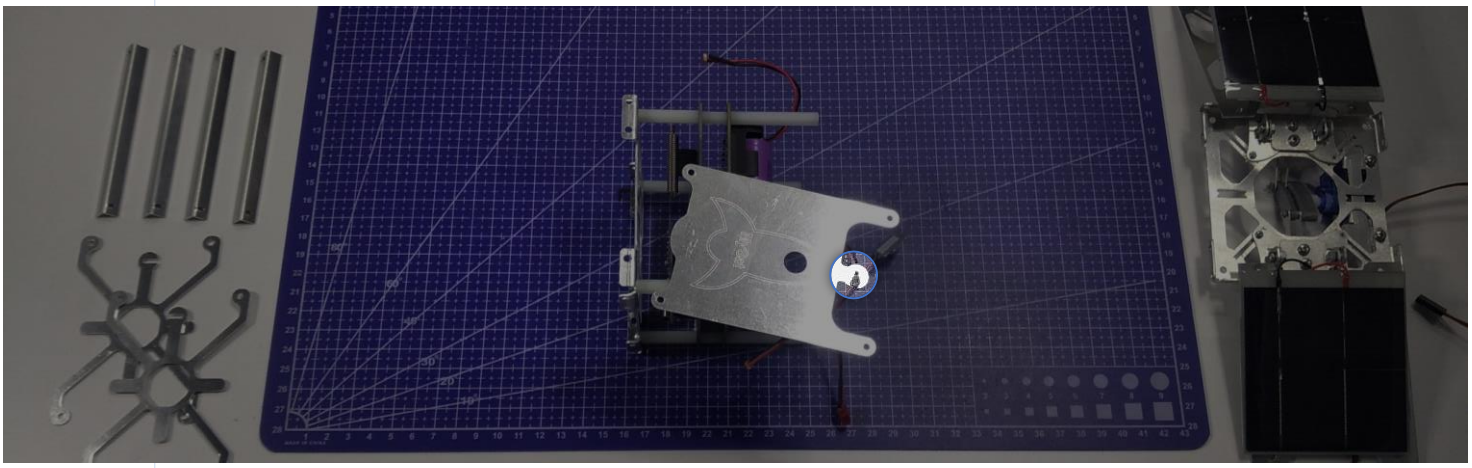
Secure the Plate, the bottom of the satellite, with 4 bolts into the threads in the pillars. Do this from the bottom board side (where the Arduino Nano is located)



4

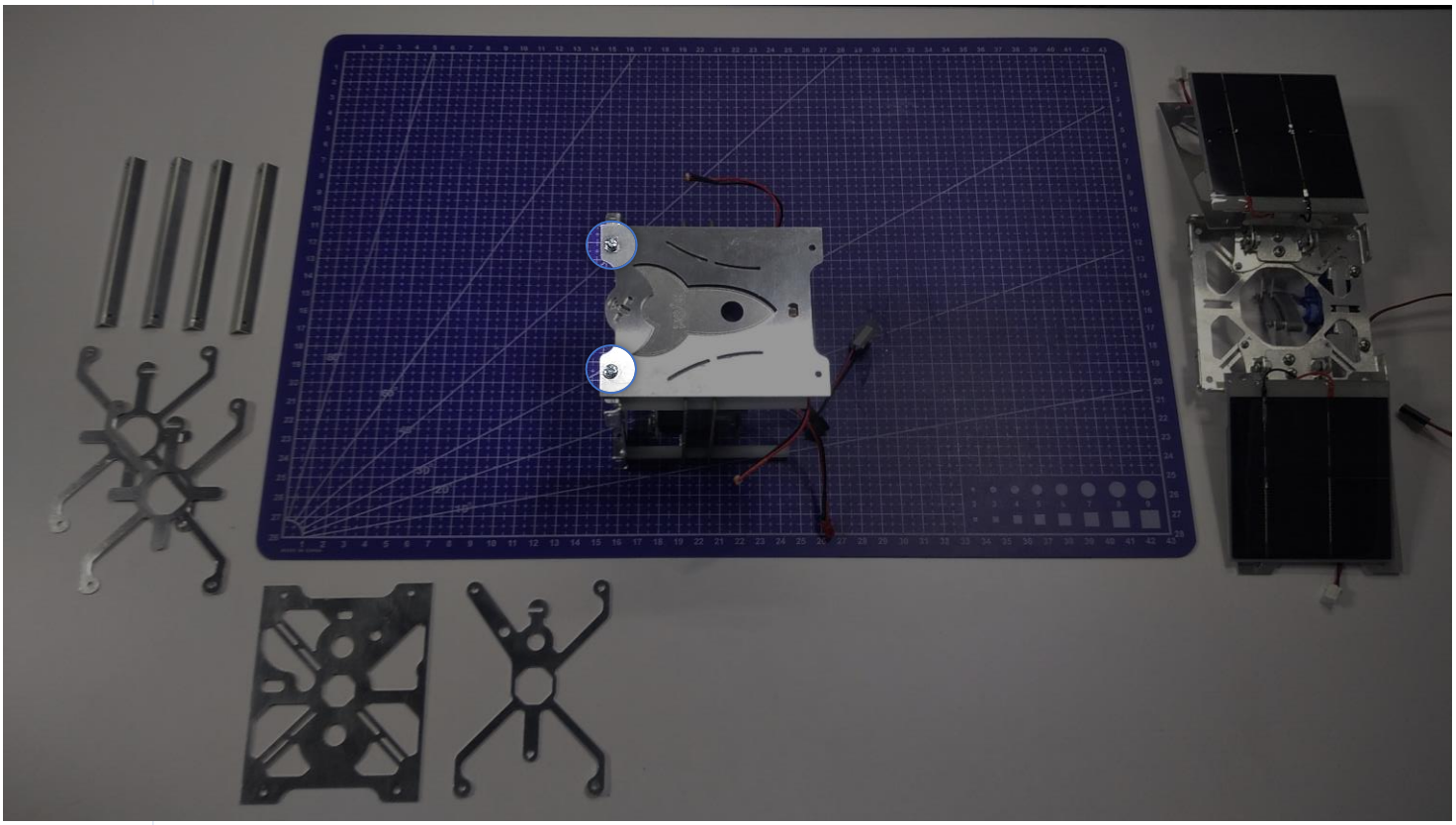
Take the Shield, and insert the wires of the photo sensor that you inserted into the `PHOTO 2` connector into the slot on top to secure it in place.

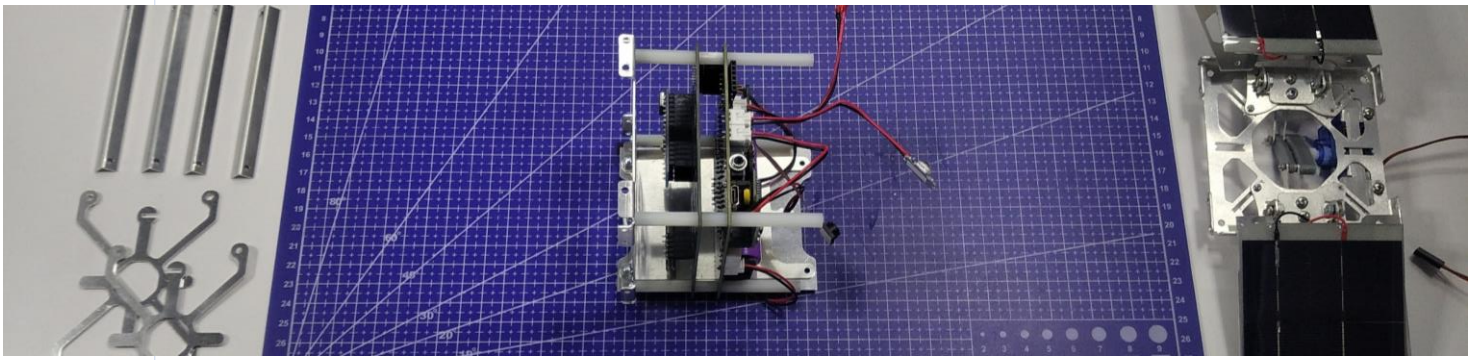




5

Place the ShieldWall on top of the Shield so that the mounting holes match. The photo sensor should be sandwiched between two parts. Fix their bottom side to the Plate (this wall should be adjacent to the board near the battery) using two bolts and two screws.





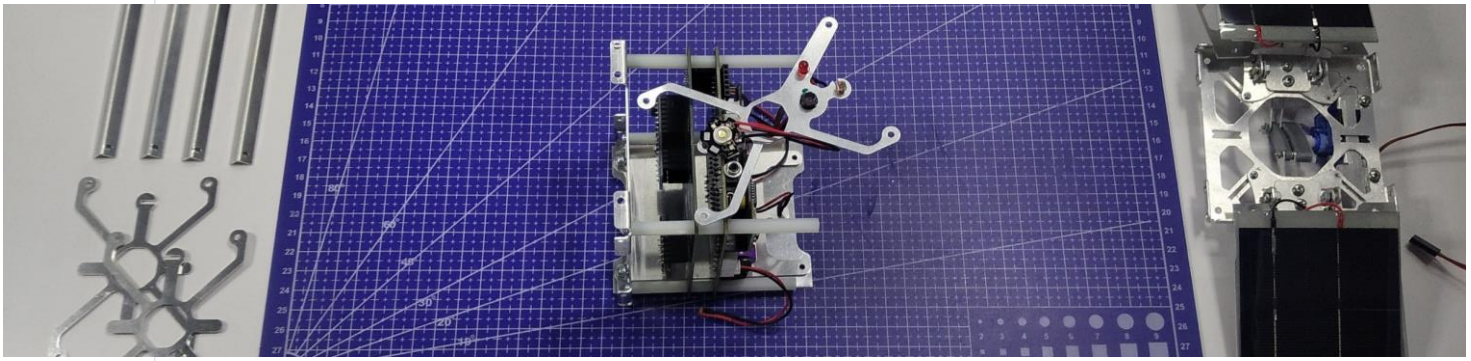
6

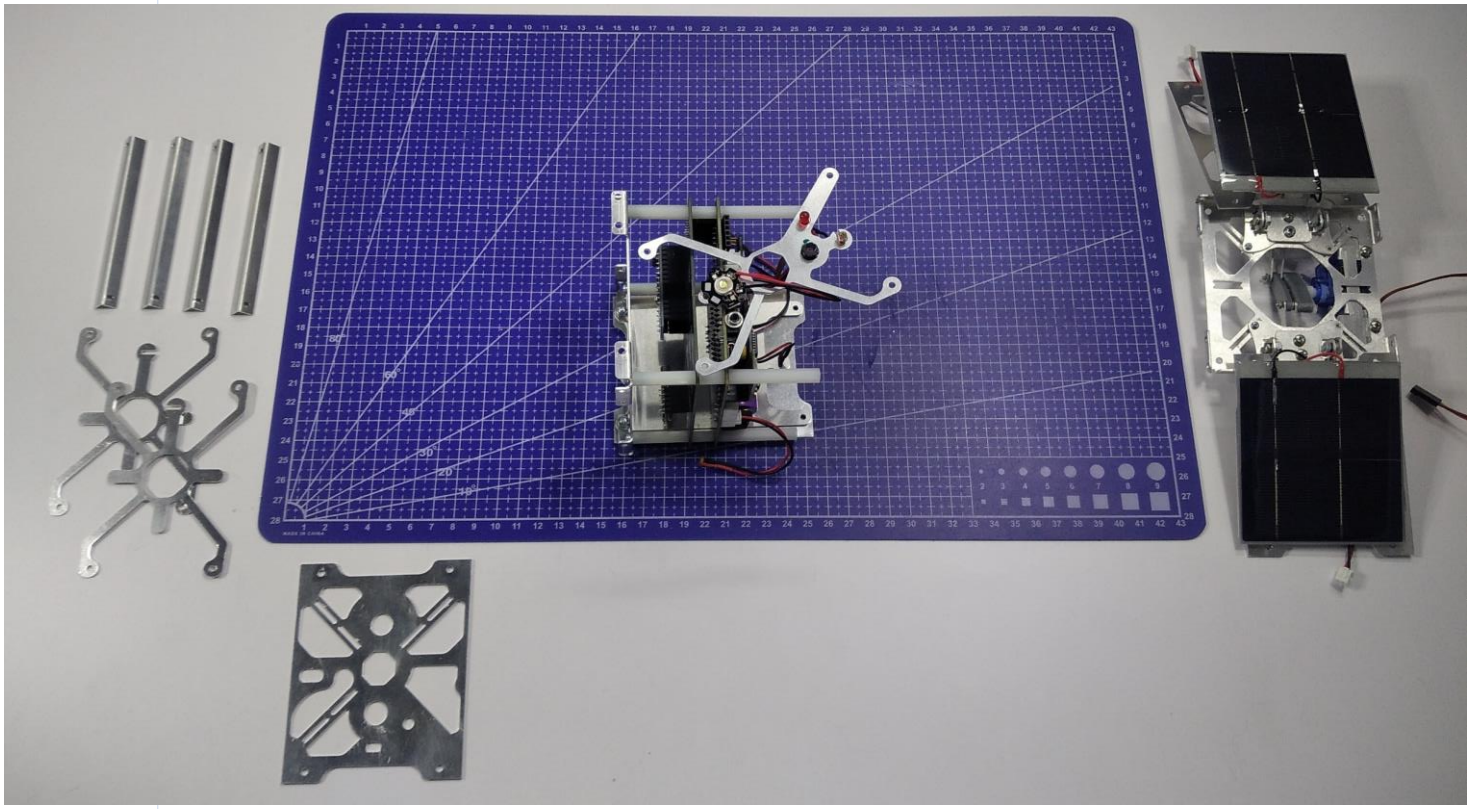
Turn the satellite over to the opposite side.

On the side of the connectors on the board, you need to install InsertFrontWall. This mount holds the camera, PowerLED (red), StarLED (black) and the photo sensor that you inserted into the `PHOTO 4` connector.

Insert the camera (be careful not to tear off the cable) and PowerLED. Insert the photo sensor wires into the slot at the top.
On StarLED, peel off the protective white paper from the adhesive layer. Glue the StarLed on top of the plate over the small hole in it.

Attention: do not mix up the placement sides. PowerLed should be on the left when looking into the camera, as in the photo.

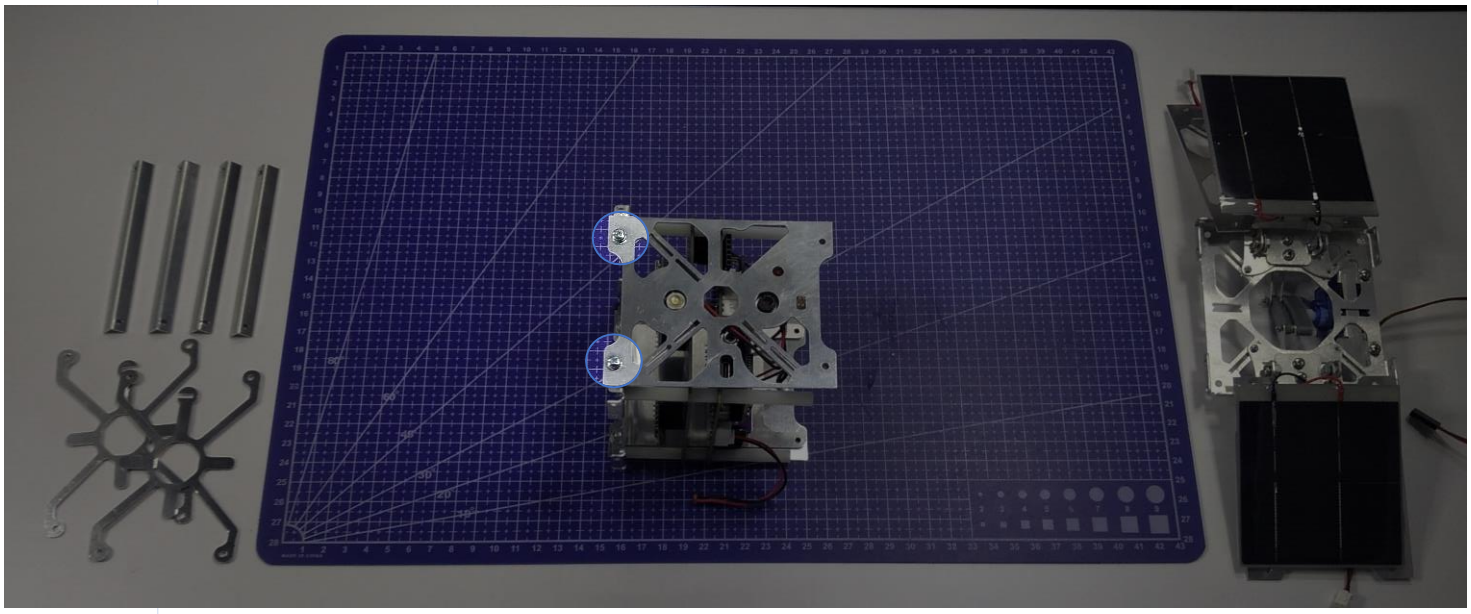


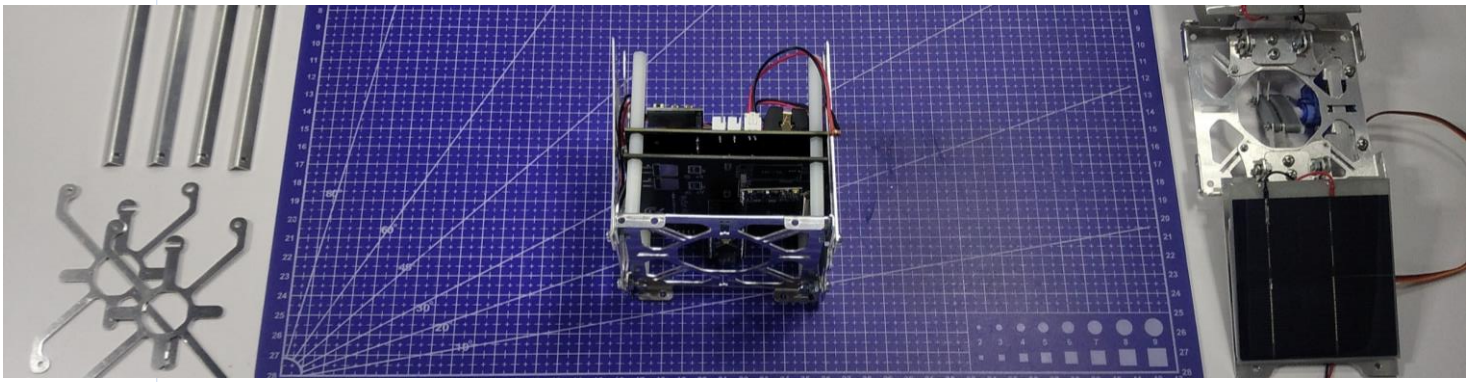


7

Place the FrontWall on top and align the mounting holes with the InsertFrontWall.

Screw them by the bottom holes to the Plate using two bolts and two screws.

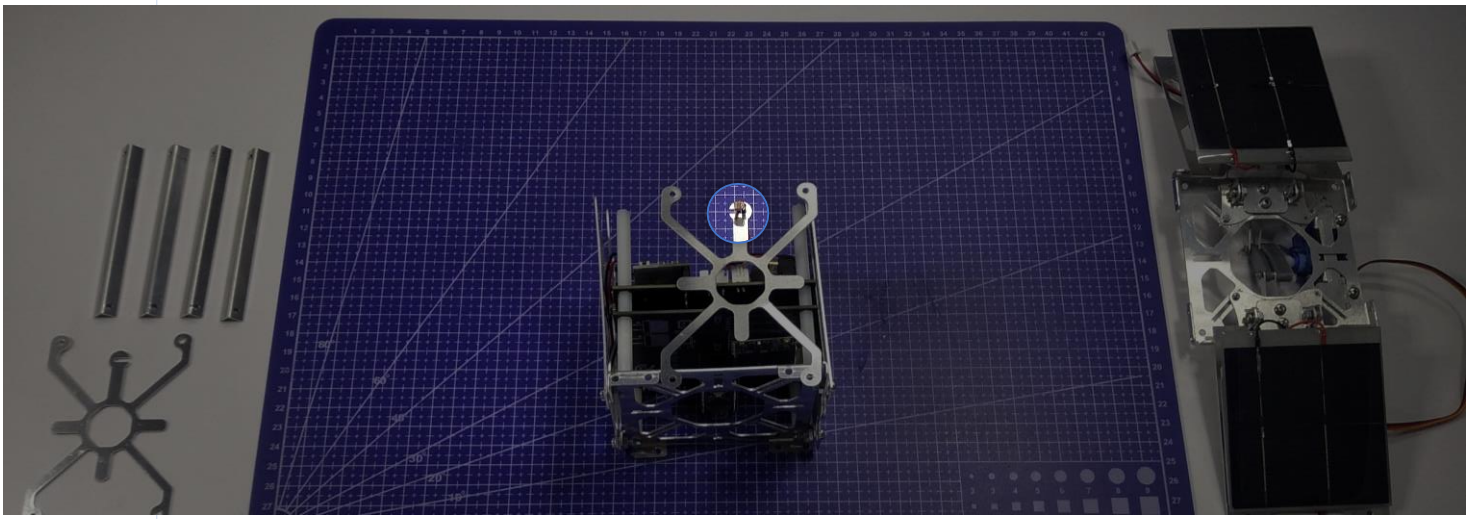


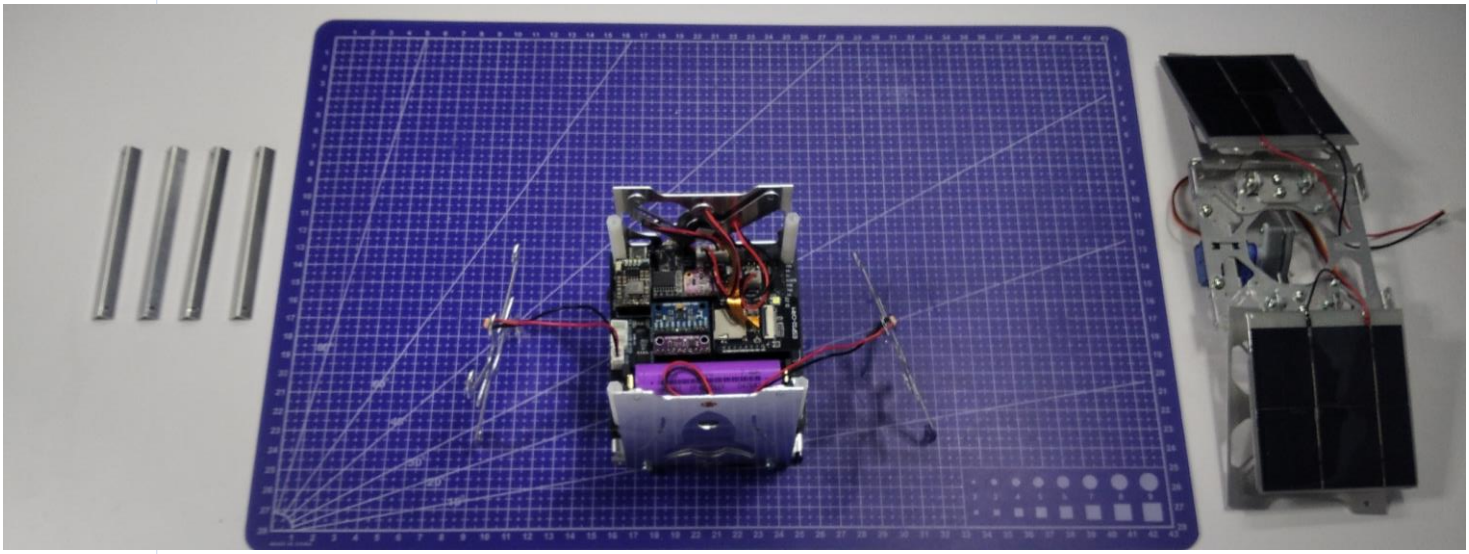


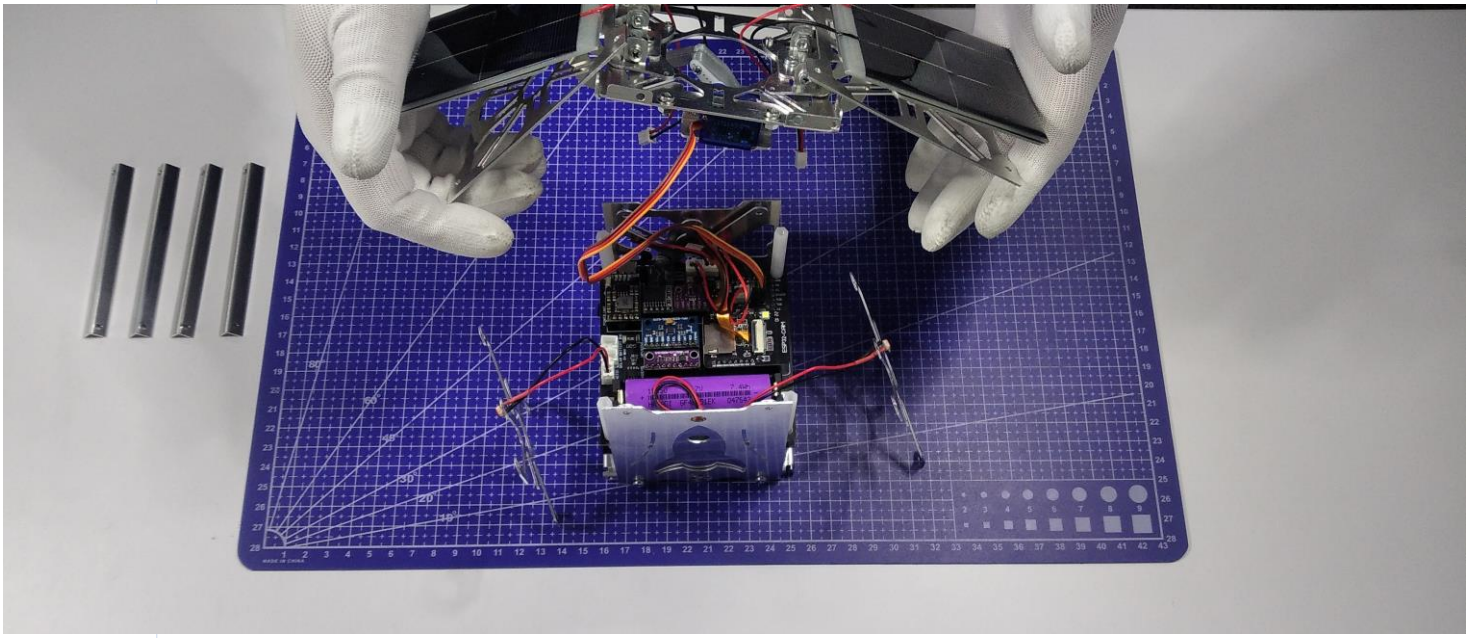
8

Prepare to attach the side walls.

Fix the two remaining photoresistors in the InsertSideWall fasteners. When looking into the camera, the photo sensor from the `Photo 1` socket should go to the right wall, and from the `Photo 3` to the left wall.



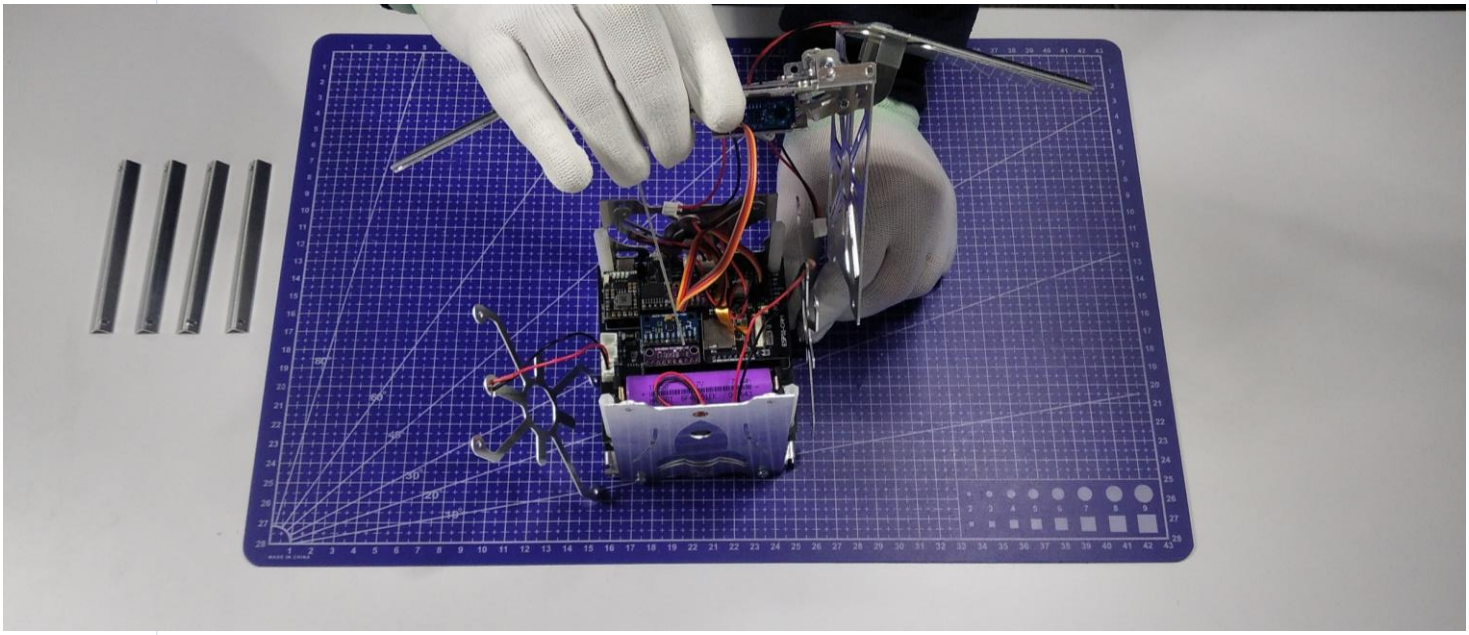




9

Take the included solar panel construction.

First, connect the servomotor cable to the connector (below the ESP32 controller) so that the brown wire of the cable is directed towards the battery, and the yellow wire towards the camera.



10

Now carefully put the structure on top of the satellite, like a lid, so that the servo motor (blue) is above the battery.

At the same time, you need to connect the solar panel wires to the appropriate sockets (SOLAR BATTERY). All this will require some perseverance.

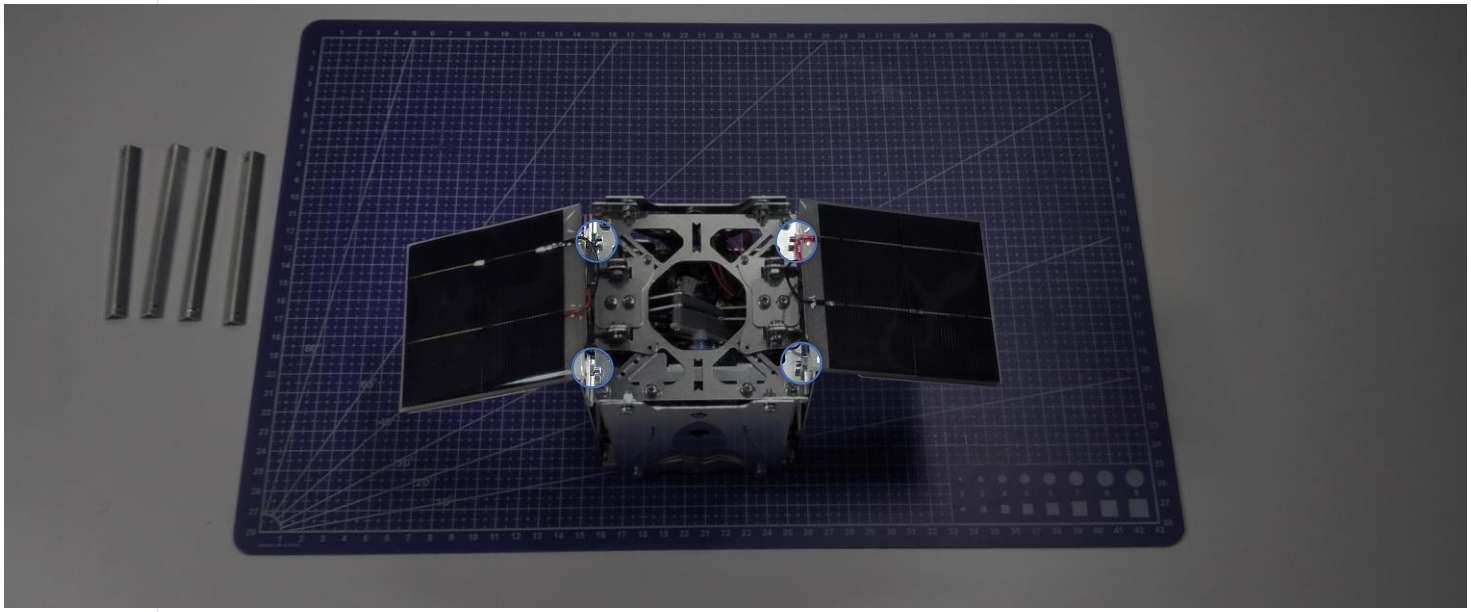
Be careful that the servomotor wires or others do not block the panel opening mechanism during installation.

The InsertSideWalls that you installed in the previous step should be under the SideWalls mounted on solar panels construction. Make sure that you can align the mounting holes in the SideWalls and the InsertSideWalls.

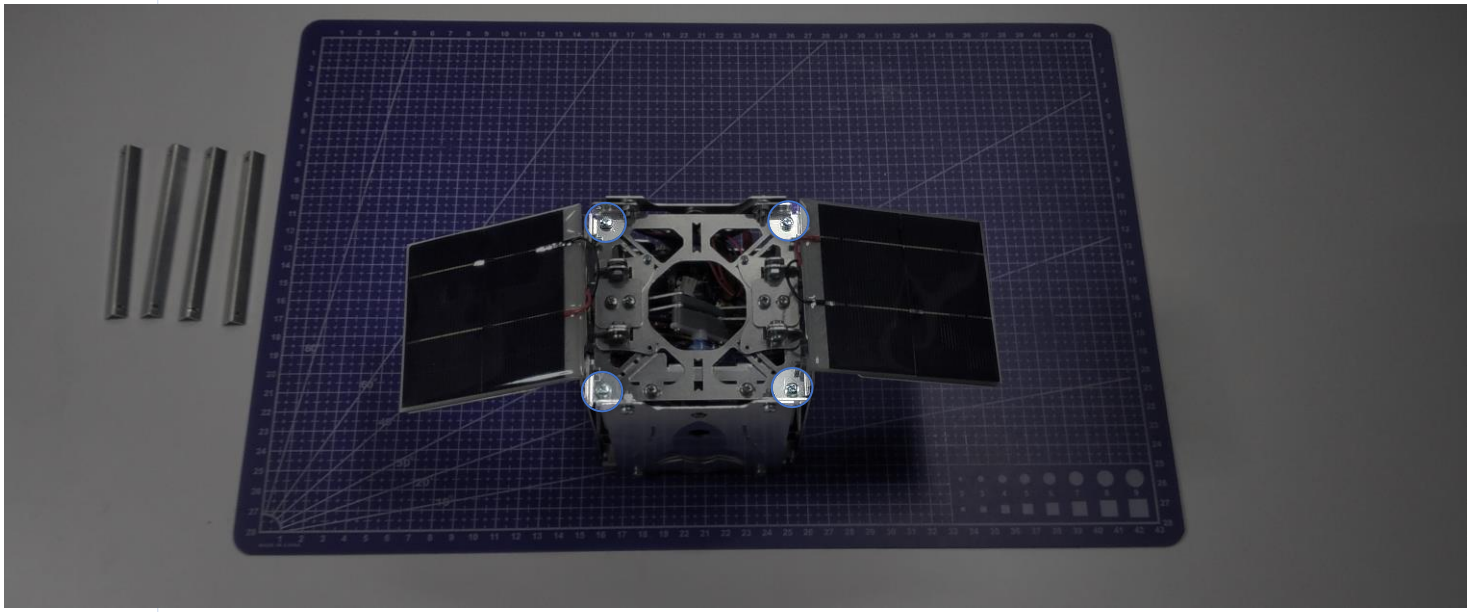
11

When you succeed, fix both SideWalls with their InsertSideWalls to the Plate bottom cover using four bolts and four screws, two on each side.

Do the same for the top Plate cover using four more bolts and four screws.



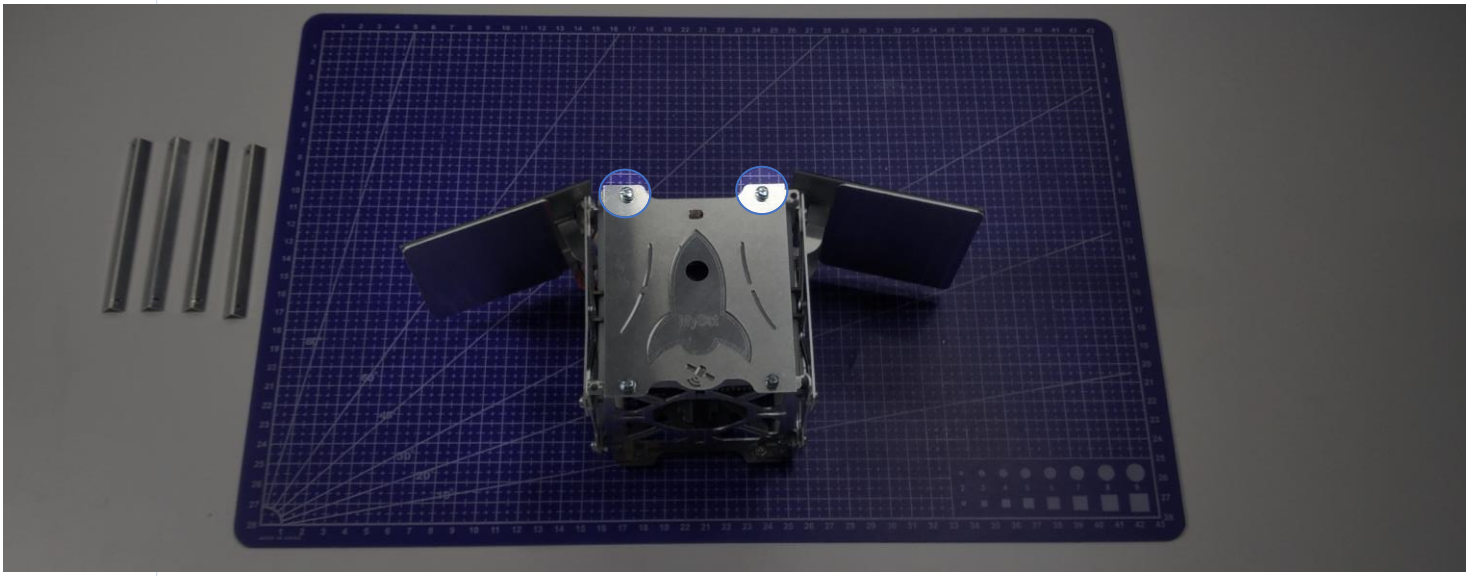
From above, screw 4 bolts into the top Plate cover of the satellite into the threads of the pillars secured to the board.

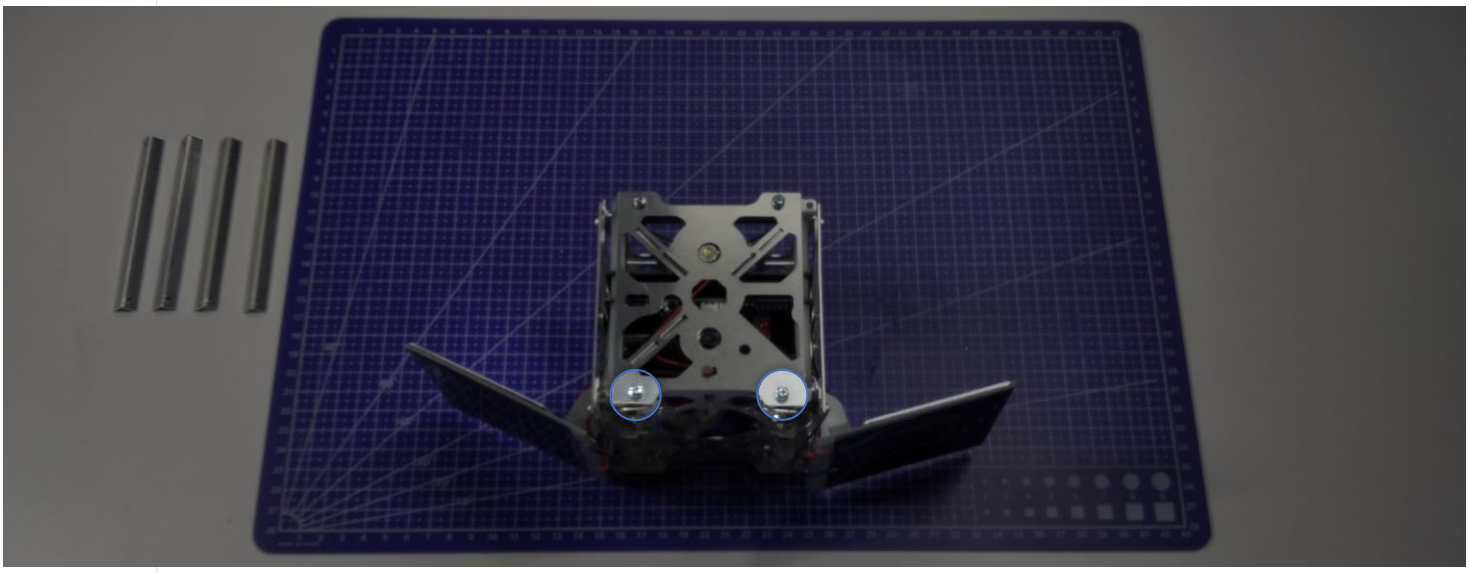


12

Now secure the free top edges of the ShieldWall (and the Shield below it) and the FrontWall (and the InsertFrontWall below it) to the top cover of the satellite, using four bolts and four screws, two for each wall.

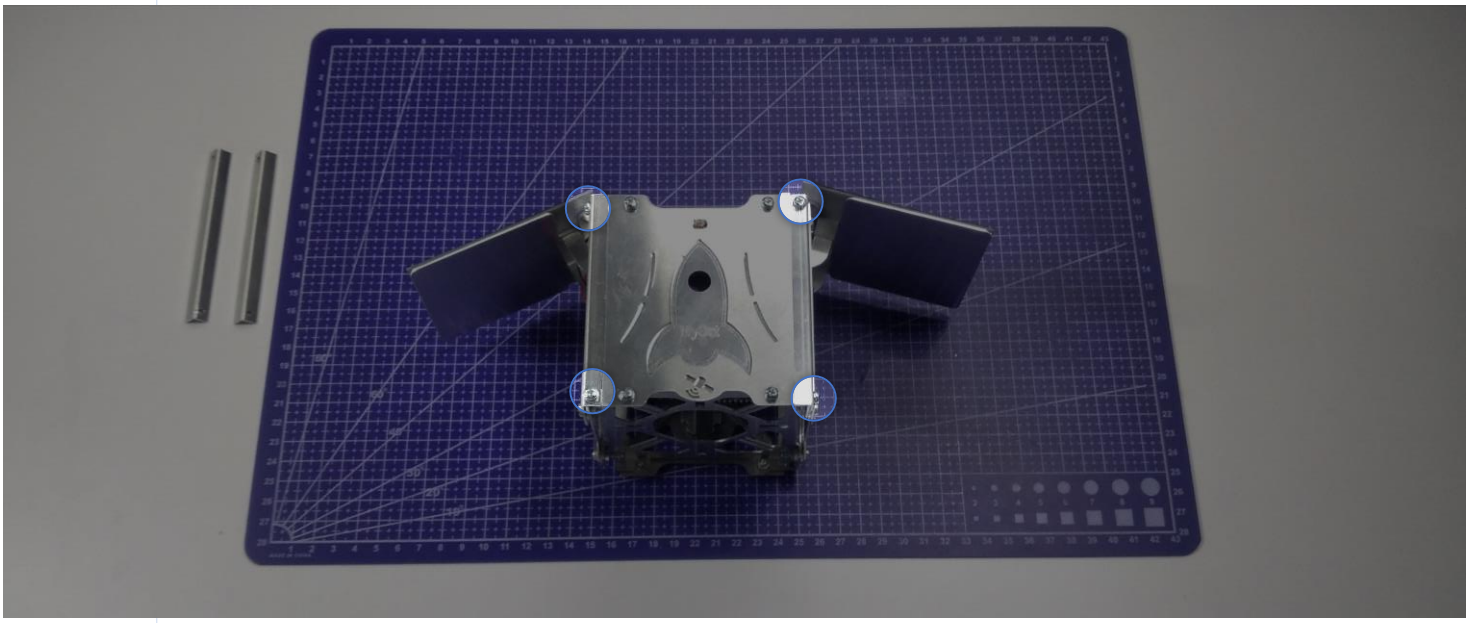
The mounting holes will match if you correctly pre-fixed the parts when attaching to the bottom of the satellite.

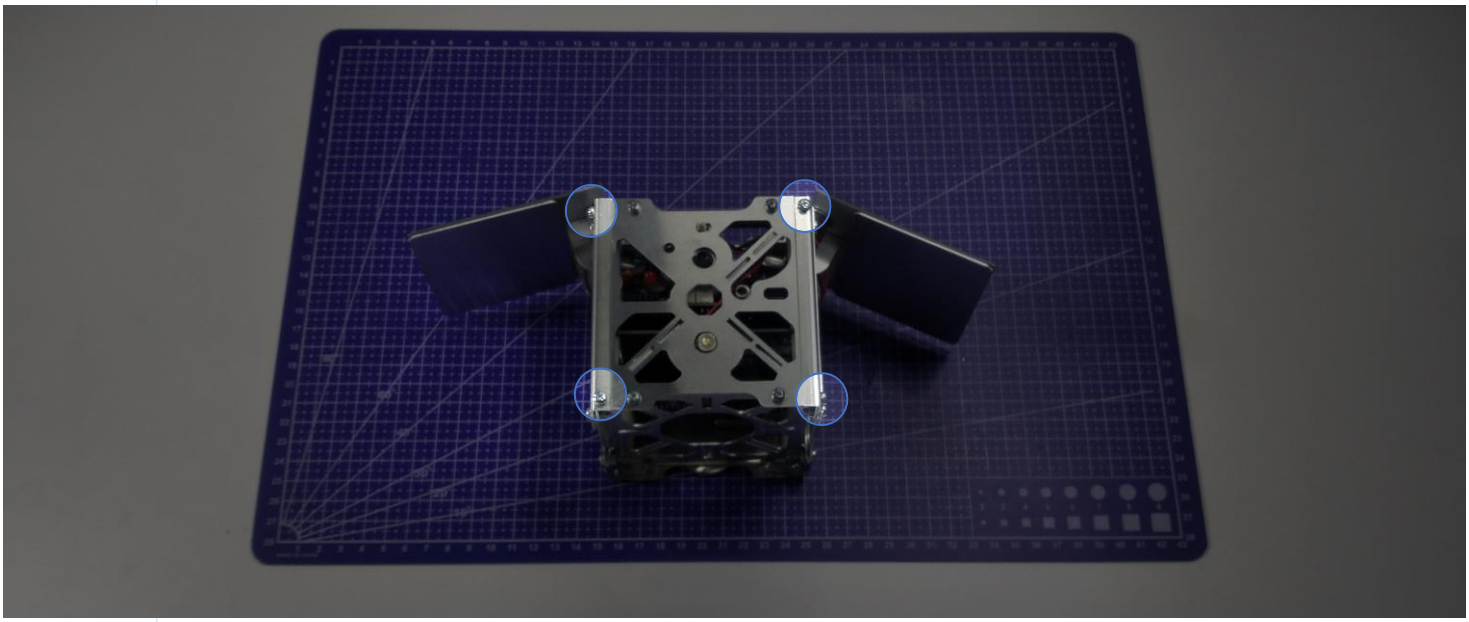


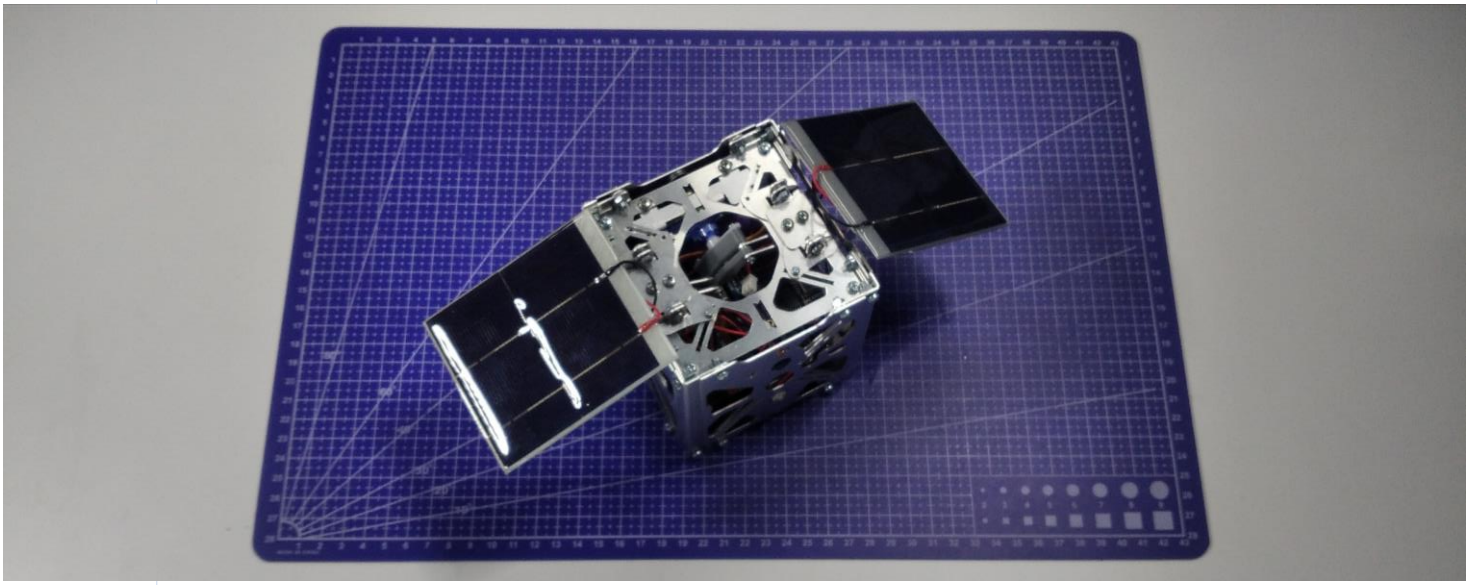


13

Secure the 4 Bar`s corner trims to the satellite corners with 8 bolts and 8 screws.







Congratulations! You've just built your own satellite.

At the end of the assembly you will probably have a few spare bolts and two screws left over. You can throw them away