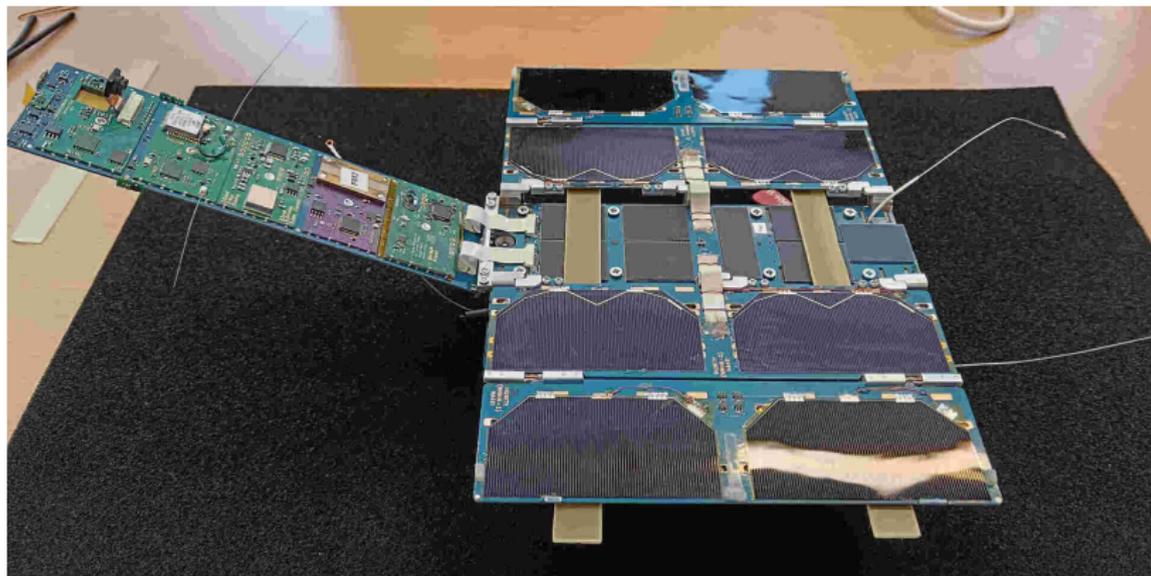


Hunity (NMHH-1) - BME VIK HVT MTL + MRC

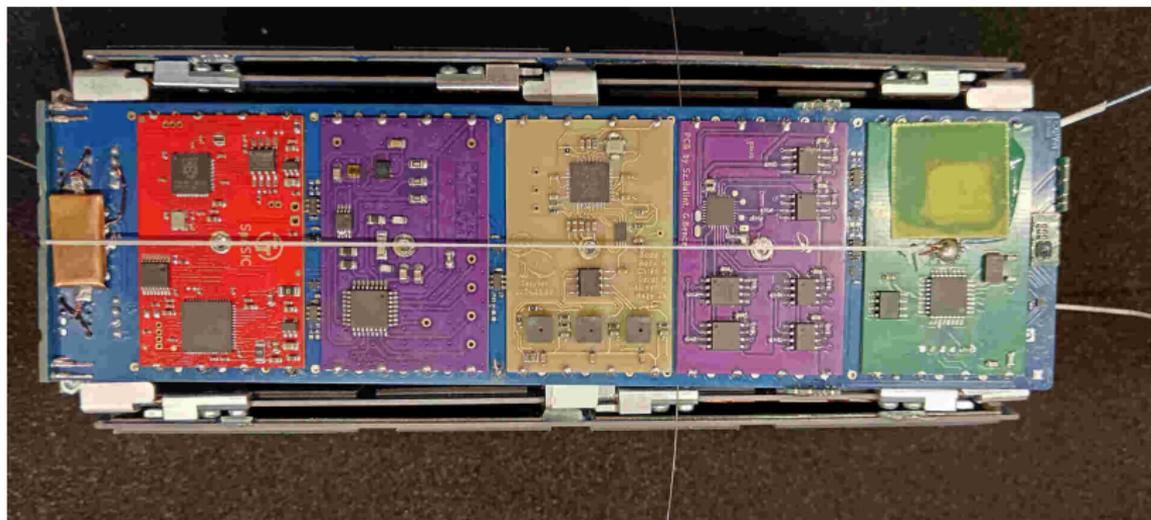


dr. Dudás Levente, dr. Gschwindt András
dudas.levente@vik.bme.hu

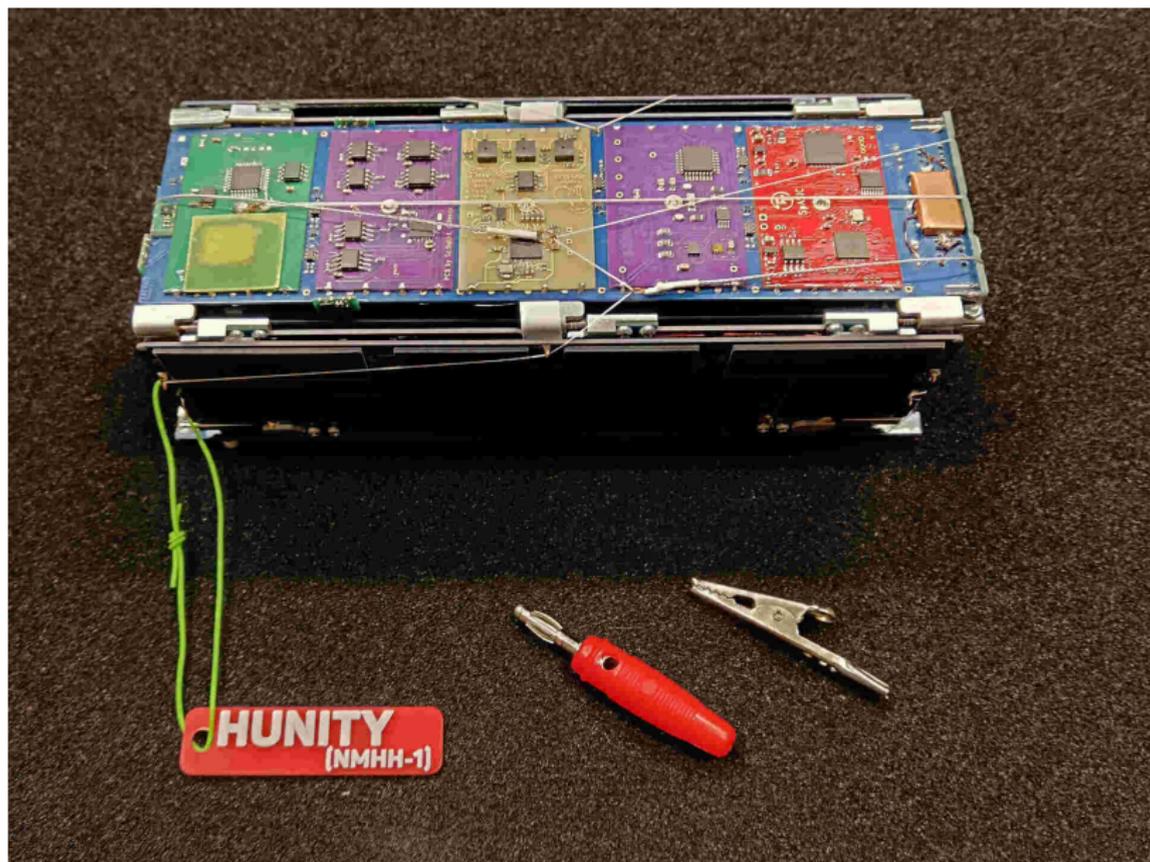
Hunity (NMHH-1) 1



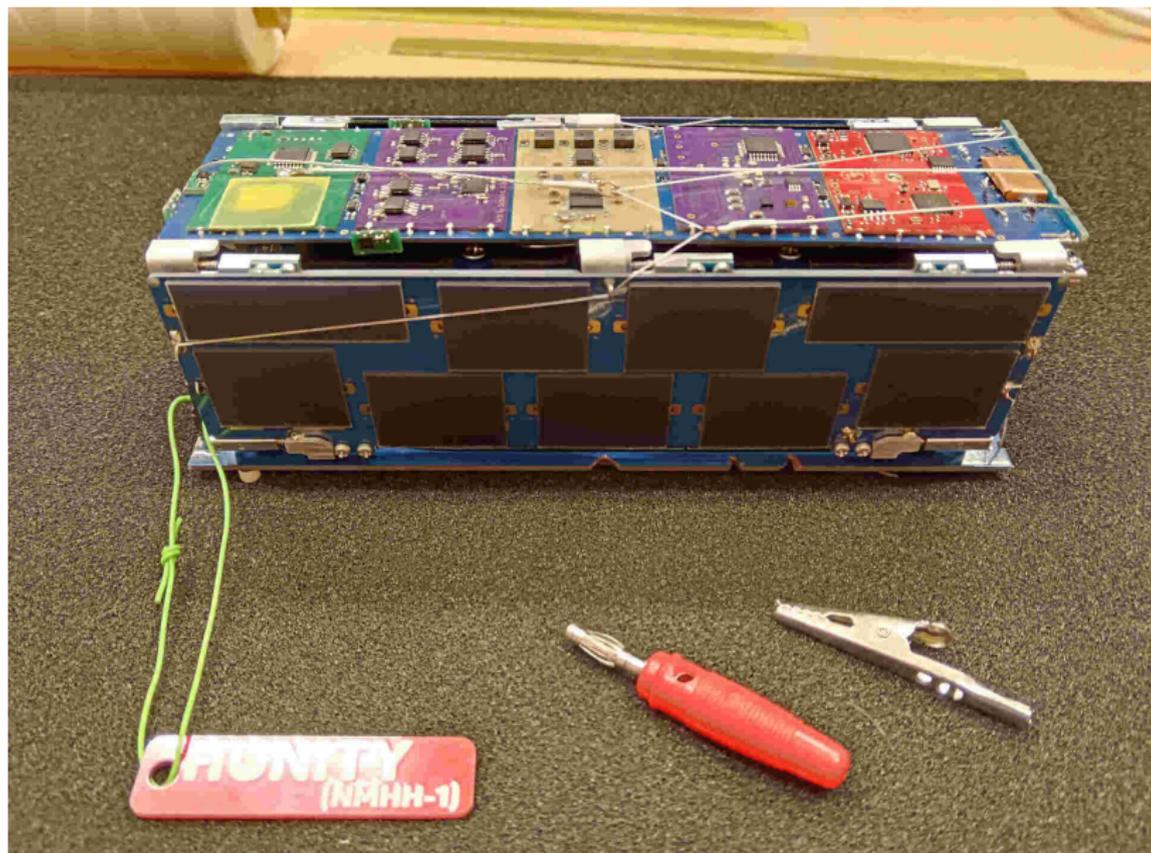
Hunity (NMHH-1) 2



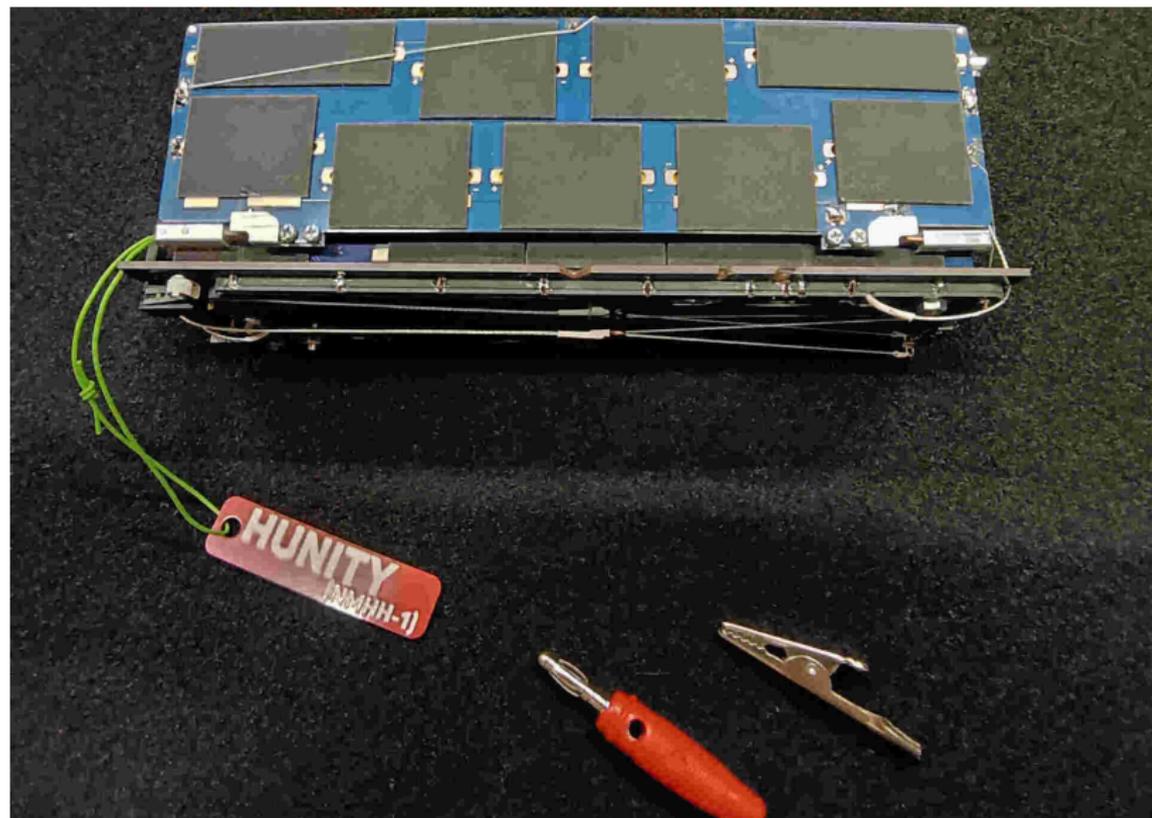
Hunity (NMHH-1) 3



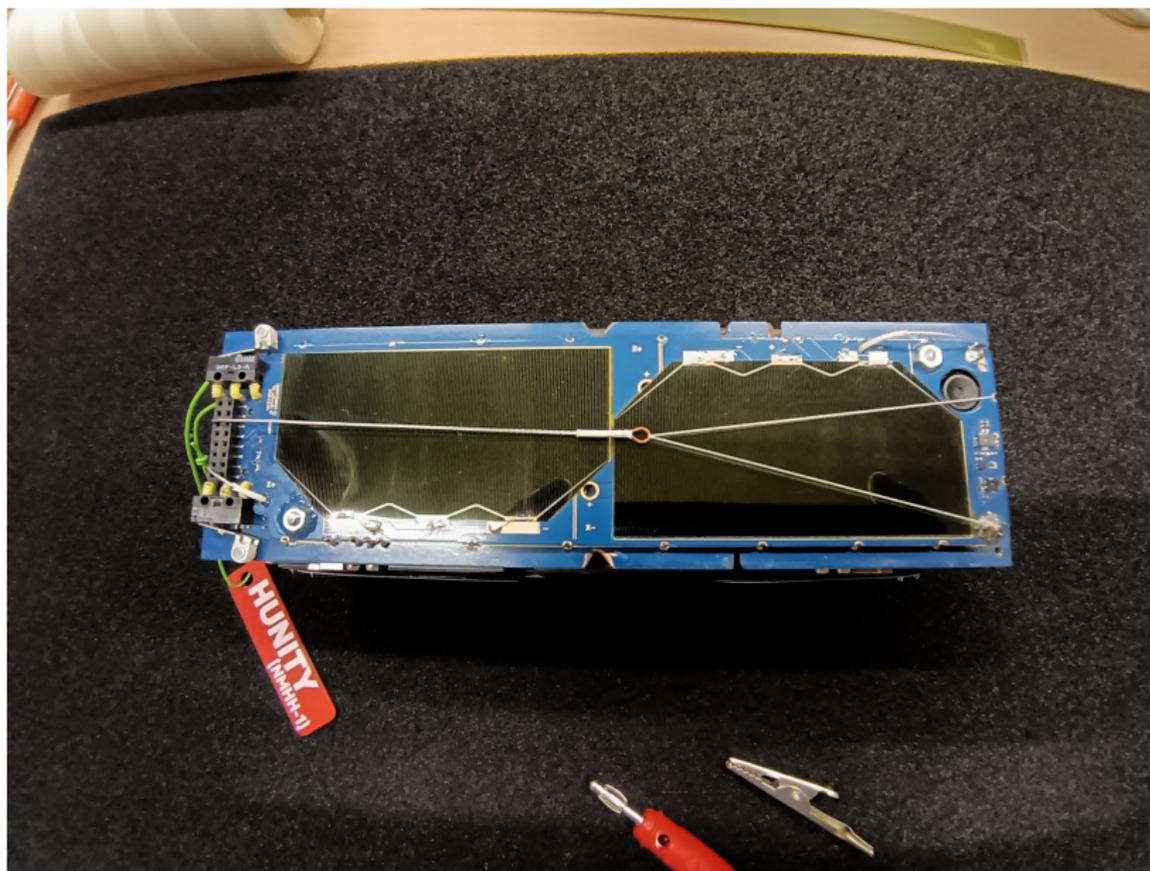
Hunity (NMHH-1) 4



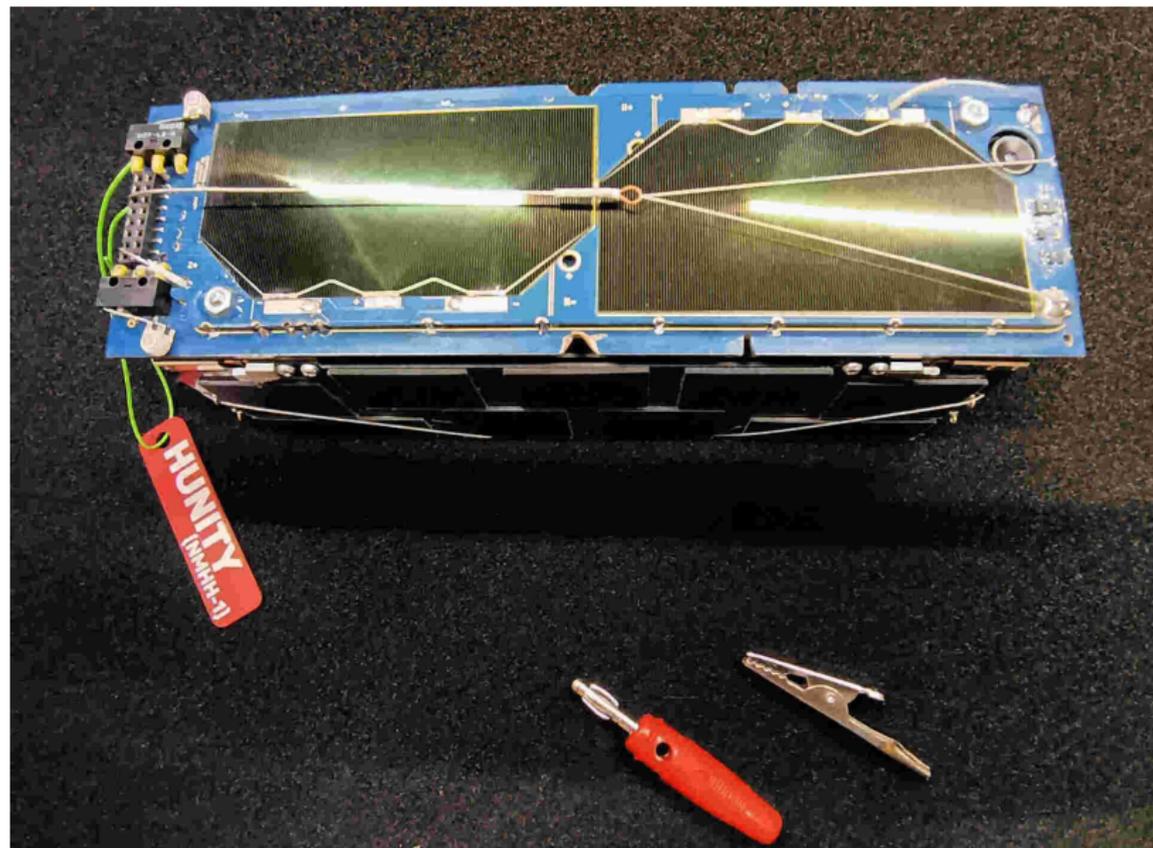
Hunity (NMHH-1) 5



Hunity (NMHH-1) 6



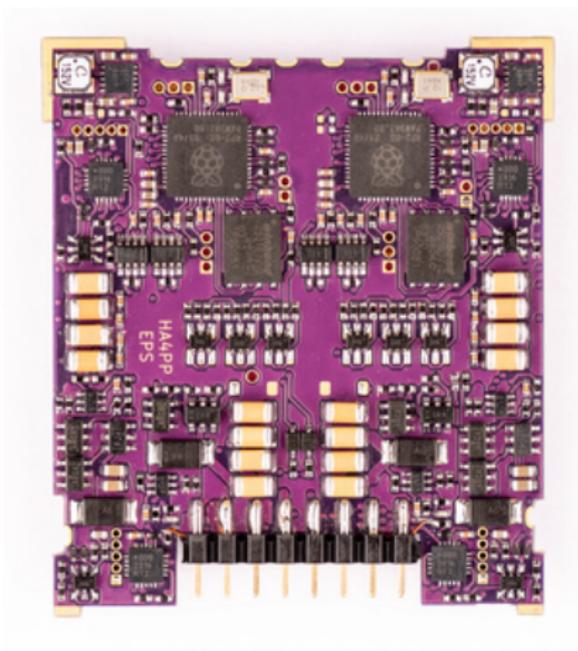
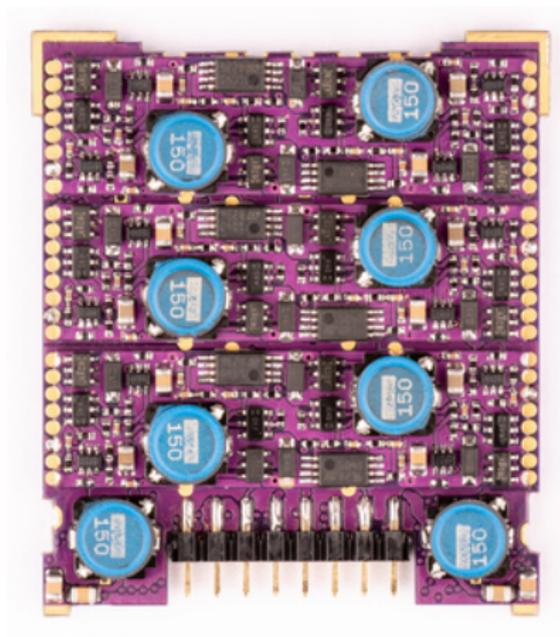
Hunity (NMHH-1) 7



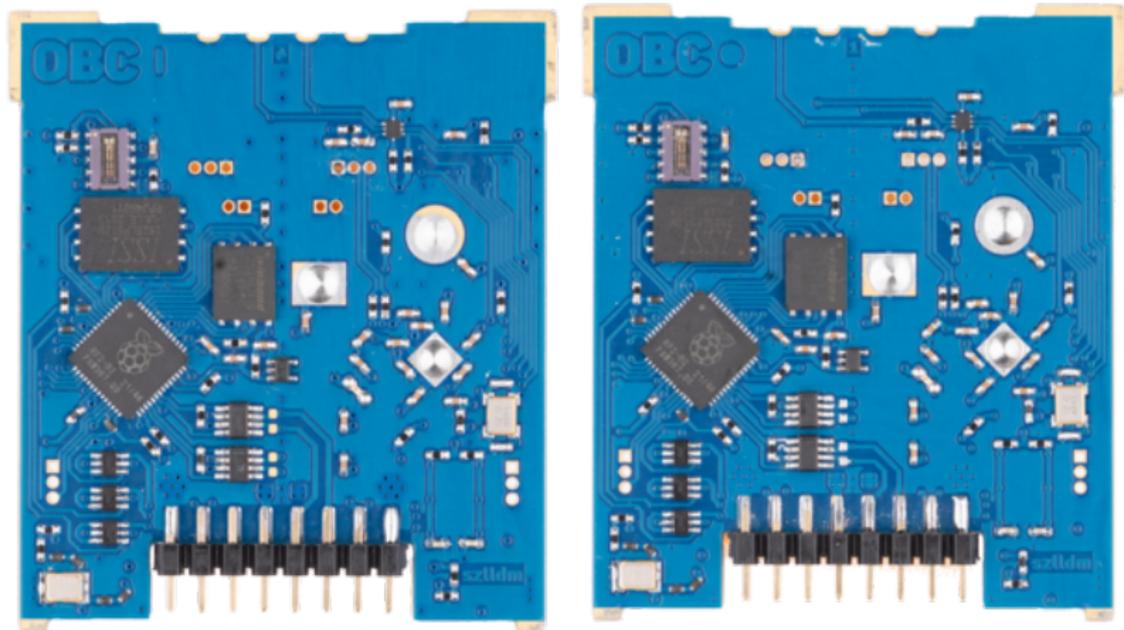
Hunity (NMHH-1) 8



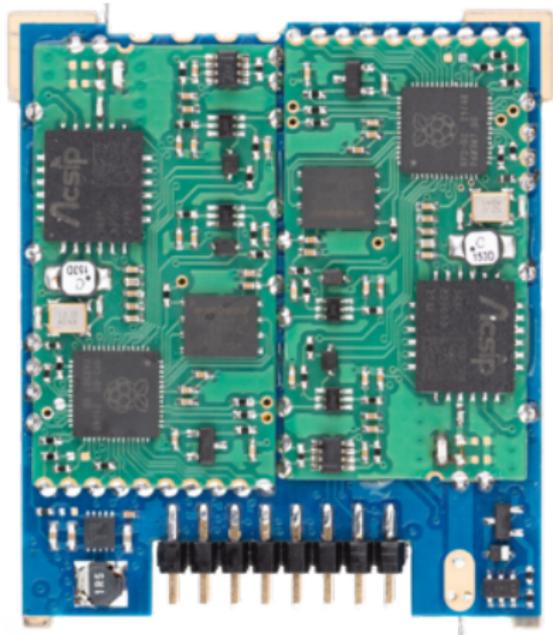
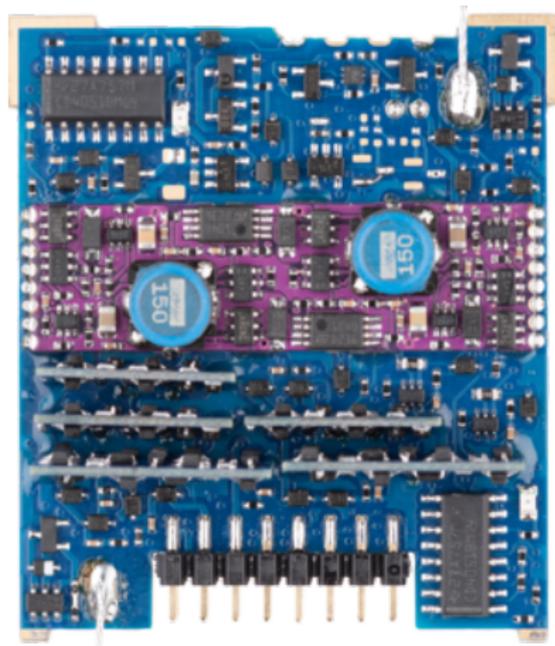
Electrical Power System



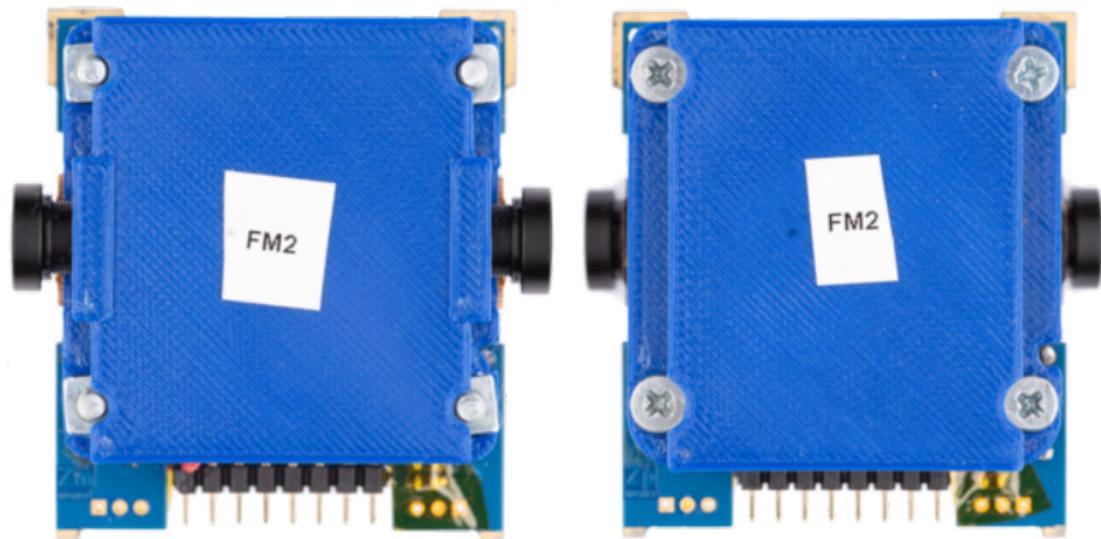
On-Board Computer



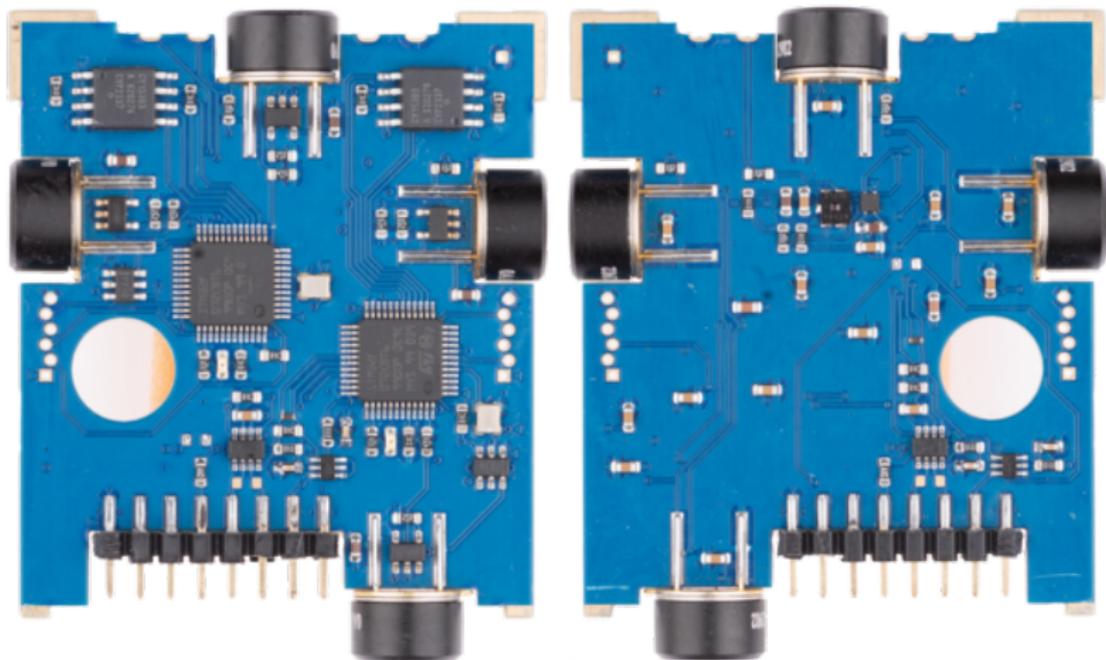
COMmunicational System



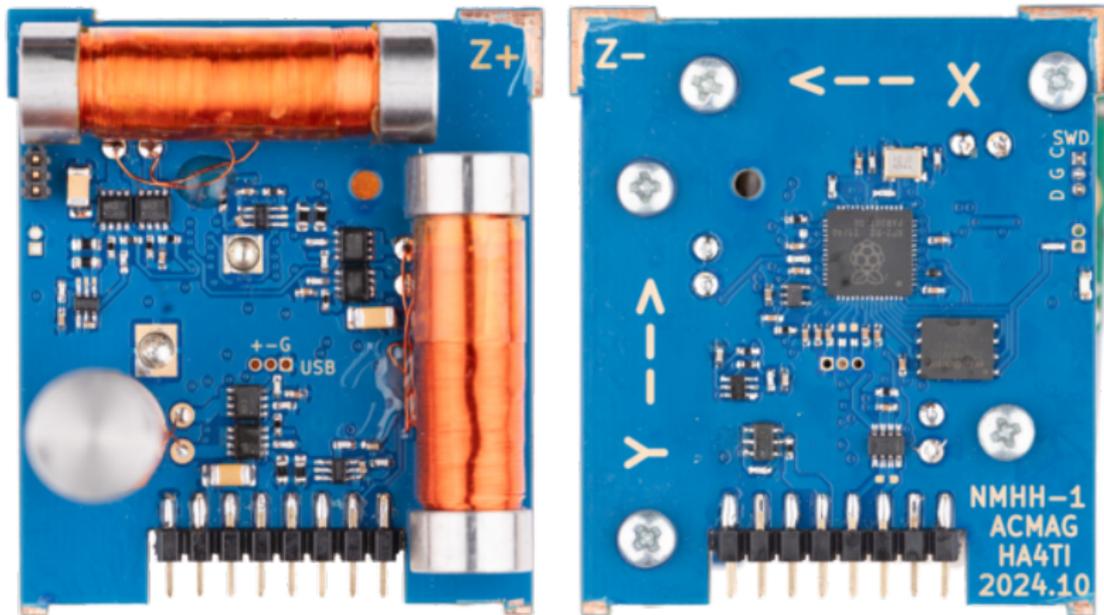
Battery + CAMera



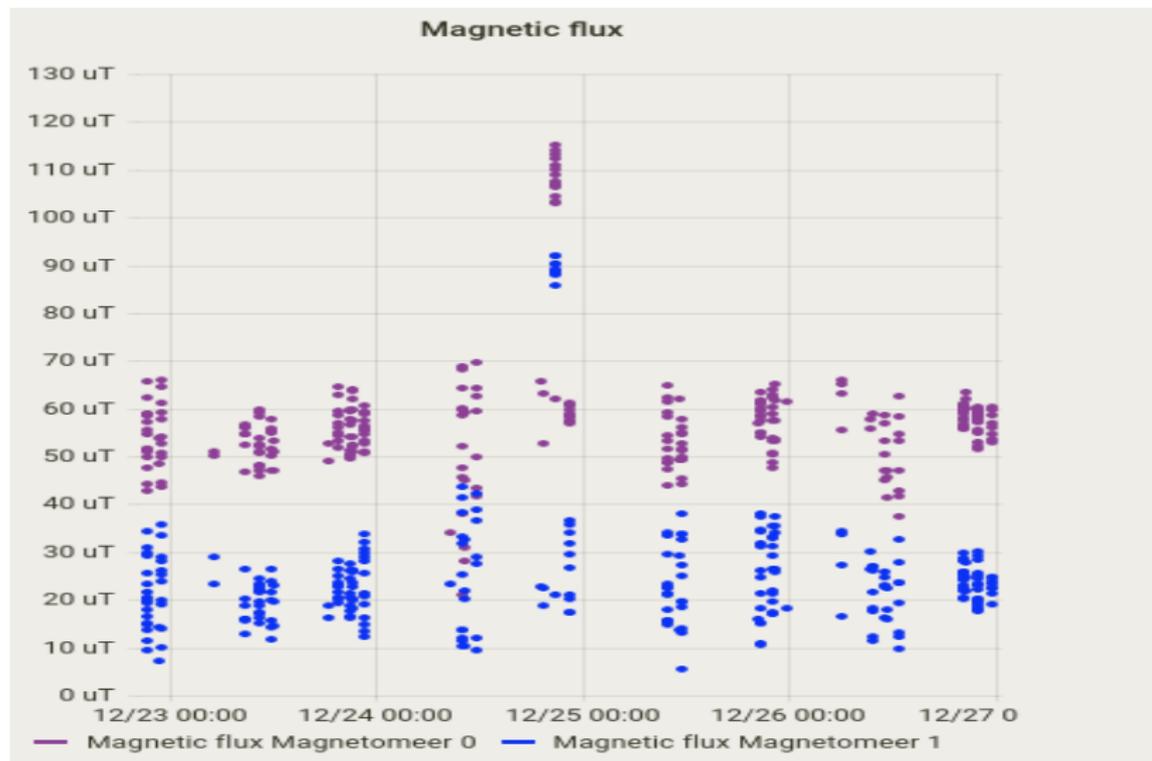
SUN Sensor



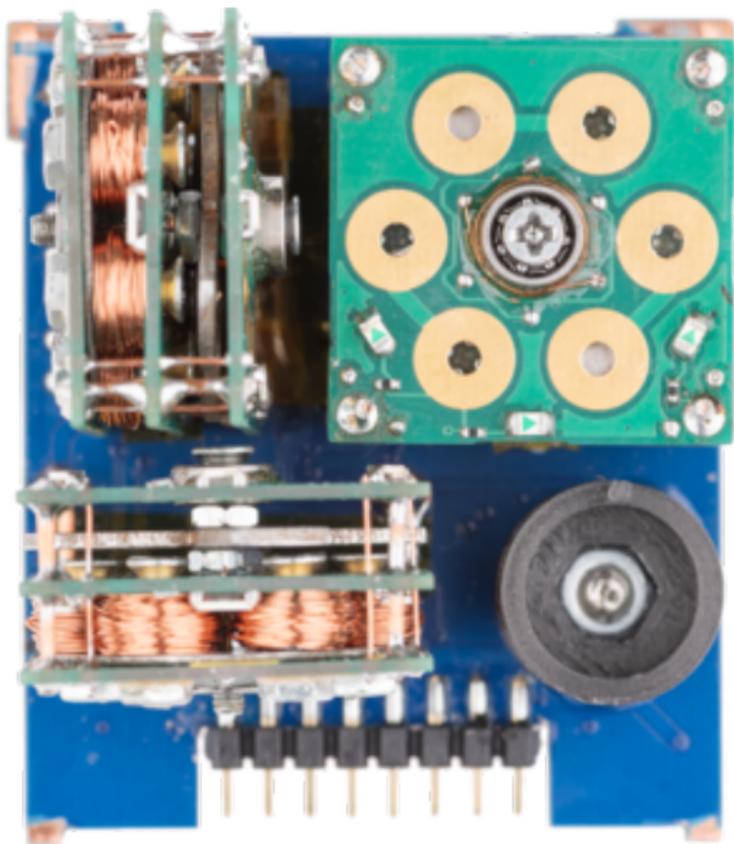
Attitude Control MAGnetic 1



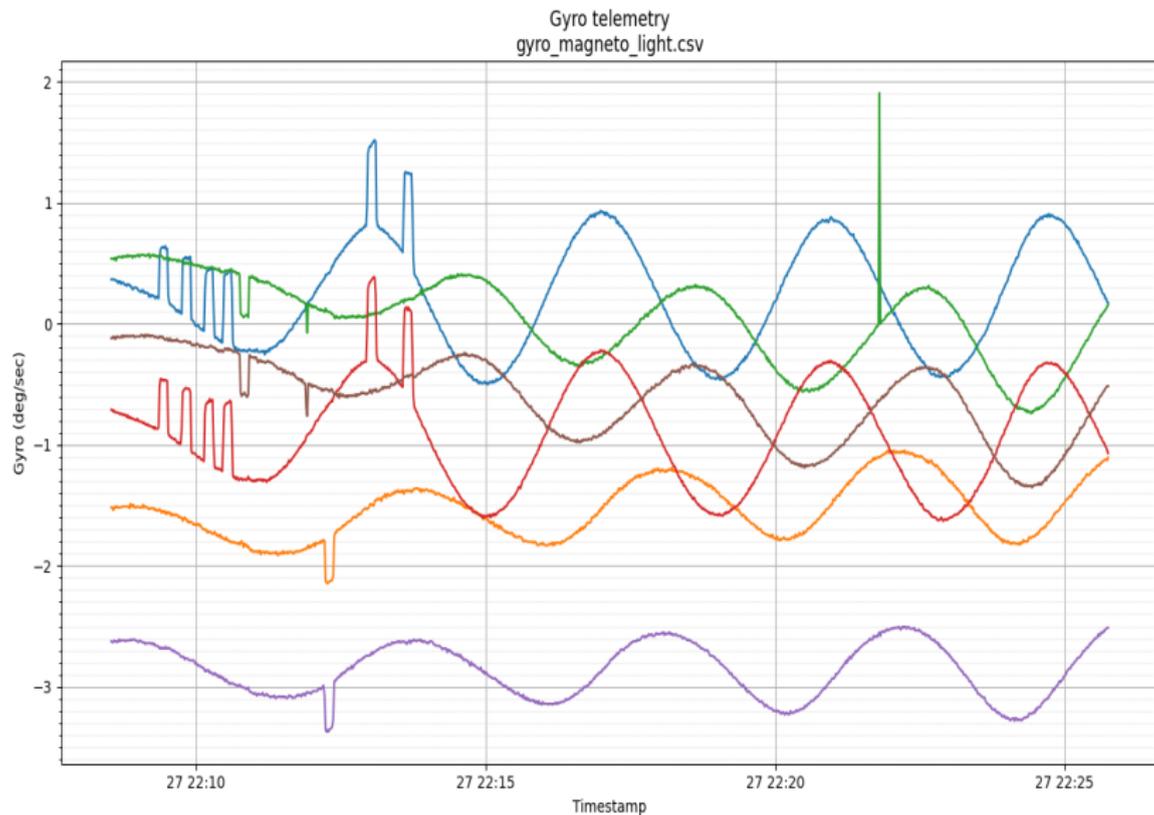
Attitude Control MAGnetic 2



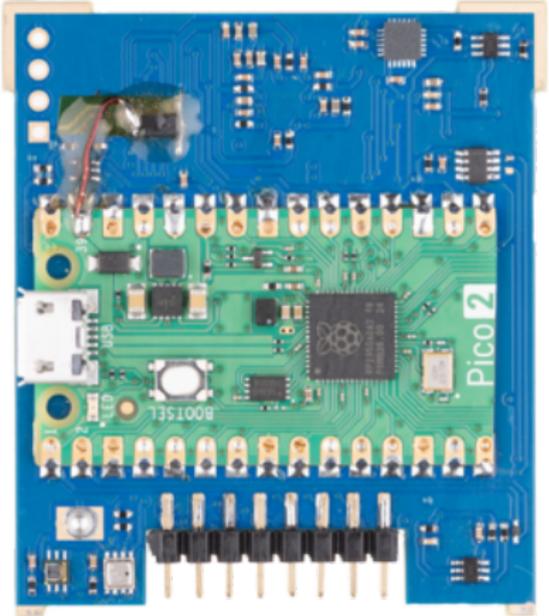
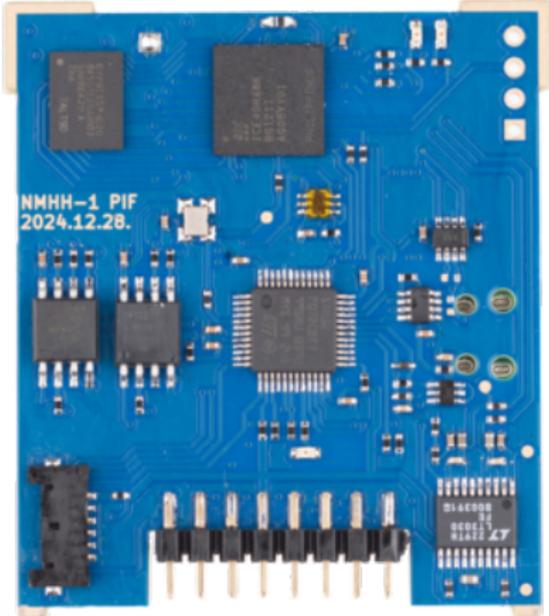
Attitude Control MOTor 1



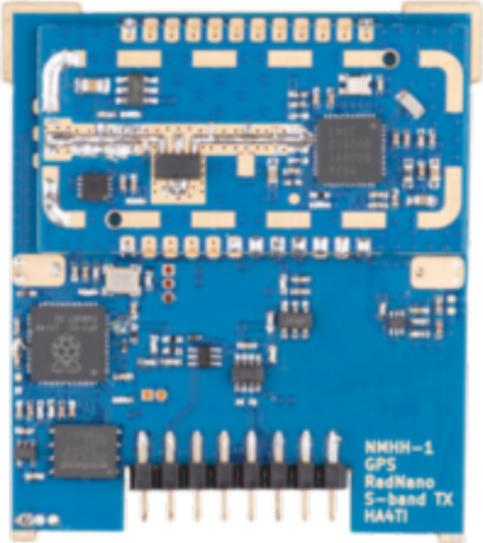
Attitude Control MOTor 2



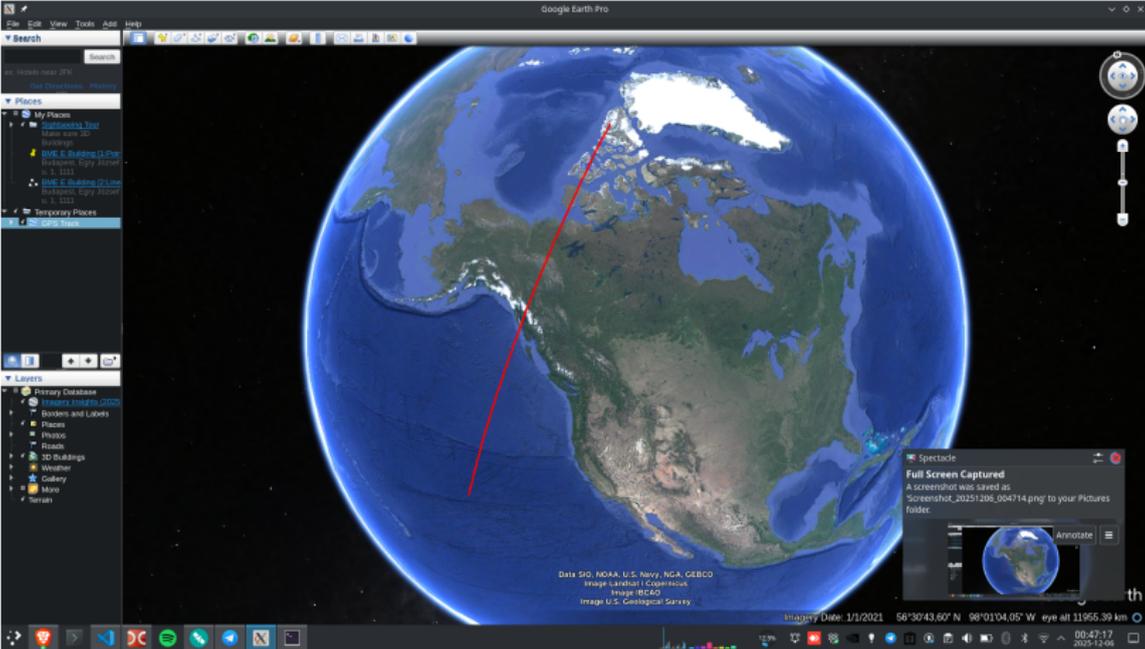
Pico2 + FPGA



GPS + Radiation Sensor 1



GPS + Radiation Sensor 2



Experiments: SZESAT

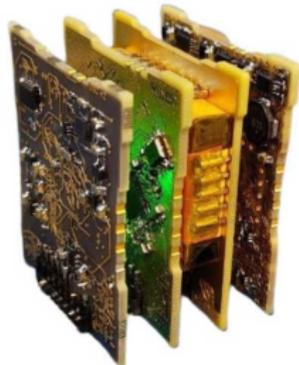
Győr Széchenyi István University SZESAT team

The SZESAT is a satellite within the NMHH-1 mission, developed by Széchenyi István University of Győr, featuring advanced technological demonstrations and experiments.

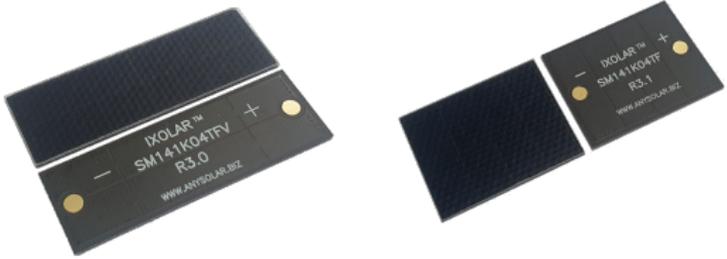
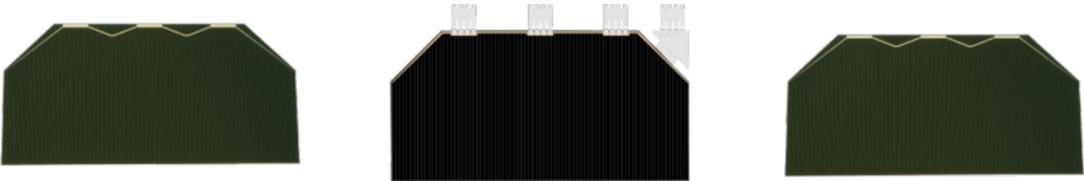
-  Satellite within HUNTY
-  **Technological demonstration**
-  **Laser communication experiment**
-  Orientation detection with semiconductor sensor

More information:

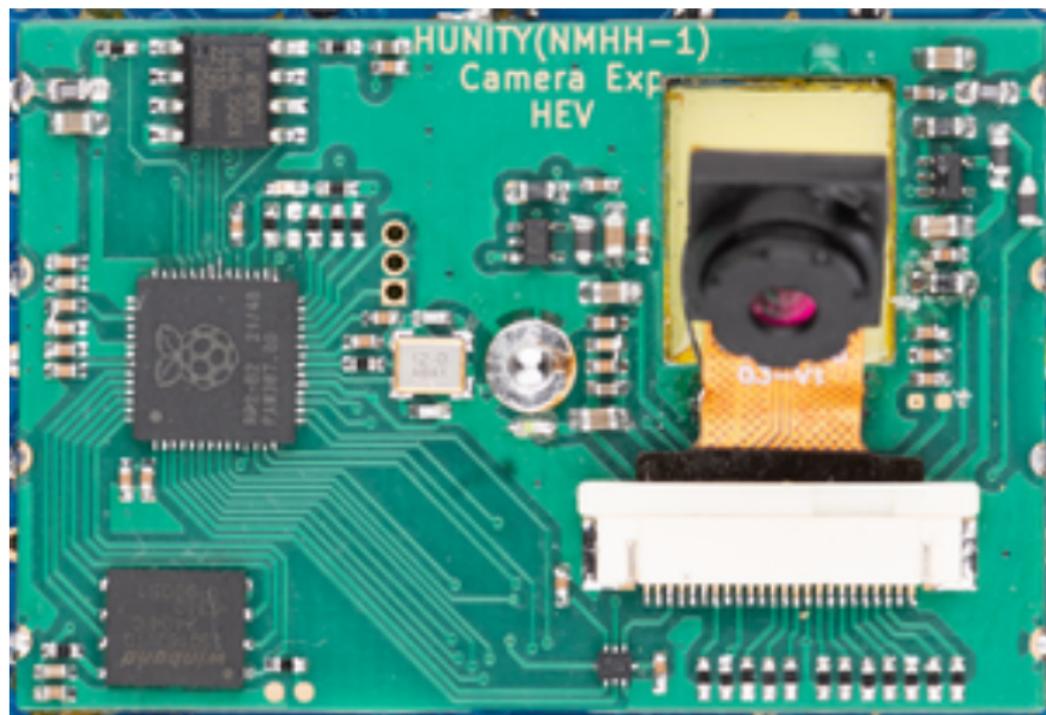
[Visit SZESAT Website](#) 



Experiments: Solar Cells



Experiments: Selfie camera



Hunity



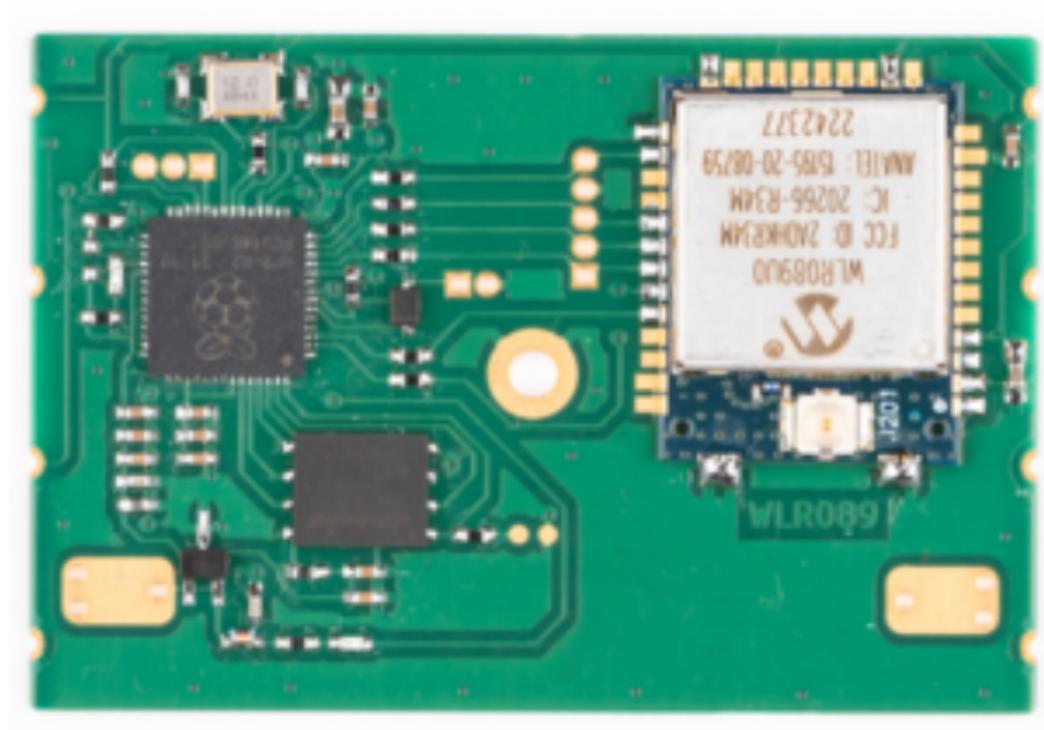
Moon



Earth



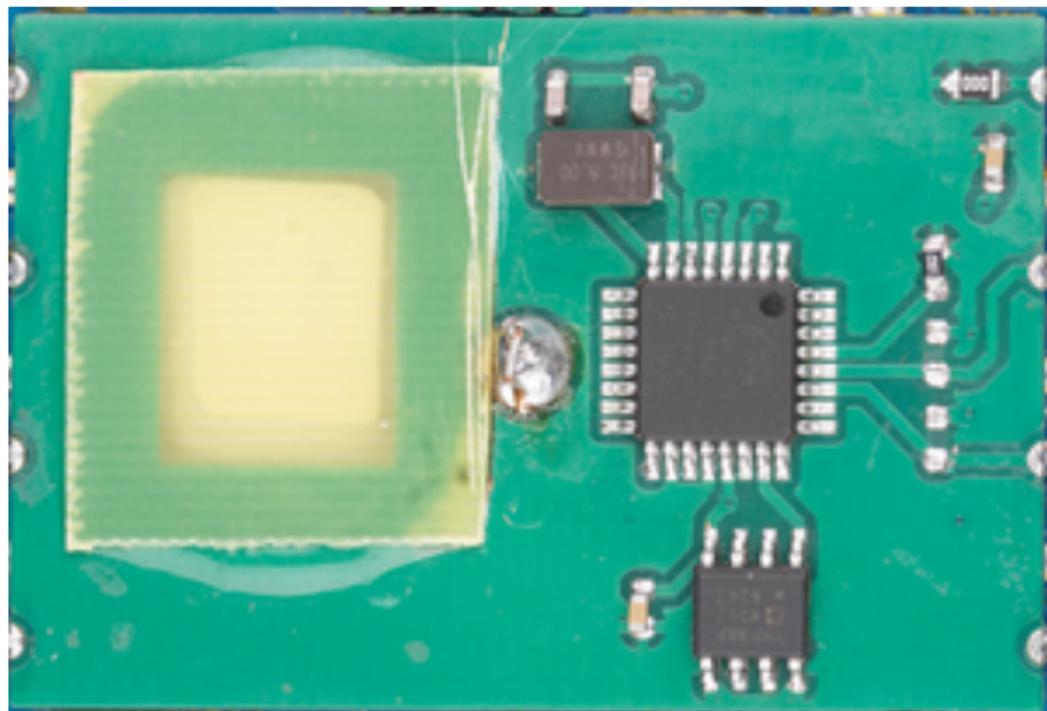
CanSat WLR COM module + Resonant Radar Reflector



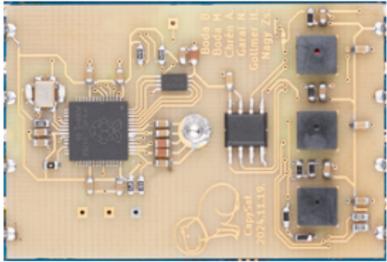
SpASIC



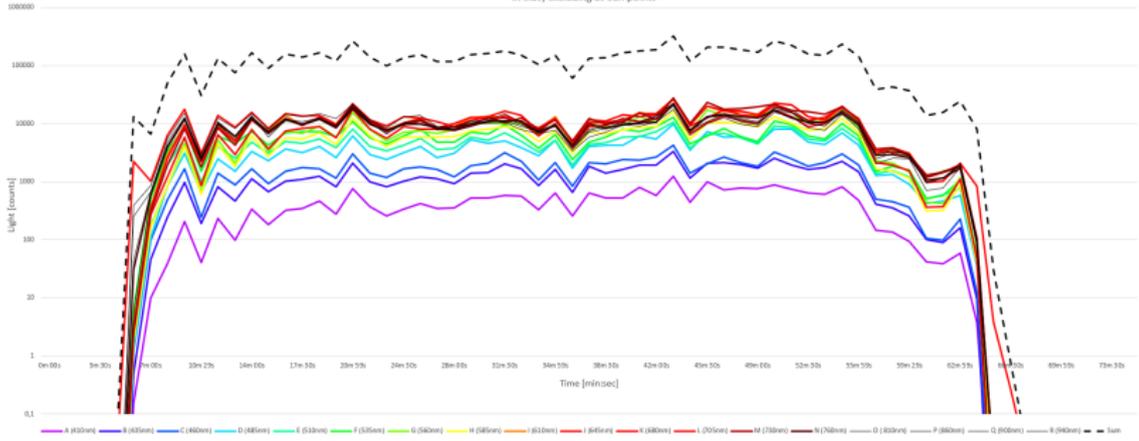
Experiment from Serbia



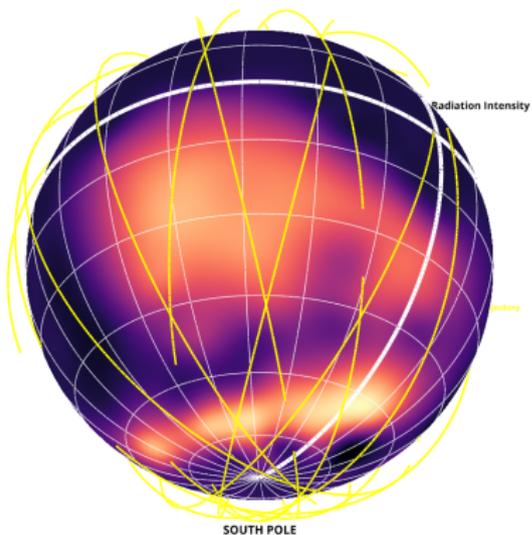
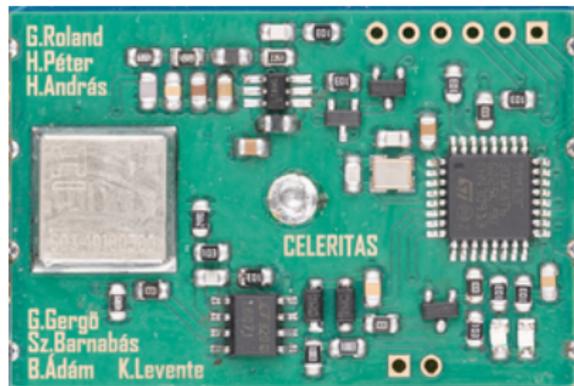
CanSat 2024: CopySat



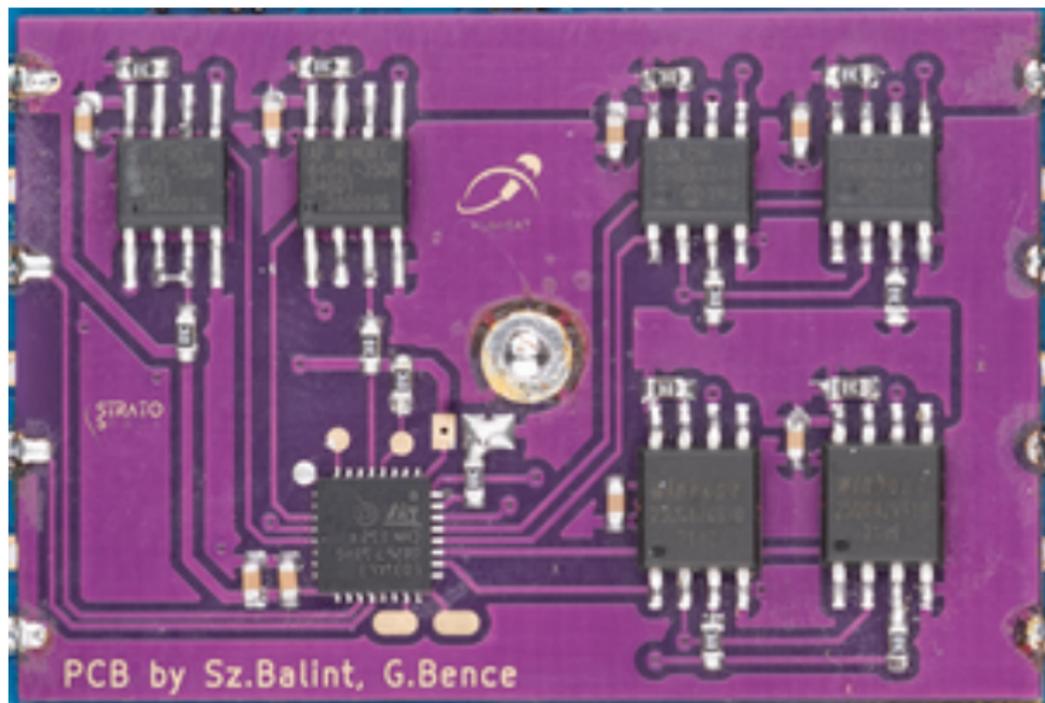
Light at given time during orbit
average from 18 passes
lit side, excluding at-Sun points



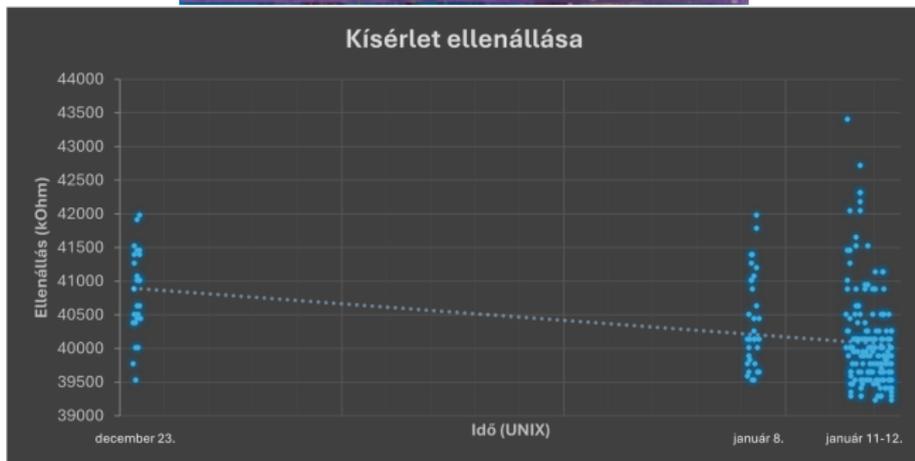
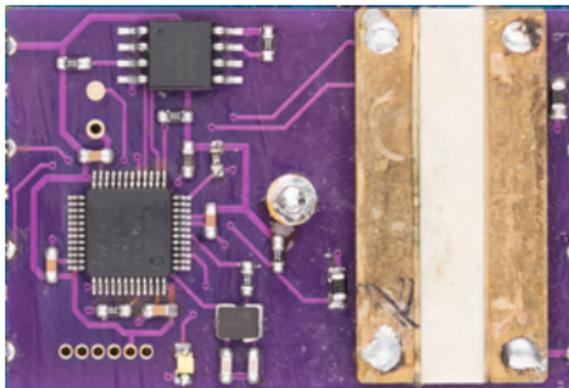
CanSat 2024: Celeritas



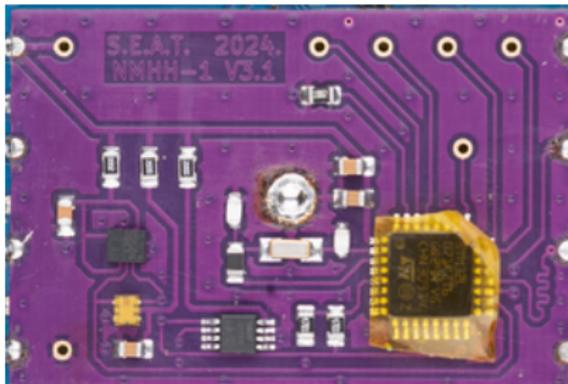
CanSat 2024: Kulinsat



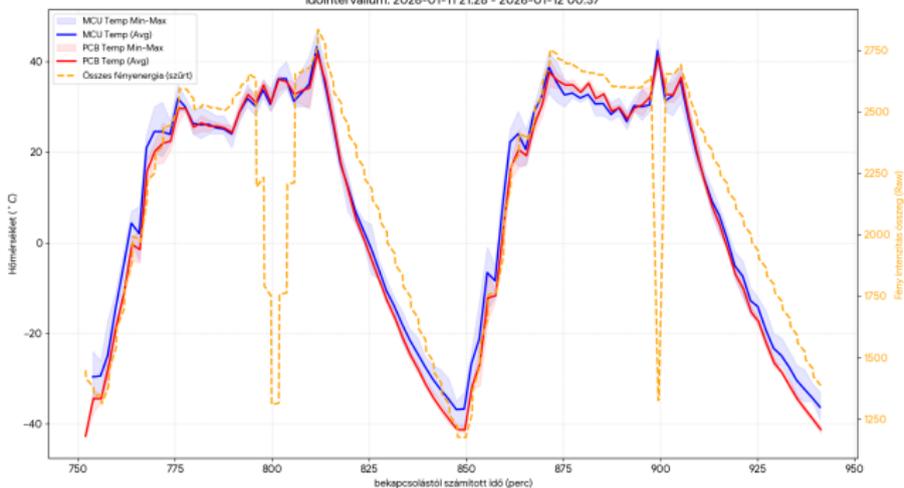
CanSat 2024: Onionsat



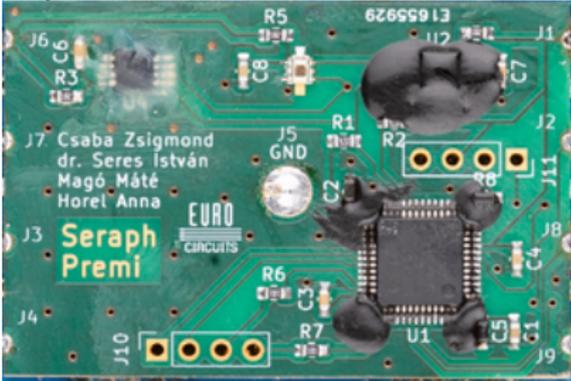
CanSat 2024: S.E.A.T



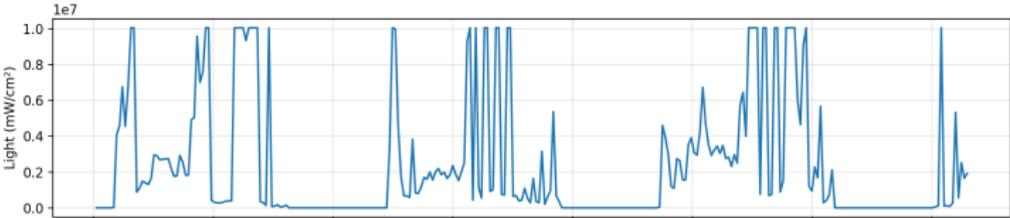
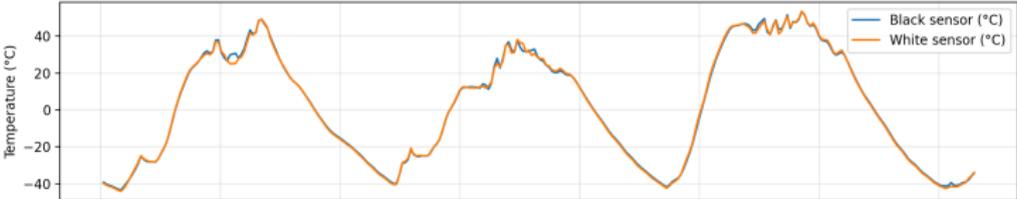
HUNITY - SEAT panel hőmérséklet és fényenergia (Szegmens 2)
Időintervallum: 2026-01-11 21:28 - 2026-01-12 00:37



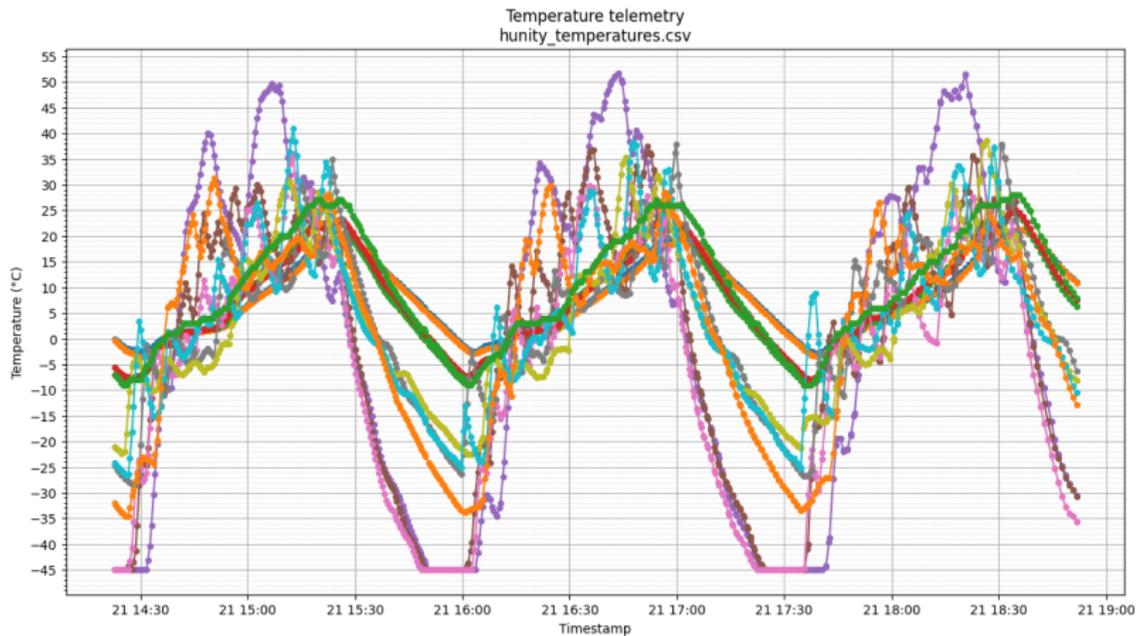
CanSat 2024: Seraph



Hunity Seraph data — 20251223.csv



Hunity (NMHH-1) Ground Station 1



Hunity (NMHH-1) Ground Station 2

BME - GND - Chromium

BME - GND x +

gnd.bme.hu

Dudás Levente... nyomtató DJ BOBO LA BO... radar BME - GND ActaAstronautica 46 Új lap sband Index of /116 Kezdőlap - BME... Minden könyvjelző

 **BME - GND** "a határ a csillagos ég"

Kezdőlap Hírek Rólunk Galéria Műholdak Amatőrök Támogatók Kapcsolat

FÖLDI ÁLLOMÁS

műholdkövetés, vezérlés

[bővebben>>](#)



Legújabb

Kapu Tibor ISS összeköttetés
2025.07.03.
2025. július 3-án, több hónapos készülőds után sikeresen felvették a kapcsolatot a magyar diákok Kapu Tiborral az ISS fedélzetén. Nagyon jó volt a kapcsolat. A kísérleti díri készült felvételt itt megnézhető: [youtube](#)
[Tovább>>](#)

antenna

SMOG-1 jeladó
2021.09.11.
2021. Április 29-án az O.M.K. épület tetőszintjére kikerült egy távvezérelt jeladó, amely az elsődleges SMOG-1 földi vezérlő állomás rádiófrekvenciás paramétereinek mérésére, kalibrálására szolgál: érzékenység mérés, antenna iránykarakterisztika mérés, nyereség mérés, irányélességi szög mérés, iránykalibráció.

Ajánlott

 **HUNITY**
Oktatási célú 15x5x5 cm-es(3pq) pocketcube
[Tovább>>](#)

 **MRC-100**
Oktatási célú 15x5x5 cm-es(3pq) pocketcube
[Tovább>>](#)

 **SMOG-1 és SMOG-P**

1 2 3 4 BME - GND - Chromium lev@levi: -/mogtpr...

14:52

Hunity (NMHH-1) Ground Station 3

BME - GND -- Chromium

BME - GND x +

gnd.bme.hu/ham.php

Dudás Levente... nyomtató DJ BOBO LA BO... radar BME - GND ActaAstronautica 46 Új lap sband Index of /16 Kezdőlap - BME... Minden könyvjelző

BME - GND "a határ a csillagos ég"

Kezdőlap Hírek Rólunk Galéria Műholdak **Amatőrök** Támogatók Kapcsolat

Élő kameraképek



parabola3m 2025-11-14 14:57:14

parabola4mS 2025-11-14 14:57:14

A fenti videókat két Raspberry PI és a hozzájuk tartozó kamerák szolgáltatják.

Web SDR

MŰHOLD KÖVETÉS

Jelenleg több rádióamatőr műholdat is követünk, alkalom szerűen, ekkor lehet a web SDR felületén keresztül, hallgatni az éppen aktuális műhold jeleit.

1 2 3 4 BME - GND - Chromium levi@levi: /mogtpr... Képek 14:57

Hunity (NMHH-1) Ground Station 4

The image is a screenshot of a web browser displaying the HUNITY Satellite website. The browser's address bar shows the URL `gnd.bme.hu/hunity`. The website's header includes navigation links for Home, Subsystems, Payload, Tune In, Publications, Sponsors, Team, and Gallery, along with language options for HU and EN. The main banner features a satellite in orbit over Earth with the text "HUNITY Satellite" and "A student-developed satellite project by Budapest University of Technology and Economics". Below the banner are two buttons: "Explore Subsystems" and "Contact Us".

The lower section of the page is titled "Cutting-Edge Satellite Technology" and contains the text: "HUNITY combines advanced subsystems to create a powerful research platform in space". Below this text are four image placeholders for various satellite components, with the second and third ones showing detailed views of blue printed circuit boards (PCBs) populated with electronic components.

The browser's taskbar at the bottom shows several open windows, including the current page and a file explorer window named "Képek". The system clock indicates the time is 14:54.

Hunity (NMHH-1) Operation 1

The screenshot displays the OpenWebRX web application interface in a Chromium browser. The browser's address bar shows the URL `eteto.bme.hu:8073`. The page header includes the OpenWebRX logo and the station information: **BME Eteto 4.5m dish**, Budapest, Hungary | Loc: [N97ML, ASL: 160 m, [maps]].

The main area is a waterfall plot showing frequency from 427.35 MHz to 427.45 MHz. A yellow cursor is positioned at 437.3835 MHz. The plot shows a signal at this frequency, with a yellow highlight above it. The plot is overlaid with a grid of horizontal lines in various colors (red, green, blue, yellow).

At the bottom of the plot, there are three status bars: **Audio buffer [0.7 s]**, **Audio output [44.2 kbps]**, and **Audio stream [53 kbps]**. Below these are **Network usage [194.4 kbps]**, **Server CPU [30%]**, and **Clients [5]**.

A control panel is visible in the bottom right corner, showing the current frequency **437.3835 MHz** and **437.404.8 MHz**. It includes mode selection buttons for **FM**, **AM**, **LSB**, **USB**, and **CW**. Below these are **DIG** and **DIG** dropdown menus, and several sliders for volume and gain. A signal strength indicator shows **-67.5 dB**.

The browser's taskbar at the bottom shows the system tray with the time **11:59** and several application icons, including `qterminal - 4 windows`.

Hunity (NM-HH-1) Operation 2

The image displays two browser windows side-by-side. The left window shows the Hunity web interface, which is a text-based log of system and component data. The right window shows the OpenWebRX SDR Web App, featuring a spectrum plot and a control panel.

Left Window: Hunity (NM-HH-1)

URL: nem.bme.hu:5580/hunity/

Log content:

```
BAT-0 panel temperature: 2.3 [C][0 seconds ago]
BAT-1 battery voltage: 4372 [mV][0 seconds ago]
BAT-1 battery current: 244 [mA][0 seconds ago]
BAT-1 temperature: 2.4 [C][0 seconds ago]
BAT-1 panel temperature: 1.1 [C][0 seconds ago]
BAT-0 GYRD-X: 3.222504[0 seconds ago]
BAT-0 GYRD-Y: -10.299438[0 seconds ago]
BAT-0 GYRD-Z: -0.994415[0 seconds ago]
BAT-1 GYRD-X: 1.772003[0 seconds ago]
BAT-1 GYRD-Y: -17.121887[0 seconds ago]
BAT-1 GYRD-Z: -1.389904[0 seconds ago]
BAT-0 MAGNETO-X: 7360 [nT][0 seconds ago]
BAT-0 MAGNETO-Y: 38224 [nT][0 seconds ago]
BAT-0 MAGNETO-Z: -29428 [nT][0 seconds ago]
BAT-1 MAGNETO-X: -5029 [nT][0 seconds ago]
BAT-1 MAGNETO-Y: 16113 [nT][0 seconds ago]
BAT-1 MAGNETO-Z: -49353 [nT][0 seconds ago]
EXP temperature: -409.5 [C][0 seconds ago]
Wing-XaYm temperature: -409.5 [C][0 seconds ago]
Wing-ApYm temperature: -409.5 [C][0 seconds ago]
Sidepanel-Xm temperature: -409.5 [C][0 seconds ago]
Sidepanel-Xp temperature: -409.5 [C][0 seconds ago]
Sidepanel-Ym temperature: -409.5 [C][0 seconds ago]
Sidepanel-Yp temperature: -409.5 [C][0 seconds ago]
Sidepanel-Zm temperature: -409.5 [C][0 seconds ago]
STSDIN: 126 bytes
TELEMETRY_04 from OBC1
Timestamp: 2025-12-04 11:00:06
Uptime: 353612
Last File-ID: 530
Telemetry inter packet gap: 4.0 [sec]
Telemetry cycle end sleep: 10.0 [sec]
RTCC temperature: 1.0 [C][=red seconds ago]
OBC voltage: 3311 [mV][0 seconds ago]
PCU-0 boot counter: 6511 seconds ago
PCU-0 uptime: 485614[1 seconds ago]
PCU-1 uptime: 485614[1 seconds ago]
PCU-0 UNREGBUS voltage: 4395 [mV][1 seconds ago]
PCU-1 UNREGBUS voltage: 4395 [mV][1 seconds ago]
PCU-0 REGBUS voltage: 3360 [mV][1 seconds ago]
PCU-1 REGBUS voltage: 8191 [mV][1 seconds ago]
SDC-0 input current: 170 [mA][1 seconds ago]
SDC-0 input voltage: 4448 [mV][1 seconds ago]
SDC-0 output current: 202 [mA][1 seconds ago]
SDC-0 output voltage: 3360 [mV][1 seconds ago]
SDC-0 low flag: 0x0[1 seconds ago]
SDC-1 input current: 0 [mA][1 seconds ago]
SDC-1 input voltage: 4395 [mV][1 seconds ago]
SDC-1 output current: 0 [mA][1 seconds ago]
SDC-1 output voltage: 31 [mV][1 seconds ago]
SDC-1 low flag: 0x0[1 seconds ago]
COM-0 mode: 4[0 seconds ago]
COM-0 TX datarate: 1250 [bps][0 seconds ago]
COM-0 TX power: 0 [dBm][0 seconds ago]
COM-0 RX datarate: 1250 [bps][0 seconds ago]
```

Right Window: OpenWebRX | Open Source SDR Web App for Everyone!

URL: nem.bme.hu:8073

Frequency: 437.38 MHz

Mode: FM

Gain: 41

Volume: 50

Audio output: 44.1 kbps

Server CPU: 26%

Clients: 4

Hunity (NMHH-1) Operation 3

The screenshot displays the OpenWebRX web application interface in a Chromium browser. The browser's address bar shows the URL `eteto.bme.hu:8073`. The page header includes the OpenWebRX logo and server information: "BME Eteto 4.5m dish, Budapest, Hungary | Loc: [N97M, ASL: 160 m, [maps]]". Navigation links for "Status", "Log", and "Receiver" are visible, along with the HASKFU logo.

The main area is a waterfall plot showing a spectrum of signals. The frequency axis at the top is marked with 437.3 MHz, 437.38 MHz, 437.4 MHz, and 437.4 MHz. A yellow cursor is positioned at 437.3835 MHz. The plot shows a dense collection of horizontal lines, with a prominent signal around 437.3835 MHz.

At the bottom of the interface, there are several status bars: "Audio buffer [2.0 s]", "Audio output [44.3 kbps]", "Audio stream [41 kbps]", "Network usage [194.7 kbps]", "Server CPU [43%]", and "Clients [7]".

On the right side, a control panel is visible, showing the current frequency "437.3835 MHz" and "437.4775 MHz". It includes mode selection buttons for "FM", "AM", "LSB", "USB", and "CW", with "USB" currently selected. Below these are "DIG" controls, a volume slider, and a signal strength indicator showing "-58.3 dB".

Hunity (NMHH-1) Operation 4

The screenshot displays the OpenWebRX SDR Web App interface in a Chromium browser. The browser tabs include Roundcube Webmail, Beérkezett üzenetek, OpenWebRX | Open S..., and Hunity (NMHH-1). The address bar shows the URL eteto.bme.hu:8073. The page title is "OpenWebRX" and the subtitle is "BME Eteto 4.5m dish Budapest, Hungary | Loc: [N97M, ASL: 160 m, [maps]]".

The main display area is a waterfall plot showing frequency content. The x-axis represents frequency in MHz, with markers at 437.20, 437.30, 437.40, and 437.50. The plot shows a dense spectrum of signals, with a prominent signal around 437.3835 MHz. The color scale ranges from blue (low power) to red (high power).

At the bottom of the interface, there are several status bars and a control panel. The status bars show:

- Audio buffer [1.9 s]
- Audio output [44.3 kbps]
- Audio stream [41 kbps]
- Network usage [184.7 kbps]
- Server CPU [29%]
- Clients [7]

The control panel on the right side of the waterfall plot shows the current frequency: 437.3835 MHz (437.4841 MHz). It includes mode selection buttons for FM, AM, LSB, USB, and CW. Below these are controls for DIG (Digital Filter), volume, SSB (Sideband) selection, and a gain knob set to 70.0 dB. The interface also features a top navigation bar with "Status", "Log", and "Receiver" links, and a "HASKFU" logo.

Hunity (NMHH-1) - BME VIK HVT MTL + MRC



Falcon-9 Transporter-15 2025-11-19 18:18 UTC

<https://gnd.bme.hu/>

<https://gitlab.com/phorvath/smogcli2>

Environmental Tests 1 - BHE



Environmental Tests 2 - BHE

