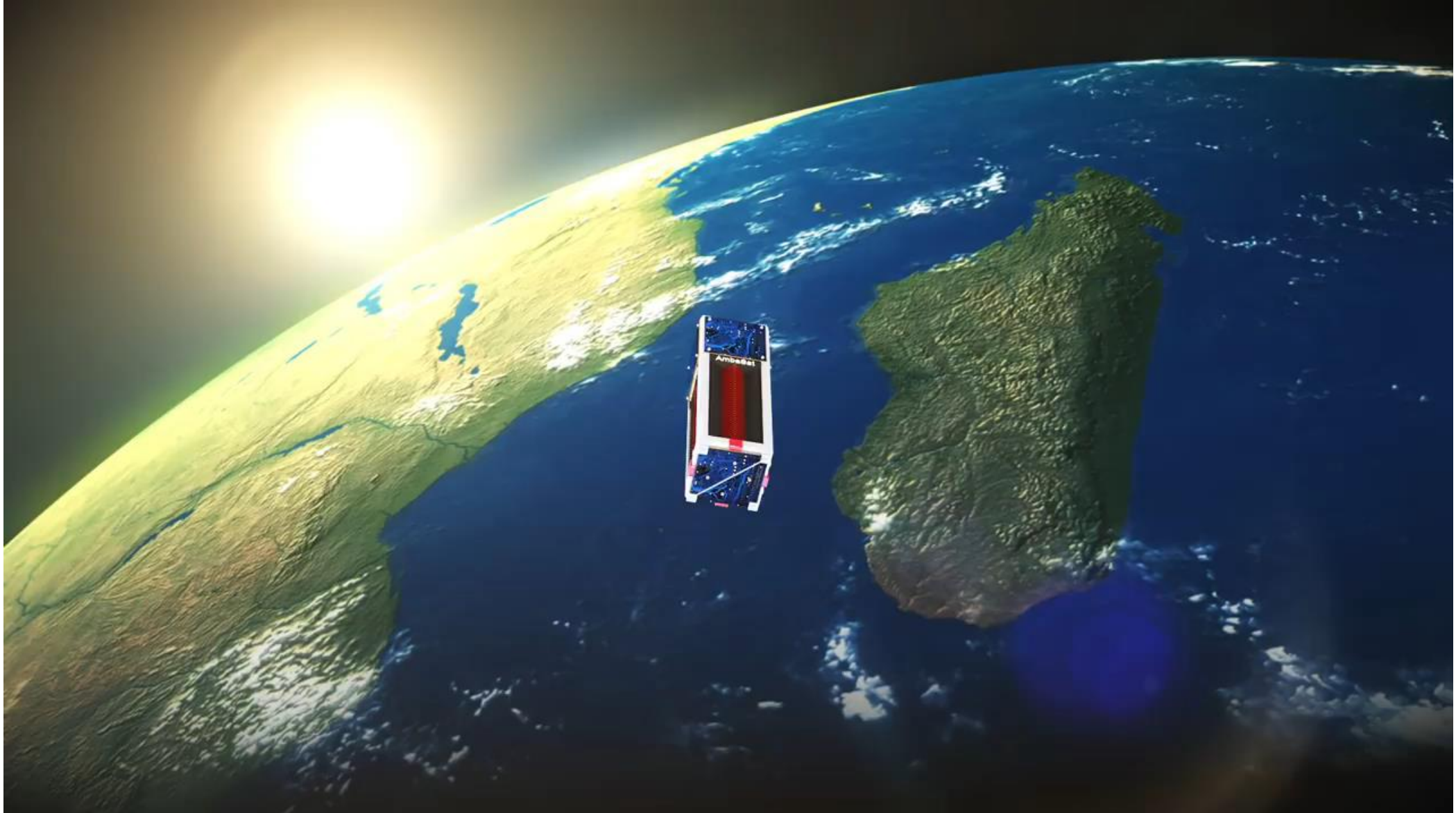
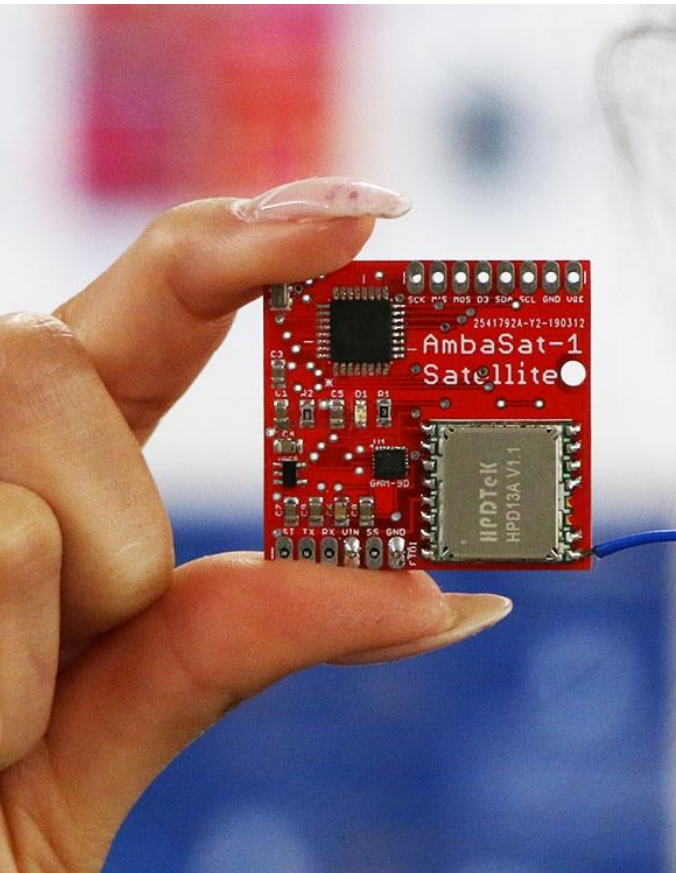


# AmbaSat-1

Frank Woutersen



# Kickstarter



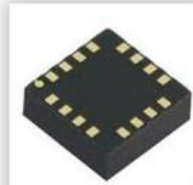
## AmbaSat-1 Satellite PCB

A tiny Sprite satellite measuring 35mm x 35mm x 5mm

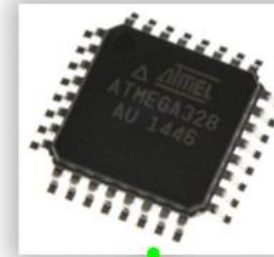
4MHz crystal/resonator  
for perfect low-power  
performance



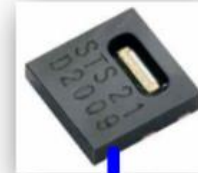
LSM9DS1  
Tri-Axis Gyroscope,  
Tri-Axis Accelerometer,  
Tri-Axis Magnetometer



LDO Voltage Regulator  
2.2V 280mV Dropout  
2.5Vout, 150mAout



ATMEGA328P-AU is an 8-bit  
high-performance picoPower  
AVR RISC-based Microcontroller  
with 32kB ISP flash memory.  
This is the 'brains' of your spacecraft.



6 different sensors available.  
This example is the STS21, a  
fully calibrated high  
accuracy Digital  
Temperature Sensor.



LoRa RFM95 Radio  
Transceiver  
Featuring ultra-long range  
spread spectrum  
communication and high  
interference immunity



# Kickstarter

**KICKSTARTER**

Thanks for backing this project—now  
you're a part of it

Creating something new is hard, full of ups and downs. Your  
pledge is an up—it's a sign that you believe in this project, and  
a step toward making it a reality.

Fri 10/05/2019 08:58



# Kickstarter

2x

**£43,049**

pledged of £26,000 goal

**250**

backers

You selected

Pledge £230 or more

AmbaSat-1 Assembled : ROCKET LAUNCH

A fully assembled AmbaSat-1. Plus a fully included rocket launch! Assembled and ready for you to code.

Secure your spot onboard the NEPTUNE rocket and get your AmbaSat-1 satellite launched into low earth orbit. A small step for some. A giant leap for others.

Rocket launch INCLUDED

INCLUDES:

- Assembled AmbaSat-1 : Solar
- ROCKET LAUNCH

ESTIMATED DELIVERY  
Oct 2019

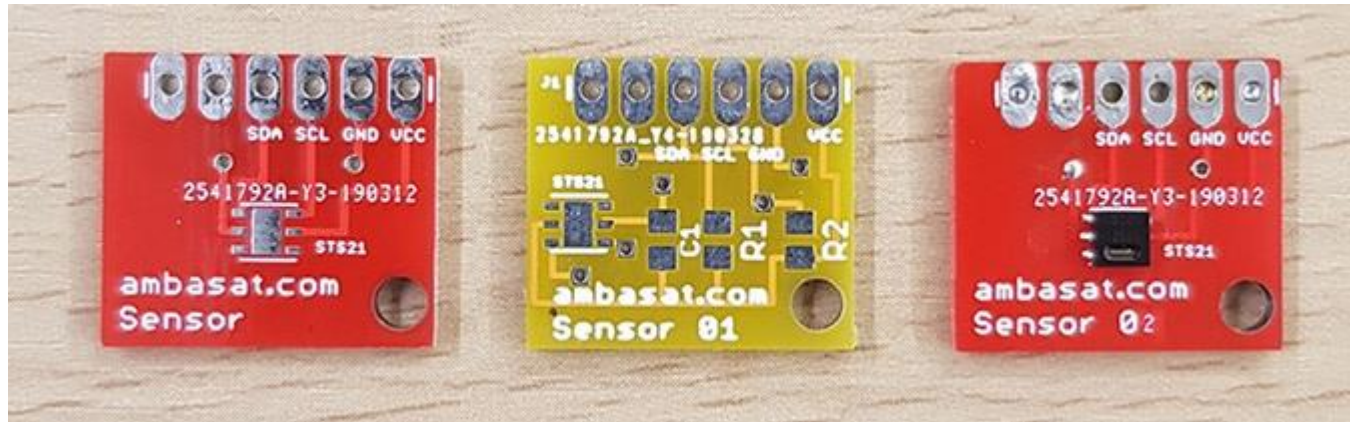
SHIPS TO  
Anywhere in the world

Limited  
41 backers

NO SURVEYS SENT

	Voornaam	Achternaam
1	Frank	Woutersen
2	Gert	Woutersen
3	Evert	Versteeg
4	Remko	Welling
5	Pieter	Holtrop
6	Ruud	Oskam
7	Henk	van der Hulst
8	Gert	Veldhuis
9	Jaap	Bruijn
10	Jacques	Emmen
11	Teije	ter Bals
12	Arnold	Kolkman
13	Inter Act industrial automation	
14	Lambertus	IJsselstein
15	Bertus	Huis in 't Veld
16	Wil	Put
17	Rene	Kuipers
18	Roland	Atos
19	Edsard	Boelen
20	Jeroen	van Bussel
21	Marcel	Meek

# Sensoren



***Temperature & Humidity Sensor – STS21***

***Environmental Sensor – BME680 (gas, pressure, temperature & humidity)***

***Ultraviolet (UV) Sensor - GUVA-S12SD***

***Analog Gas Sensor - MQ2 probe (hydrogen and methane)***

***Ambient Light Sensor - VEML7700***

**Can I fit my own sensor?** Yes, as long as your sensor conforms to certain criteria, including size and safety, then you can fit your own. Your AmbaSat satellite provides additional connectivity pins which expose the ATMEGA's I2C bus, as well as digital and analogue pins, plus power.

***GPS?***

Post





Post

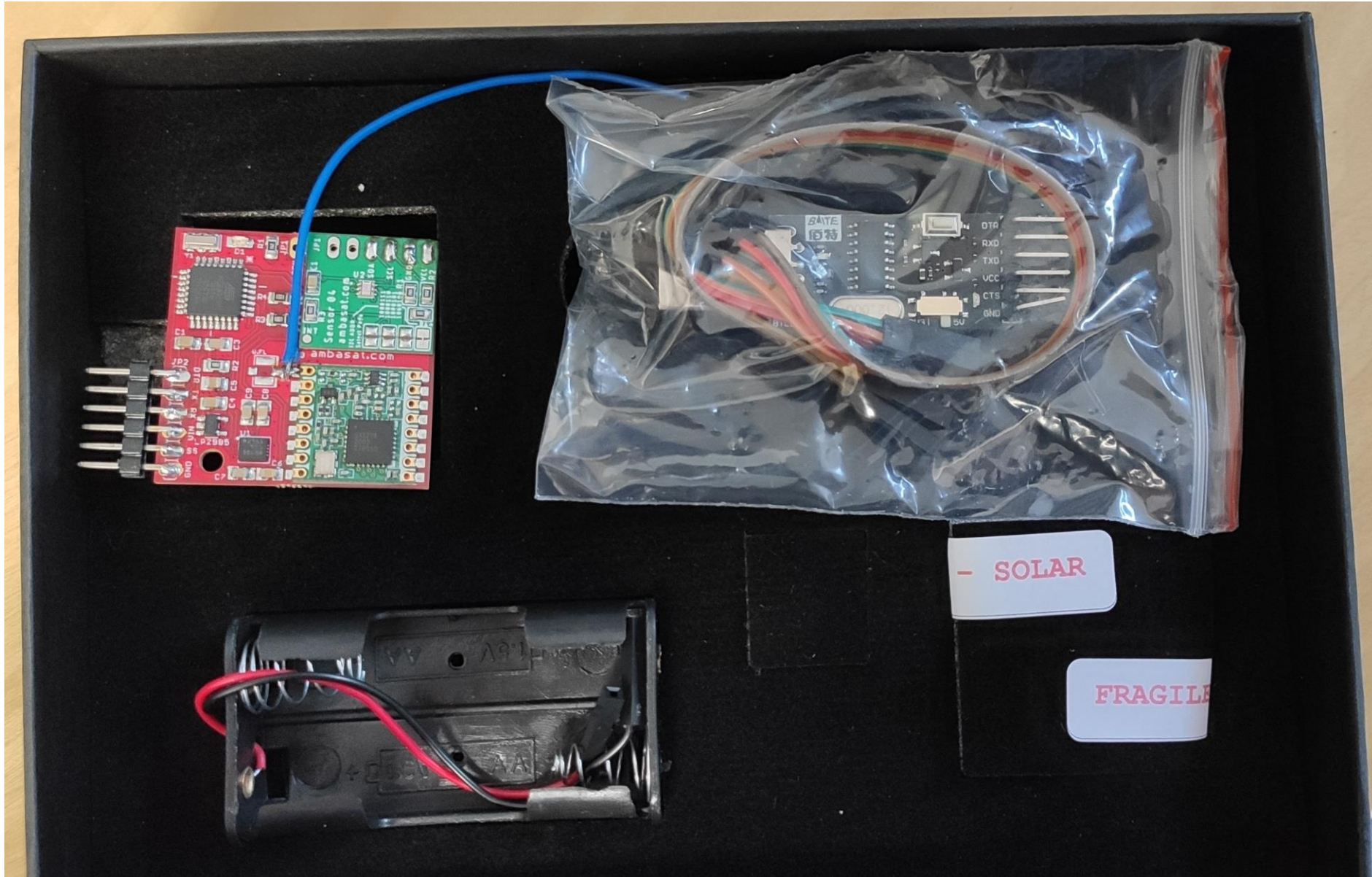


# Post

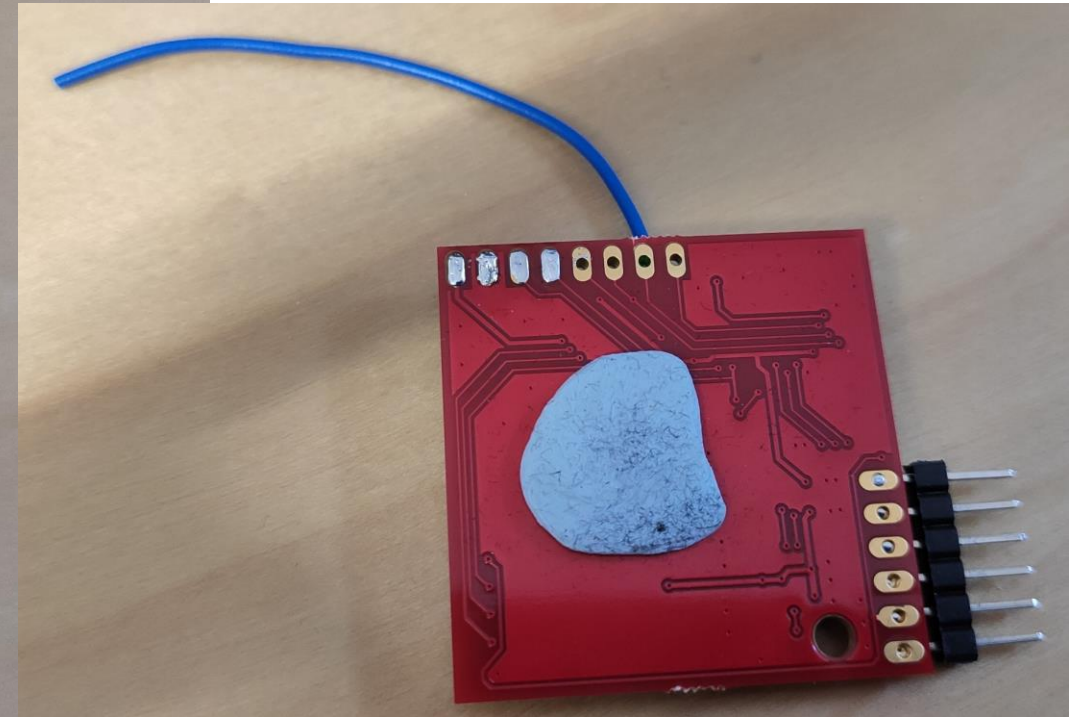
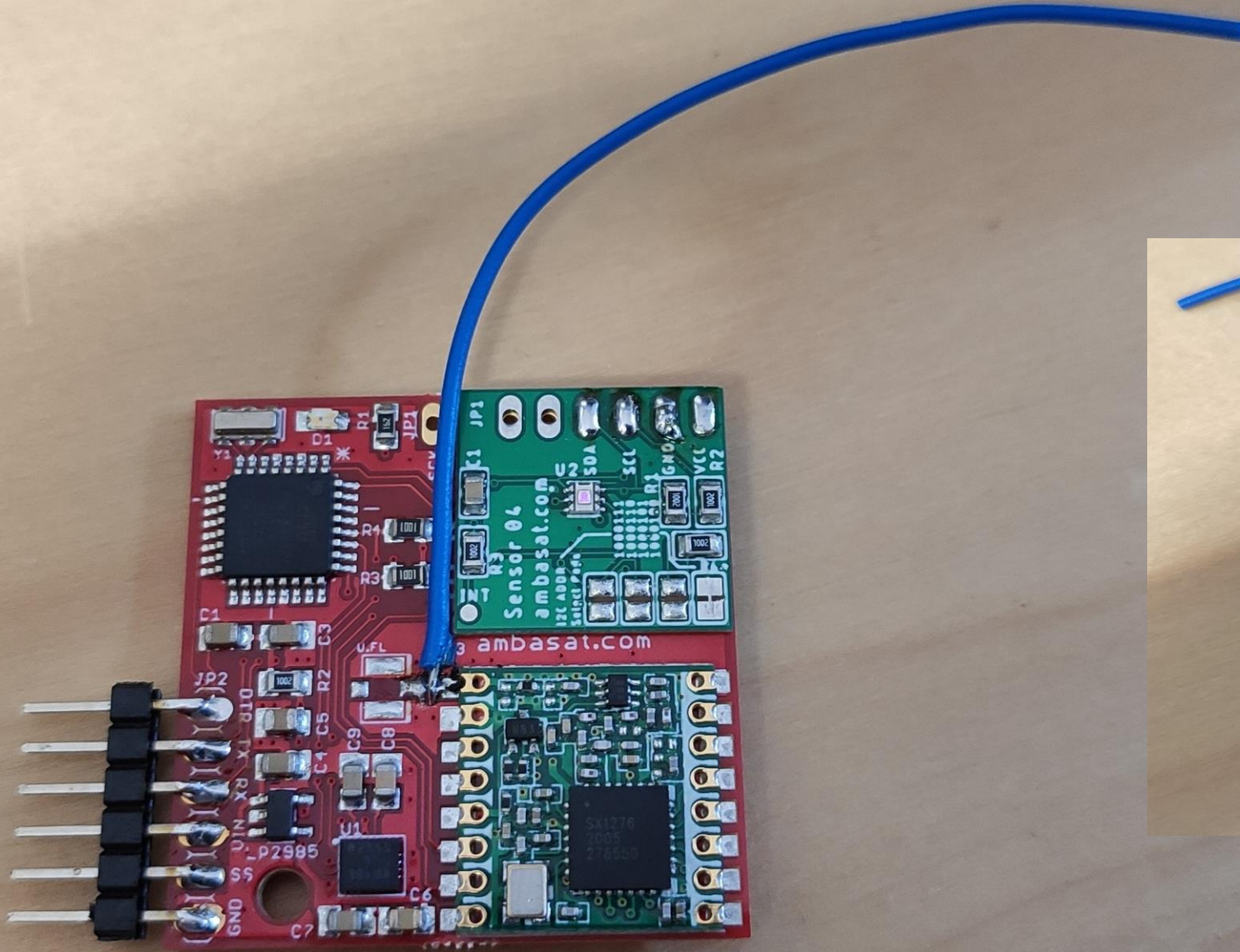




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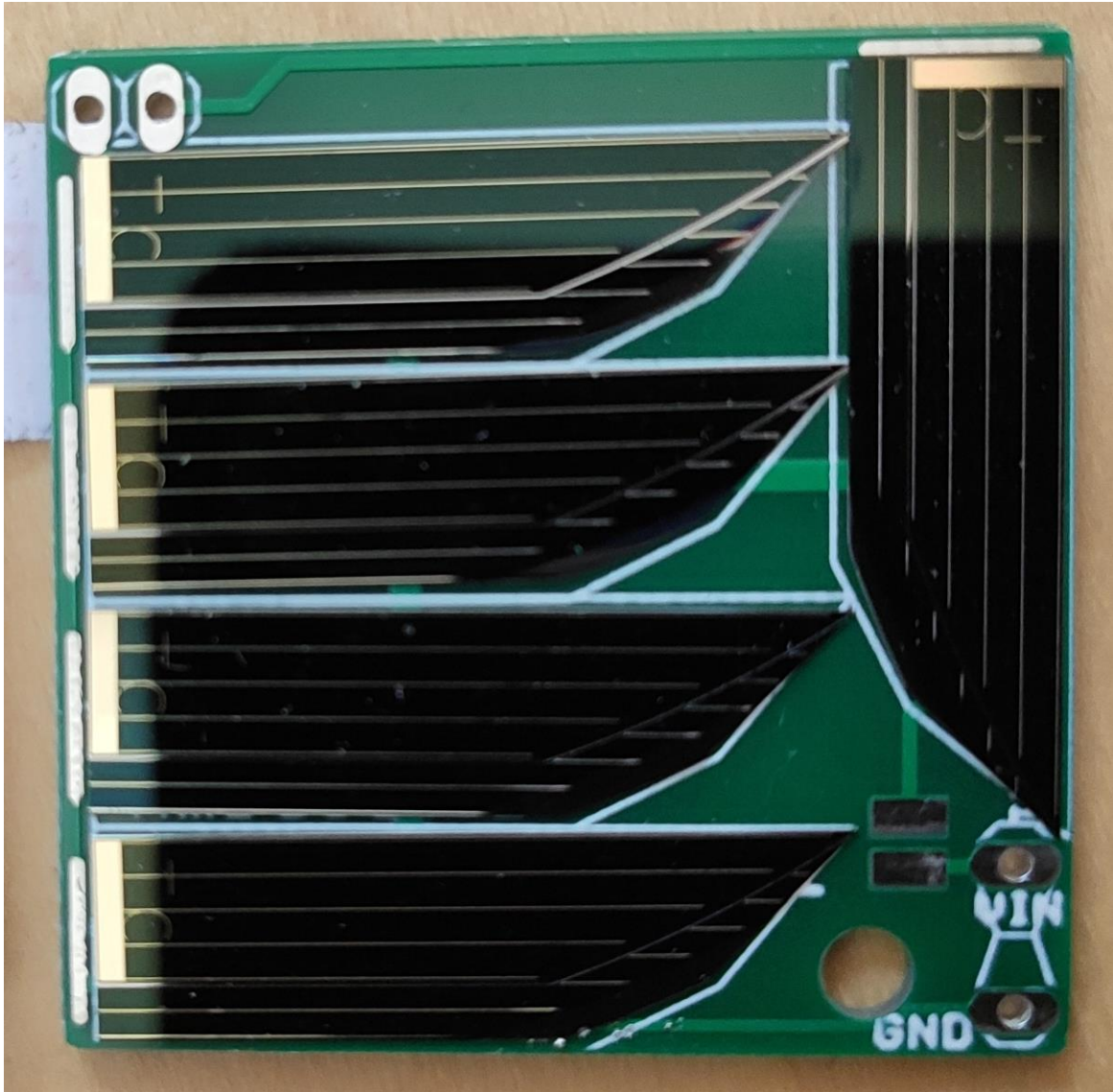








# Post



## IMPORTANT - SOLARBOARD AND SOLAR PANELS

PLEASE TREAT THE SOLARBOARD AND PANELS WITH EXTREME CARE. THE PANELS ARE VERY FRAGILE.

THE SOLARBOARD IS DESIGNED TO POWER AMBASAT-1 IN LOW EARTH ORBIT AND DOES NOT USE THE VOLTAGE REGULATOR. FOR FURTHER DETAILS, PLEASE READ THE 'ATTACHING' GUIDANCE BELOW.

IF YOUR KIT INCLUDES A ROCKET LAUNCH, WE ADVISE LEAVING THE SOLARBOARD FOR US TO FIX TO YOUR AMBASAT-1 SATELLITE ONCE IT'S RETURNED TO US FOR PRE-LAUNCH TESTING. WE WILL MOUNT THE SOLARBOARD FREE OF CHARGE.

### ATTACHING THE SOLARBOARD TO AMBASAT-1

**DO NOT ATTACH THE SOLARBOARD UNTIL YOU HAVE COMPLETED CODING AND TESTING YOUR SATELLITE.**

SOLDER A PIN TO GND AT THE BOTTOM RIGHT OF THE SOLARBOARD. DO NOT SOLDER VIN. AT THE TOP LEFT OF THE BOARD, SOLDER BOTH VCC AND GND PINS.

### SOLDERING THE PANELS

TO COMPLETE THE POWER CIRCUIT, SOLDER THE TOP TAB OF EACH SOLAR PANEL TO THE SOLARBOARD TRACK BY BRIDGING THE GAP WITH A SMALL AMOUNT OF SOLDER.



# Post

## Rocket Launch Certificate

*This is to certify that your*

**AmbaSat-1**

Has a reserved rocket launch slot allocation  
onboard the AmbaSat LAUNCH DEPLOYER

SLOT No: **12**

Signed: *Jackie Northrup*

Date: October 2020



## Rocket Launch Certificate

*This is to certify that your*

**AmbaSat-1**

Has a reserved rocket launch slot allocation  
onboard the AmbaSat LAUNCH DEPLOYER

SLOT No: **181**

Signed: *Jackie Northrup*

Date: October 2020





# Post



<http://ambasat.com/howto>

<https://github.com/ambasat/AmbaSat-1>

The box art for the AmbaSat-1 Space Satellite Kit. It features a large image of the satellite in orbit, the text "Your AmbaSat-1 Satellite Kit", and a smaller version of the circular logo seen in the previous image.

### Congratulations!

Thank you for purchasing your AmbaSat-1 Space Satellite Kit and welcome to the future of affordable space exploration.

Please visit the AmbaSat website link below to get started building your satellite:

<https://ambasat.com/howto>

### Tools Required

To assemble your kit, you will need a soldering iron, multimeter, wire cutters and solder. If you don't have these, please visit the AmbaSat shop where you can purchase your toolkit, additional sensors & more:

<https://ambasat.com/shop>

### WHAT'S IN THE BOX?

- 1 x AmbaSat-1 Satellite mainboard
- 1 x ATMEGA328P-AU Microprocessor
- 1 x LoRaWAN RFM95 transceiver
- 1 x Gyroscope/Accelerometer/Magneto
- 1 x your chosen environmental sensor
- 1 x two-AA size battery holder
- 1 x set of components - resistors, caps, etc
- 1 x CH340 USB to Serial Programmer
- Optional - solarboard & panels

### SUPPORT

<https://ambasat.com>  
[support@ambasat.com](mailto:support@ambasat.com)

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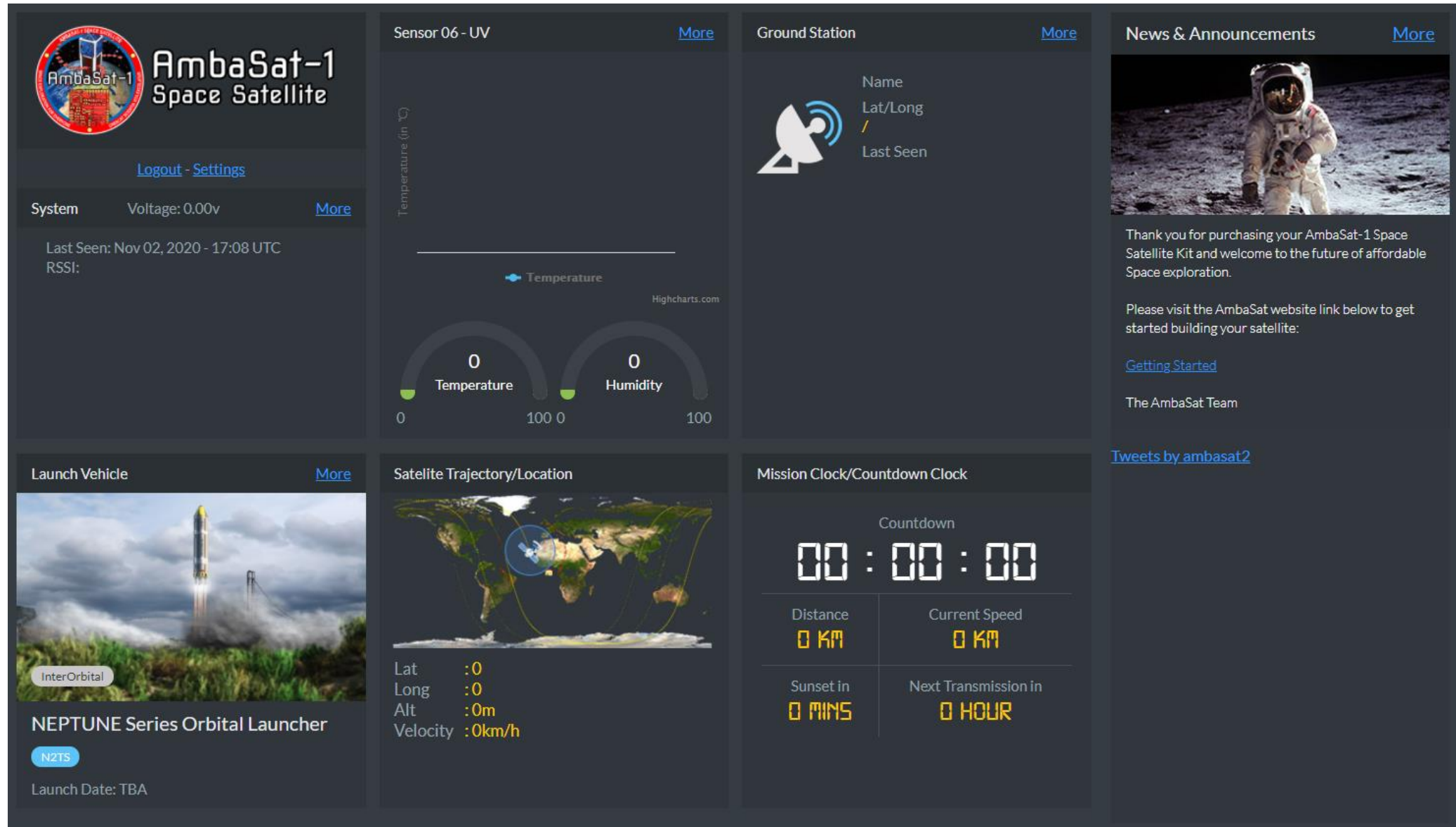
Two images: on the left, the AmbaSat-1 Satellite mainboard; on the right, a screenshot of the Dashboard software showing various sensor readings and graphs.

AmbaSat-1

Dashboard

555-01

# Dashboard





# Stappenplan



## Successful Steps to Build Your Satellite

The AmbaSat Kit build will take you from learning how to use a soldering iron all the way through to assembling and coding your very own satellite

### How to Build a Satellite



#### #1 Unpacking Your Kit

What's inside. The Basics



#### #2 Electronics Basics

Resistors, capacitors, MCU and other components



#### #3 Your Toolbox

What you need. How to use it



#### #4 Assembly

The hardware and PCB. Putting it together



#### #5 Introduction to Coding

The hardware and PCB. Putting it together



#### #6 Your AmbaSat Dashboard

Connecting to your Dashboard. Sending data from your satellite



### Congratulations!

You've built your very own AmbaSat-1 Satellite! Now you can program it to send any message back to Earth that you like. Add sensors and measure, explore, measure!

# AmbaSat-1



Interorbital Systems - Neptune





# Interorbital

<https://www.interorbital.com/>

Customer	Payload
AmbaSat LLC	3U CubeSat





# Planning

- 6 juli – Einde kickstarter
- 1 augustus – Start project
- 31 oktober – fase 1
- Bouwen/software backers - uitlevering
- Testen
- Q1 2020 – Lancering????

