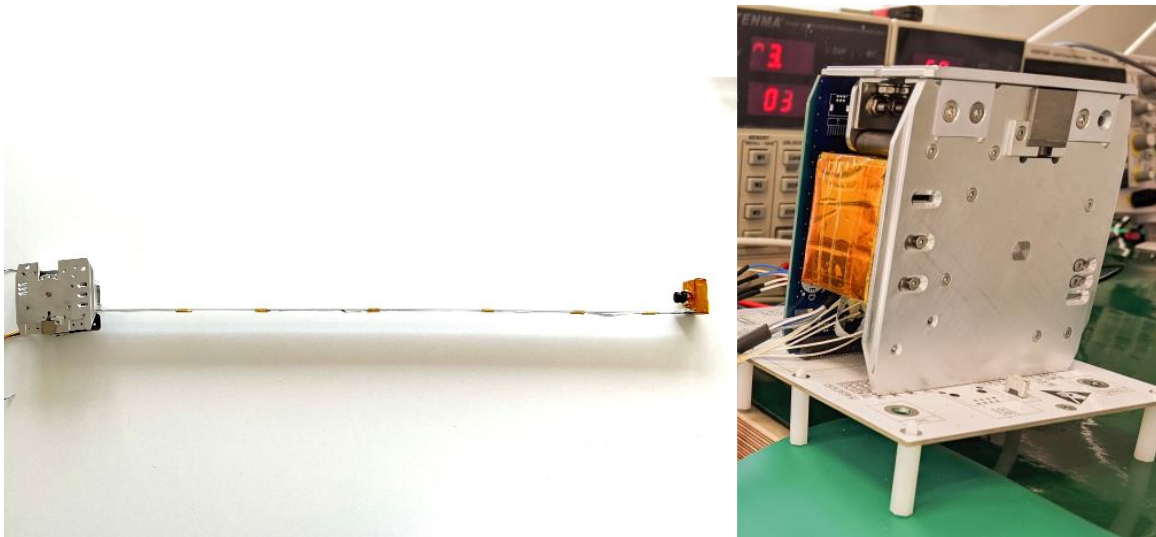


DCUBED Space Selfie Stick (D3S3)



General Specifications

Mass	0.3 kg
Outer dimensions (L x W x H)	90 x 40 x 90 mm
Tested operating temperature range	-30°C to +80°C
Stored survival Temperature	-40°C to +80°C
Deployed survival Temperature Range	-40°C to +105°C
Boom Length	>800 mm on one or two sides
Mounting Interface	Flexible on Demand (TBD)
Camera Angles	Different lenses available
Camera resolution	3088 x 2076 px up to 5472 x 3648 px
Camera communication	USB3
Payload	Commercial Selfie Camera
Resettability	Yes
Redundancy	Redundancy on the HDRM activation lines
Mechanism	Details in section "Mechanism Boom"
Camera	Details in section "Camera"
Activation Sensor	Optional on the HDRM

Acceptable Environmental Loads

The D3S3 is designed to withstand the following external loads in stowed configuration.

Load type	Load level
Random vibration (x,y,z)	24.3 GRMS \pm 3 dB (PSD) (x,y,z)
Sine vibration (x,y,z)	20-130 Hz, 20 g (x,y,z)
Shock (x,y,z)	100 Hz: 100 g 1000 Hz-10000 Hz: 1000 g (SRS, +3 dB) (x,y,z)

Mechanism & Boom

Mechanical Interfaces

Fits within the Cube Sat Standard. Final Interface will be adapted, based on the needs of the Satellite.

Mechanical Properties

The D3S3 has the following mechanical properties:

Property	Stowed	Deployed
Outer dimensions (L x W x H)	90 x 40 x 90 mm	850 x 40 x 90 mm
Deployed length Length [mm]	–	~ 800 mm (one side) ~1600 mm (both sides)
Material	Housing: Aluminum	Boom: Stainless Steel (optional in CFRP or GFRP)
Acceptable loading moment [Nm]	–	>0.4 Nm

Deployment Envelope:

During deployment, the Boom requires a keep-out zone of 850 x 100 x 100 mm to make sure it does not collide with any part of the Satellite.

Electrical Interfaces

Regarding the electrical interfaces, the release actuator as well as the camera are separated (with options either via a PCB, plugs, or open leads).

Release Actuation

To release the Boom, a current must be applied across one of the redundant release actuator actuation lines. The actuation lines are color-coded as red and yellow wires (red-red, yellow-yellow). The actuation line behaves like a simple resistor (see the table below), with no specific polarity. If an Activation Sensor is included (black lines), a closed circuit is established upon actuation.

Leads	2 x 2 (2 nominal, 2 redundant)	
Material	Silver-plated copper, PTFE	
Wire gauge	24 AWG	
Required current	1.6 to 2 A (DC)	
Resistance (Ω)	$0.9 \pm 0.2 \Omega$	
Time to release at 2.0 A	0°C	~ 2 s
	20°C	~ 1.3 s
	60°C	~ 0.5 s

Camera

The main features of the camera are:

- 20 Megapixel Images
- 5K Video Resolution
- Easy communication via USB3

Power Demand	1 to 3W
Operation Temperature Range	-30 to +85 °C
Survival Temperature Range	-40 to +105 °C
Data Transmission	USB3
Framerate	17 - 59 fps
Resolution	3088 x 2076 up to 5472 x 3648
Camera view (Angle)	Different lenses available (40 - 160°)

If you have any questions, please feel free to contact us via <https://dcubed.space/contact-us/>, send us an email over team@dcubed-space.com or reach out by phone +49 89 95874160.