



Frequently Asked Questions (FAQ) for 8th Round of KiboCUBE

Updated 7 July 2023

Eligibility

- Q: Is there an age limit to participation in KiboCUBE?
A: No, there is no limit on the age. However, the person will need to belong to an eligible entity (see section 12 of [Announcement of Opportunity document](#)).

Development of CubeSat

- Q: What kind of support will the awardees receive from JAXA?
A: The awardee will go through the safety review process with JAXA. JAXA will provide technical support through meetings to help you get through this process. JAXA and UNISEC are also planning technical consultation sessions for each team, to answer any questions that the awardee may have through the process. **Please note that there is no financial support provided by JAXA (or UNOOSA).**
- Q: What is the average cost budget for the development of a 1U CubeSat?
A: It will depend on various aspects such as where the parts/components of the CubeSat are being procured from, where the manufacturing and testing are being conducted (if the team owns or has access to the facilities or not), how much personnel costs for the team and staff are, etc.
Please note that along with the development (and testing), the applying teams will need to consider the costs related to shipping the CubeSat to Japan and the operations (including necessary infrastructure like ground stations and antennas.)



- Q: What Technology Readiness Level (TRL)s would be needed for the application?

A: There will be components at different TRL levels within your CubeSat, for instance for key subsystems such as Attitude Determination and Orbit Control Systems (AOCS), you might want to use components that have flown already, so at TRL 9. However, if the purpose of your mission is to test a new type of technology for AOCS, then this piece of technology will be at TRL 2-4 in your application because the purpose of your mission is to test it in space. For those components, you will go through tests and move to a higher level of TRL before the launch.

In the application form, please describe the TRL level of each of the components so JAXA/UNOOSA can have an understanding of the maturity and feasibility of your mission. Please note that through KiboCUBE, the goal is not only to develop a CubeSat, but to deploy and operate it so that it meets the mission objectives. Therefore, if you use technology at a very low TRL, the probability of success will be low. For more information on TRLs, please see the following references.

https://www.nasa.gov/directorates/heo/scan/engineering/technology/technology_readiness_level

https://www.esa.int/Enabling_Support/Space_Engineering_Technology/Shaping_the_Future/Technology_Readiness_Levels_TRL



Deployment

- Q: What is the orbit of the CubeSat deployed through KiboCUBE?
A: Low Earth Orbit (LEO). The International Space Station (ISS) is orbiting around Earth at 450km and the CubeSat will be deployed from the ISS.
- Q: How are the CubeSats set in the J-SSOD separated from each other?
A: It is defined in [JEM Payload Accommodation Handbook \(JPAH\)](#) that a total spring force of 1.08 to 5.3 [N] must be generated on the -Z end face of the satellite rail to prevent collision with subsequent satellites in the -Z direction during satellite deployment. In addition to the deployment switch, a separation spring provided by JAXA may be used. By using this spring, the CubeSats push and separate from each other during the deployment. For more information, see JPAH Volume 8, page G-1.

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Attachment G User Manual of Separation Spring

G-1 Separation Spring

For 1U to 5U satellites, a total spring force of 1.08 to 5.3 [N] must be generated on the -Z end face of the satellite rail to prevent collision with subsequent satellites in the -Z direction during satellite deploy. In addition to the deployment switch, a separation spring provided by JAXA may be used. When using this separation spring, the following information should be used in the design.

- The spring force of separation spring (P/N 251D939002-1) is 0.6 ± 0.06 [N].
- For the installation of the separation spring, the flange of the separation spring shall closely contact the -Z end face of the satellite rail, as shown in Figure G-1. The thickness of the flange is 2 mm.
- The mounting position of the separation spring shall be such that the tip of the spring is within the shaded area shown in Figure G-2.
- If a deployment switch and separation spring are to be installed, the total spring force of the separation spring and the deployment switch on the -Z side shall be 1.08 to 5.3 [N]. (For the deployment switch, refer to Section 2.2.1.)

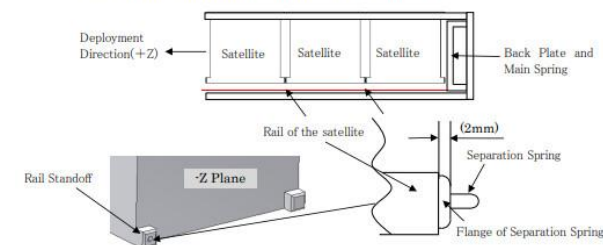


Figure G-1 Overview of Multiple Satellites with Separation Spring

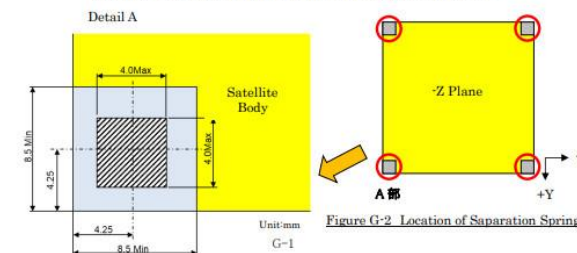


Figure G-2 Location of Separation Spring

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Other

- Q: Who is responsible for compliance with the various international treaties and guidelines?
A: The applying team. In Section 10 of the Application Form, the applying team will need to provide information on how the team has taken measures in the design and operations to meet the [Space Debris Mitigation Guidelines](#) and the [Guidelines for the Long-Term Sustainability of Outer Space Activities](#). The team also must go through the frequency allocation process with the [International Communication Union \(ITU\)](#) and the [Register of Space Objects](#) with UNOOSA.
- Q: Who is the “Launching State” for the CubeSats deployed through KiboCUBE?
A: As provided in Article I of the [Convention on International Liability for Damage Caused by Space Objects](#), and in Article I of the [Convention on Registration of Objects Launched into Outer Space](#),
For the purposes of this Convention:
The term “Launching State” means:
 - i. A State which launches or procures the launching of a space object;
 - ii. A State from whose territory or facility a space object is launched