

Introduction

The Mark Walker Portable Ground Station Design Award is to be awarded to the team who designs the best custom functioning portable ground station. Participation is not mandatory but encouraged. Craftsmanship and artistry are encouraged.

Mark Walker was a long time Cansat team member who specialized in ground station development and command and telemetry operations for satellite systems. He developed the requirements for the ground station, telemetry and commanding used in the competition.

Summary

Teams shall design a portable ground station that can be carried by one person and not weigh more than 15 pounds. The ground station shall be a single hand carried device. It must not require assembly to be functional. It can be enclosed to protect it from the environment. It can be built into a suitcase like a pelican case or something similar or a fully custom enclosure. The ground station shall be able to be placed on a table, opened, connected to an antenna, and be ready to operate when the ground station is powered. The ground station software shall automatically start when the ground station is powered.

Criteria

1. Must not use a laptop or repackage a laptop.
2. Must be a single package excluding the antenna.
3. Can use a commercial case or make a custom case like a suitcase.
4. Must not require assembly except for attaching an antenna.
5. Must weigh under 15 pounds.
6. Must use only one switch and or button to power on and off.
7. Ground station software shall automatically start when powered.
8. Must contain its own power source such as a battery.
9. Must perform all required ground station requirements.
10. Cannot be remotely controlled or remotely operated.
11. Must allow for USB memory devices to be connected to capture telemetry.
12. Must include all needed user input devices.
13. Must include display.
14. Must include radio to communicate with Cansat.
15. Can be made of recycled materials and components or new materials.
16. Woodworking is allowed.
17. Style can be theme based such as cyber deck, steampunk, Hello Kitty, etc.

Judging Criteria

1. Fully functional, meets all requirements.
2. Construction quality

3. Craftsmanship
4. User interface
5. Ease of use
6. Data display quality
7. Coolness factor

Criteria	Description	Score 0 - 10
Fully Functional	Did the ground station score all points at FRR? Does the ground station meet all the criteria listed?	
Construction Quality	How well is the ground station constructed? 1. Panel fit, are there varying gaps 2. How good is the fit in the enclosure 3. Is the construction solid, no bending, nothing loose, cannot deform easily	
Craftsmanship	Was the enclosure custom built? Was a style or theme used in the design of the ground station like a cyberdeck, wood construction,	
User Interface	Is the graphical user interface easy to understand? Is all required data plots shown and easily identified? Is the control GUI easy to understand and organized well?	
Ease of Use	Are there physical user input devices and are they labeled or somehow identified easily enough for a user to understand and use. Can the user easily save collected telemetry to a USB memory device.	
Display Quality	Does the GUI have a theme or style that is unique and easy to understand? Does the GUI theme look good, have a nice style?	
Coolness Factor	Was the ground station built with a theme and is it a cool theme?	
Total		