



Charging Station for Vernier LabQuest 2



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Summary

Charging station for charging up to 10 LabQuest 2's at once.

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Description

This is a charging station for charging up to 10 Vernier LabQuest 2's simultaneously. Charging cords can be tucked into the "J" shaped cutouts on either side when not in use.

Disclaimer: I've only tested it with LabQuest 2's which have a pretty low charging rate (5V, < 1A). Other LabQuest devices may need different size slots and may require vent holes for cooling the USB charger if they draw more current than the LabQuest 2's. For easier remixing, I've uploaded STEP files and shared the [design file in Onshape](#).

Rationale

Our high school science department purchased a [Vernier LabQuest Charge Station](#) to charge our LabQuest 2's. I opened the bottom cover on it and discovered it's just a 5-port USB charger, with charging cables plugged in to 4 of the ports. For a \$150 charge station, I was pretty disappointed to find it was just a USB charger and cables on simple metal frame. Plus, they could have made the frame a little larger to charge 5 devices at once since

the USB charger has 5 ports, but didn't for some reason. So, I returned the Vernier charge station and made this.

Parts

- Left Side
- Right Side
- Charging Cord Plug (x20)
- Power Cord Plug (x2)
- [SABRENT 60 Watt 10 Port USB Charger \(AX-TPCS\)](#)
- [USB to 3.5mm x 1.35mm Barrel Connector 5V DC Power Cable Male](#) (x10)
- [M3 hex socket head screws & nuts](#)
 - M3 x 30 screws (x6) for attaching left and right side together
 - M3 x 10 screws (x8) for attaching bottom cover
- [4 inch cable ties](#) (x11) for securing cord plugs

Printing

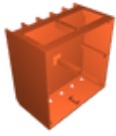
I recommend print the Left Side and Right Side on end, so the charging cord holes are on the print bed, with organic supports (as pictured). The other parts can all be printed without supports. I printed this with [Printed Solid Jessie PETG Soul Black Glitter](#).

Assembly

Refer to photos for pictures of most of the assembly steps described below.

1. Attach Left Side and Right Side together with M3 x 30 screws & nuts.
2. Insert the USB charger as pictured.
3. For each cable:
 1. Push the cable through the hole in the printed part.
 2. Hold 2 cord plug halves on the cable outside the charging station.
 3. Push the cord plug and cable through the hole from the outside.
 4. Secure the cord plug from the inside using a cable tie. If pulled tight, the cable tie should clamp the cord plug down on the cable and hold the cord plug in place from the inside of the charging station.
4. Plug the cables into the USB charger and route the cables through any empty space. Try to keep clearance around the USB charger to allow for airflow
5. Attach the bottom covers: Insert hex nuts into the rectangular slots under the screw holes in Left Side and Right Side parts. Then, secure the bottom covers using M3 x 10 screws.
6. Enjoy!

Model files



charging-station-left-side.3mf



charging-station-right-side.3mf



charging-station-charging-cord-plug.3mf

☐ This is half of a plug, so 2 are needed for 1 cord



charging-station-power-cord-plug.3mf

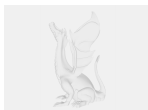
☐ This is half of a plug, so 2 are needed for 1 cord



charging-station-bottom-cover.3mf



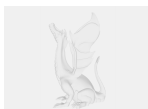
charging-station-left-side.step



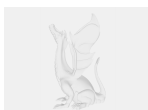
charging-station-right-side.step



charging-station-charging-cord-plug.step



charging-station-power-cord-plug.step



charging-station-bottom-cover.step

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