Heltec V4 MeshCore/ Meshtastic Solar Tree Node

TapRackBang

VIEW IN BROWSER

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Summary

Solar-powered Heltec V4 MeshCore/Meshtastic node made to hang in a tree.

Hobby & Makers > Electronics

Tags: solar mesh lora meshtastic heltec meshnode meshcore treenode

This is a simple solar powered tree node that utilizes a Heltec V4 and a Meshnology 3000mAh battery pack. I actually just bought the full kit from Meshnology on Amazon sometime ago and then ultimately decided to build this. I've had this up for a couple weeks now, as well as hanging during a couple of rainy days and have had no issues thus far, your mileage may vary. By design, there are no seals in place. I did not use any RTV or anything in attempts to make this water tight in that manner. By design, the electronics are high up in the model and above any place that water might possibly enter into the electronics bay. The bottom is tight, but not airtight so that it can breathe as well as ideally any water that does happen to get inside can collect at the bottom and ultimately drain out. I opened it up after the first relatively light rain that we had and it was bone dry. If the node is placed in an area that gets decent sunlight, it

should stay alive even with the Heltec V4 being used. I've had no issues in keeping it up, and it even makes it through a few rainy and cloudy days. If there's enough sun, it actually starts gaining ground, and if enough sunny days were presented, it would eventually top itself off in the future. I may make another version that utilizes an nRF52 based chips up like a Xiao or perhaps a T114 or T096. Feel free to modify to your liking and stuff whatever electronics you can inside of it.

BOM

1x Heltec WiFi LoRa 32 V4

1x Meshnology 3000mAh LiPo battery

3x 6V 1W mini solar panels, 110 x 60 mm (Flylin)

3x 1N5817 Schottky diodes, one per panel

1x 2-pin SH1.25 pigtail for the solar input

1x U.FL (IPEX) to SMA bulkhead pigtail

1x 915 MHz SMA whip antenna (Slinkdsco is what i used)

M3 heat-set inserts

M3 screws (stainless recommended)

Heat-shrink tubing

Foam for the battery bay

ASA filament recommended (I used Polymaker)

Model files

tree-node-v18.stl

main.stl

heltec-v4-solar-tree-node.step

heltec-v4-solar-tree-node.f3d

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