

Node / Radio Go Box

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Design Goal

Provide UPS and battery backup power for:

- Node remote operation
- Node use during power utility outages.
- Power smartphone used as WiFi 'hotspot' during remote operation.

Provide 12VDC power for 5W VHF / UHF transceiver.

Operate in stand-by / charge mode from 12VDC power source.

Components:

- [Powerwerx Panel Mount Housing for Two Anderson Powerpole Connectors with a Weather Resistant Cover](#)
- [2PCS USB 2.0 IP67 Connector with Waterproof/Dust Cap Female to Female Socket Plug Panel Mount for Industrial Standard Type A](#)
- [DC-DC Buck Converter Module 12V to 5V Micro USB Power Adapter Compatible with Ring Alarm Keypad \(2\)](#)
- [DaierTek DC 12V 24V Car LED Display Voltmeter Digital Panel Voltage Meter Waterproof Universal with Terminals and Panel for Boat Marine with Blue Light](#)
- [Glarks 20 Pair 30AMP Quick Disconnect Power Terminals Connectors, Red Black Quick Connect Battery Connector Modular Power Connectors Set](#)
- [Mighty Max Battery Group U1 SLA/Gel Battery Box for Kayak's Trolling Motor Brand Product](#)
- [NPP NP12-9Ah Rechargeable AGM Sealed Lead Acid Rechargeable 12V 9Ah Battery F2 Terminals](#)
- [Power Transfer Charger Kit - New - Version V1.22](#)

Development

There are three nodes that will be powered in the 'Go-Box.



On the left is a SHARI that connects to the Pi next to it running an AllStar server. In the center is a Pi-Star node and to the far right is a Pi DVSwitch Server.

Here's a picture of the battery box I chose to use.

Here's a picture of the 'Power Transfer Charger' by John K9JEB, Amateur Radio Operator from Redmond, WA USA. I read an article about the board in the ARRL Handbook.



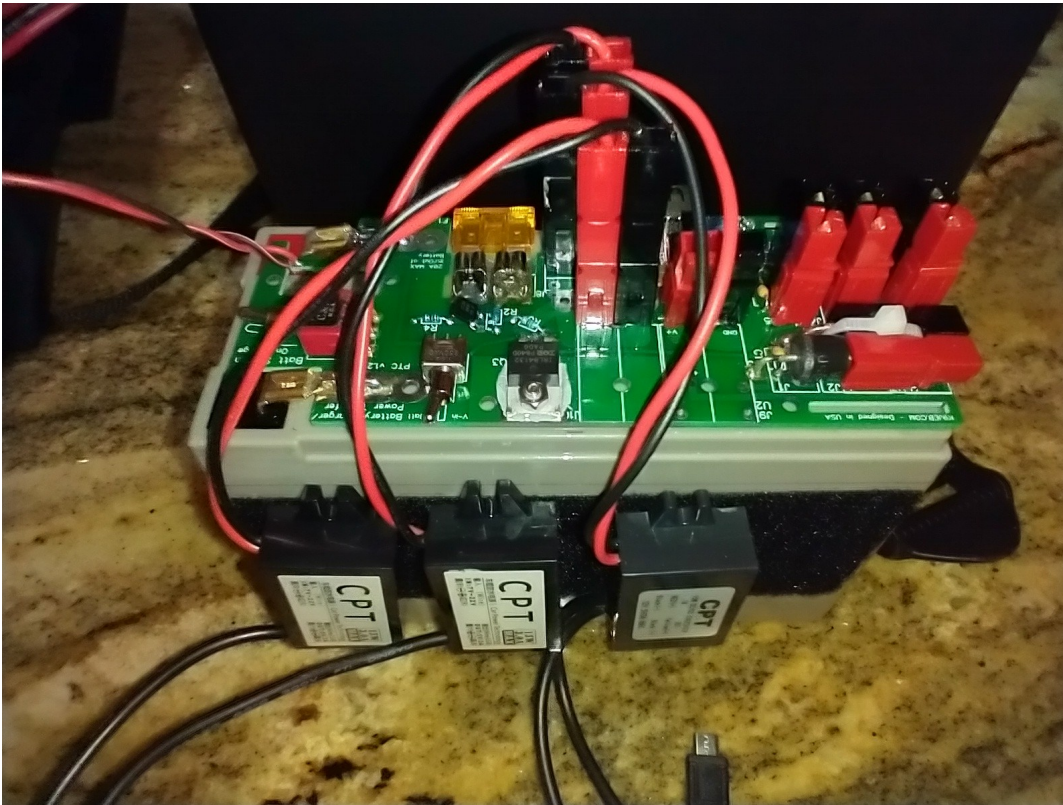
This is the 'Power Transfer Charger' John K9JEB, Amateur Radio Operator from Redmond, WA USA. I read about this board in the ARRL Handbook and that was the stimulus for the project.



Here the 12VDC to 5VDC Converters that needed to be installed to power the nodes and provide USB charging for the smartphone. I used hook & loop to mount the converters to the side of the battery.



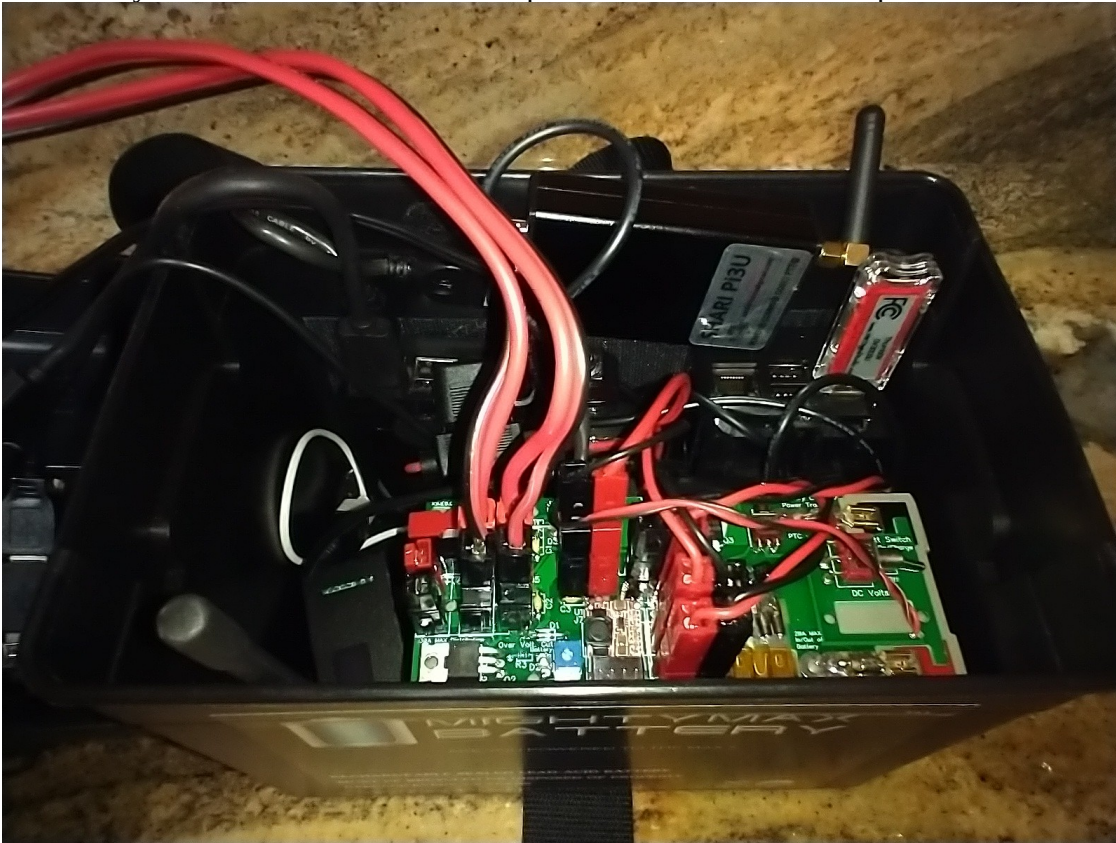
Just a slightly different view to see the PCB mounted on top of the battery. The board is securely connected via the Sta-Kon connectors.



The nodes are installed in the box using hook & loop.



The battery is now in the box and all the power connections are completed.



Final product front view. The USB connector on the right is for an Mpow headset to use the 'radioless' node in the AllStar server. The USB connector on the left is for charging a smartphone.



Right side view of case with DVM installed.



Left side of case is for 12VDC Input and output.



Thanks to John K9JEB for his great Power Transfer Charger board and his patience in answering all my questions.