

The background of the slide features a large, faded circular seal. The seal has a red outer ring with the text "FEDERAL COMMUNICATIONS COMMISSION" at the top and "AUTOMATIC OPERATIONS" at the bottom. The inner blue circle contains illustrations of a satellite, a radio tower, and a computer monitor. At the bottom of the inner circle, the letters "A.C.S." are written in yellow.

Pinellas ACS Go-Box Power Systems

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Pinellas ACS Training Officer



Go-Box Power Systems Requirements



- What do you want to power?
- How long should the Go-Box power last?
- What sources of power will the system support?
- Should the power system transition from a primary power source to a back-up power source automatically and transparently?
- Should the power system mitigate the impacts caused by dirty power sources?
 - Surge Protection, Noise Filtration, Over voltage, Brown-outs, voltage spikes, etc.
- Should power system displays back-up battery status



Go-Box Power Systems Power Load Requirements

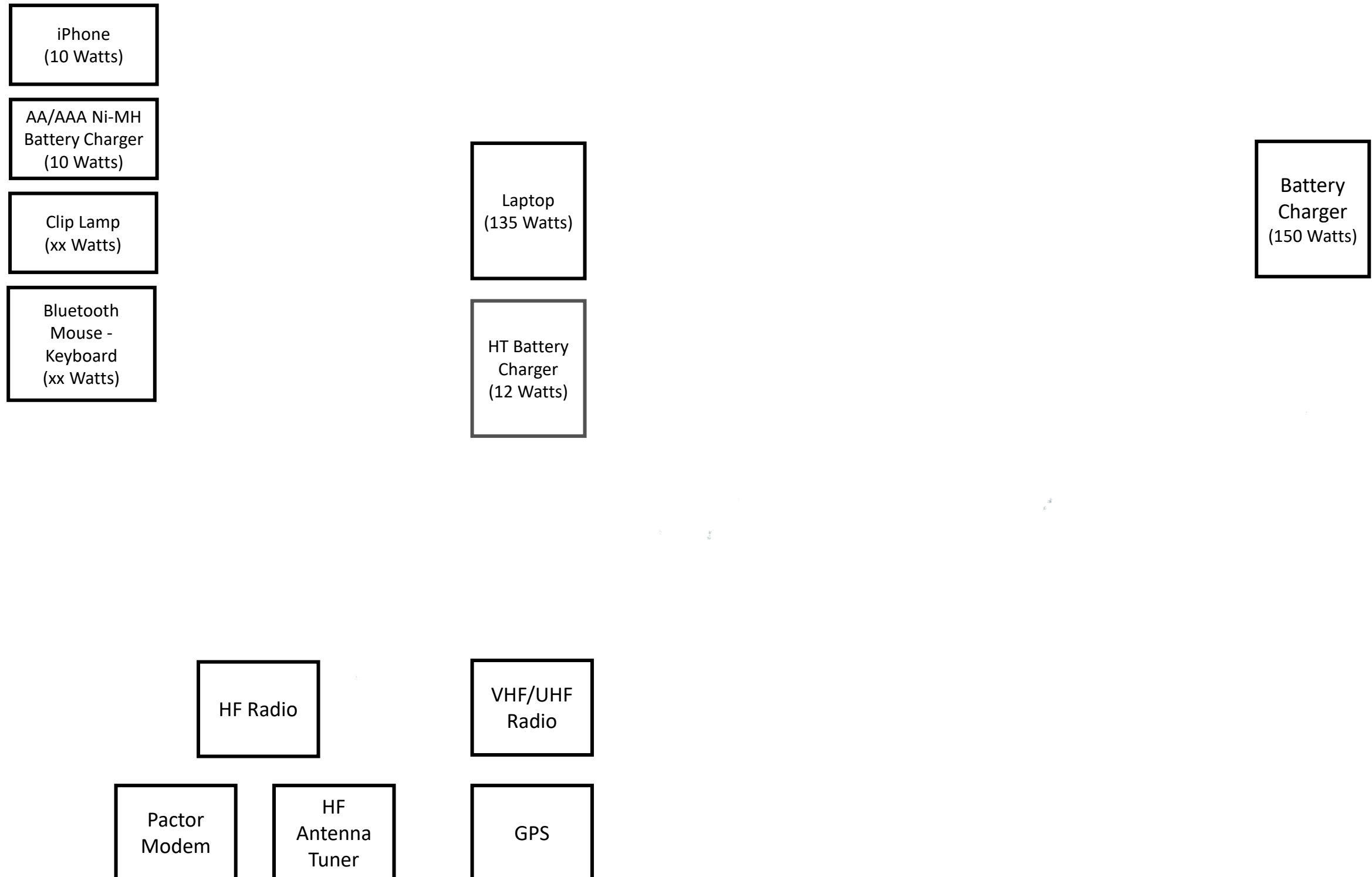


- Communications Equipment
 - UHF/VHF Radio
 - HF Radio
 - HF Antenna Tuner
 - Digital Modems (e.g., Pactor Dragon)
- Support Equipment
 - Laptop Computer
 - GPS
 - HT Charger
 - Cell Phone / Tablet
 - AA/AAA Ni-MH Battery Charger
 - Back-up Battery Charger
 - Portable Computer Mouse/Keyboard
 - Lighting Systems



Go-Box Power Systems

Power Loads





Go-Box Power Systems

Power Source Requirements

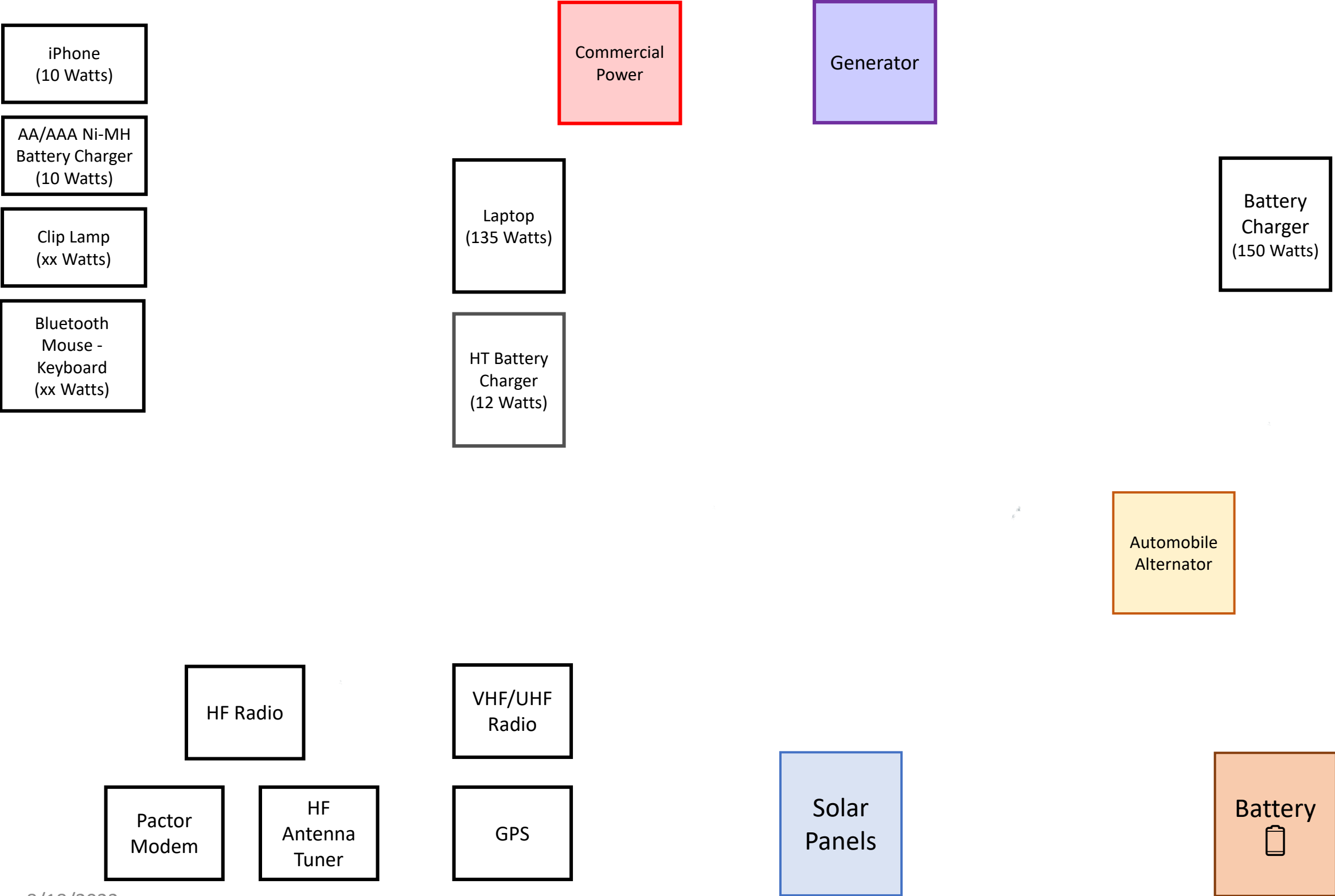


- Primary Power Sources
 - Shore Power – Commercial Power Grid
- Back-up Power Sources
 - AC Generator
 - Automobile Alternator
 - Battery
 - Gel - Sealed lead-acid, not AGM
 - AGM - Sealed lead-acid, Absorbed Glass Mat (lighter weight and less expensive; fewer charge/discharge cycles than Gel)
 - Lithium - Lithium Iron Phosphate (“LiFePO4”)
 - Solar Panels



Go-Box Power Systems

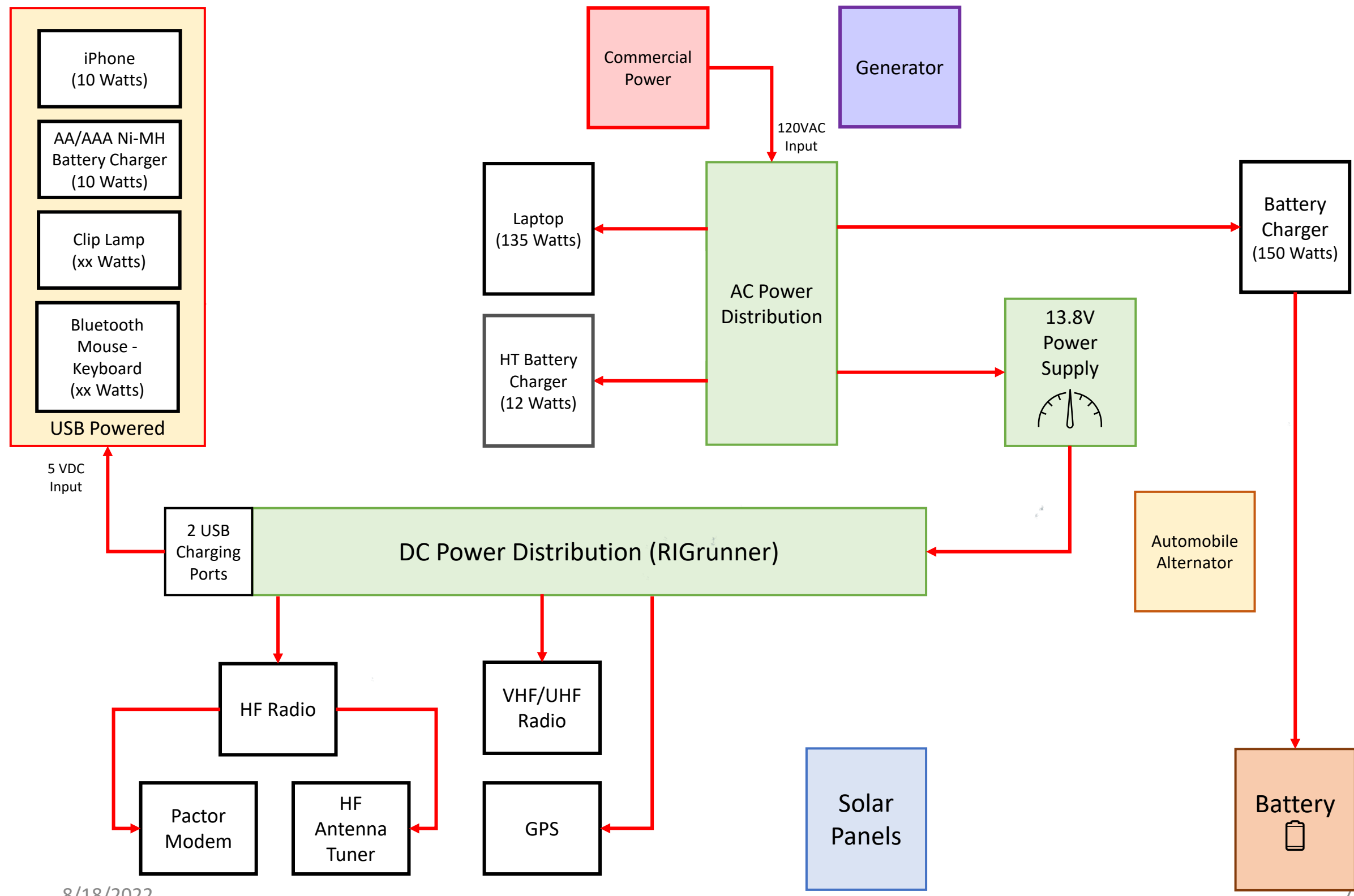
Power Sources and Loads





Go-Box Power Systems

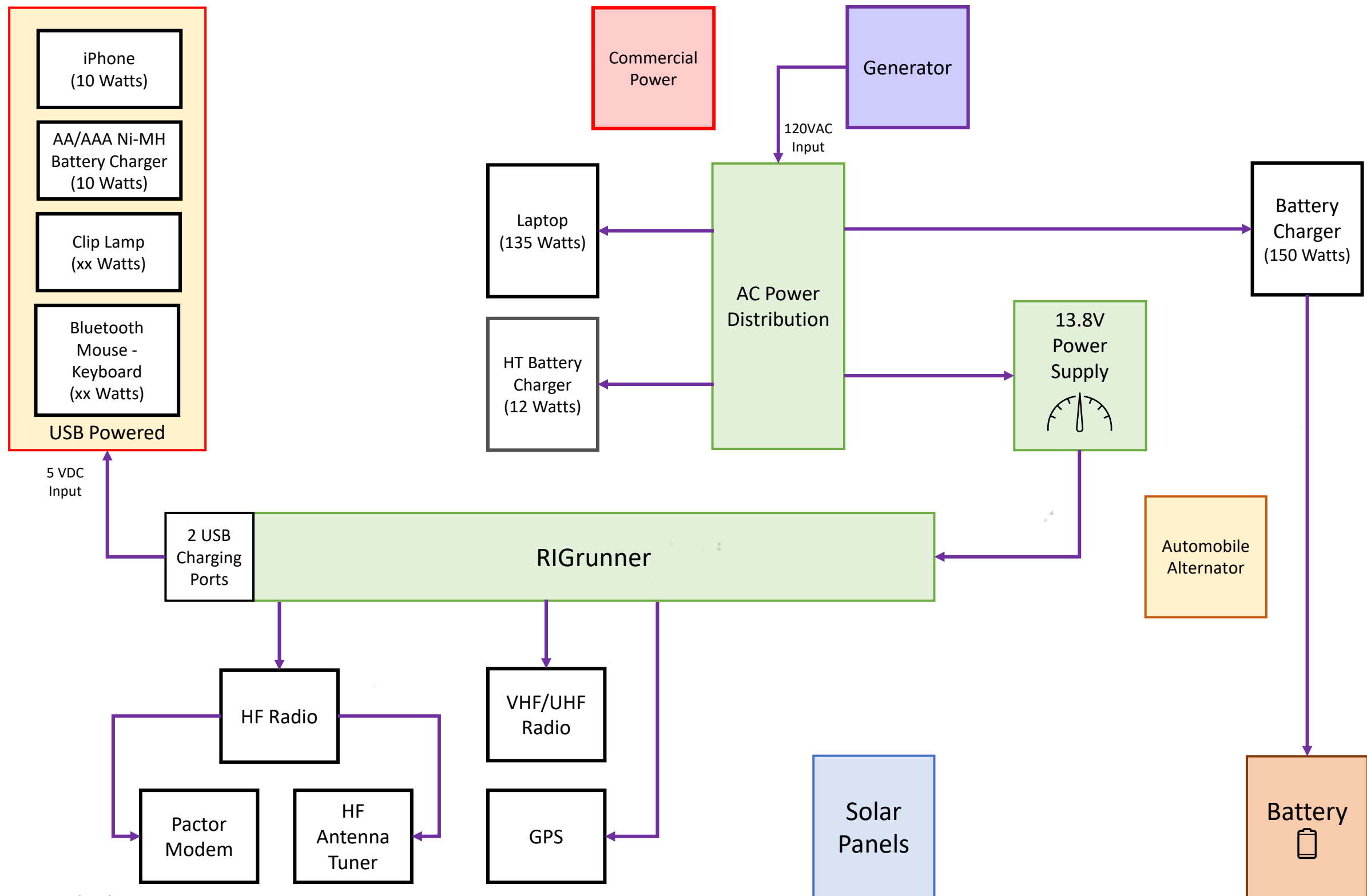
Power Distribution – Commercial Power





Go-Box Power Systems

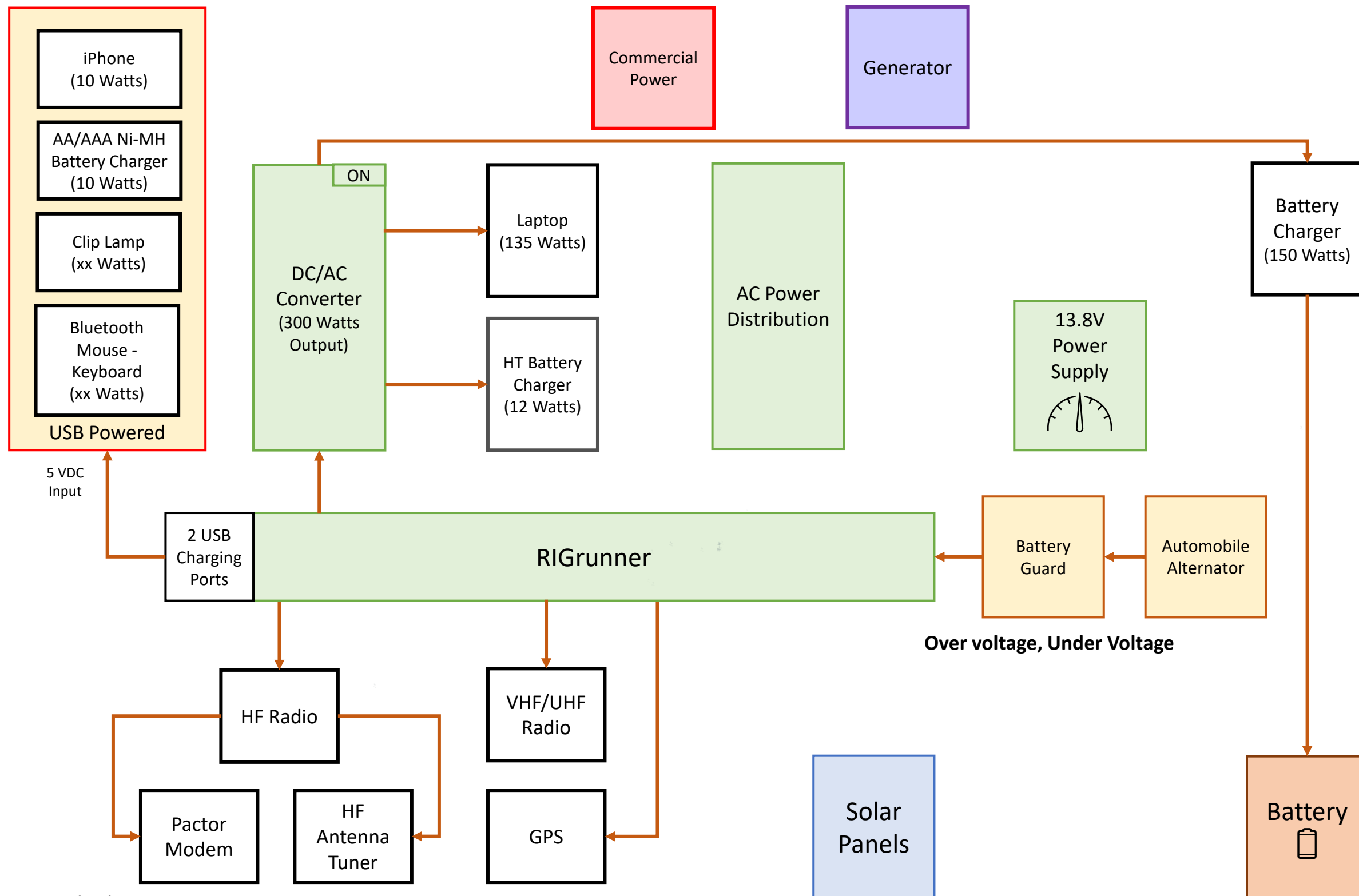
Power Distribution – Generator Power





Go-Box Power Systems

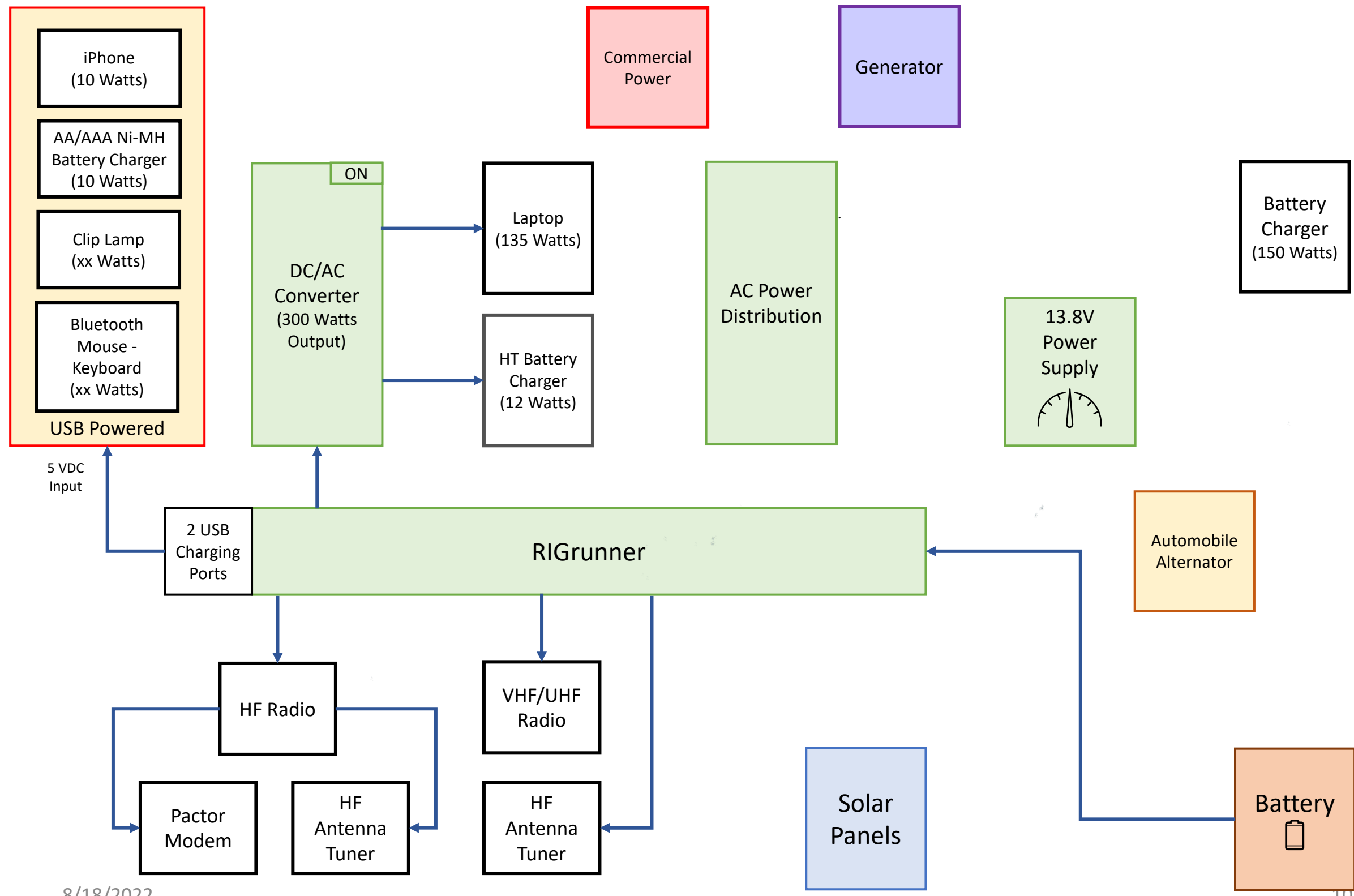
Power Distribution – Alternator Power





Go-Box Power Systems

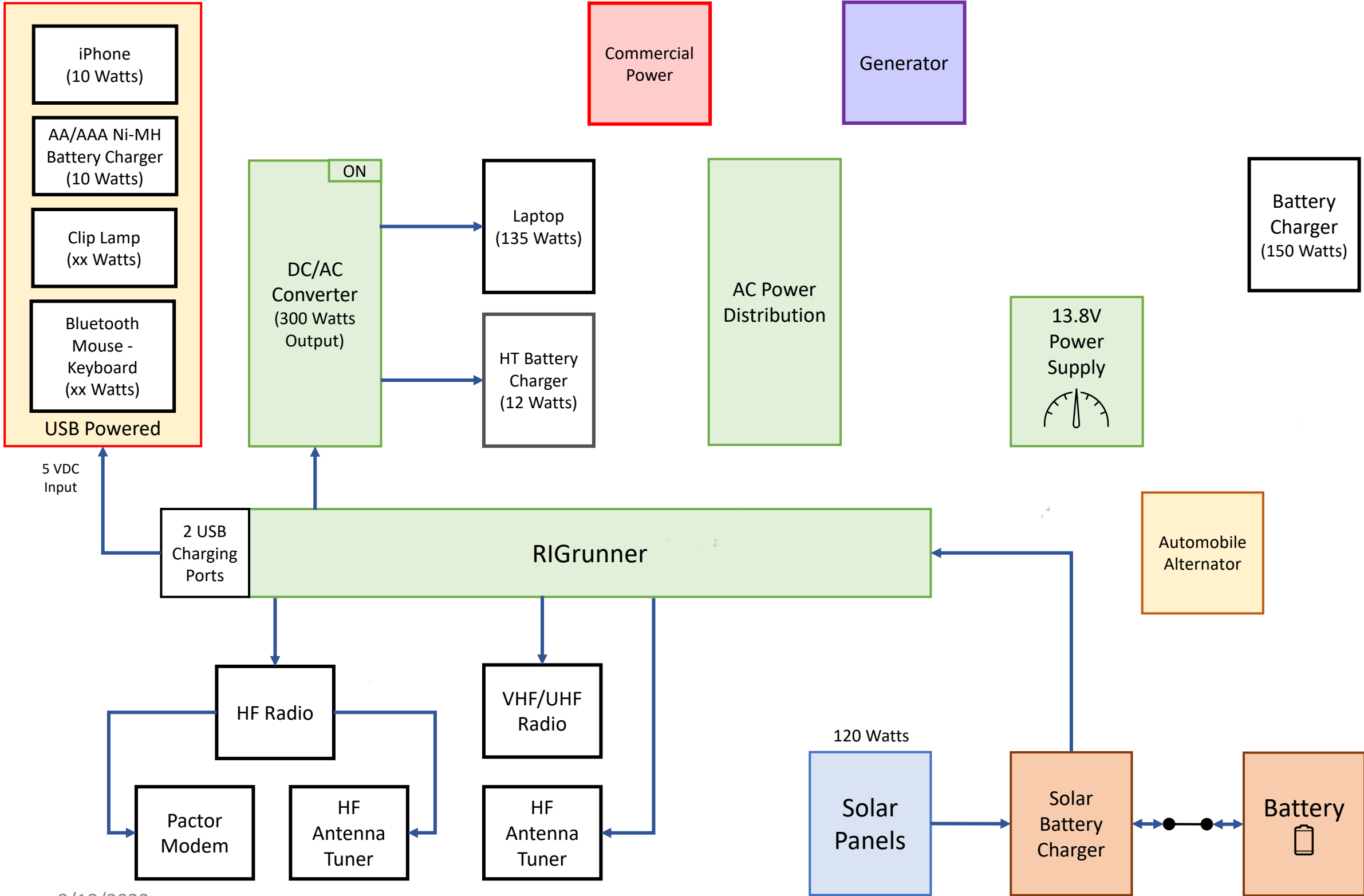
Power Distribution – Back-up Battery





Go-Box Power Systems

Power Distribution – Solar & Back-up Battery





Go-Box Power Systems Issues and Upgrades

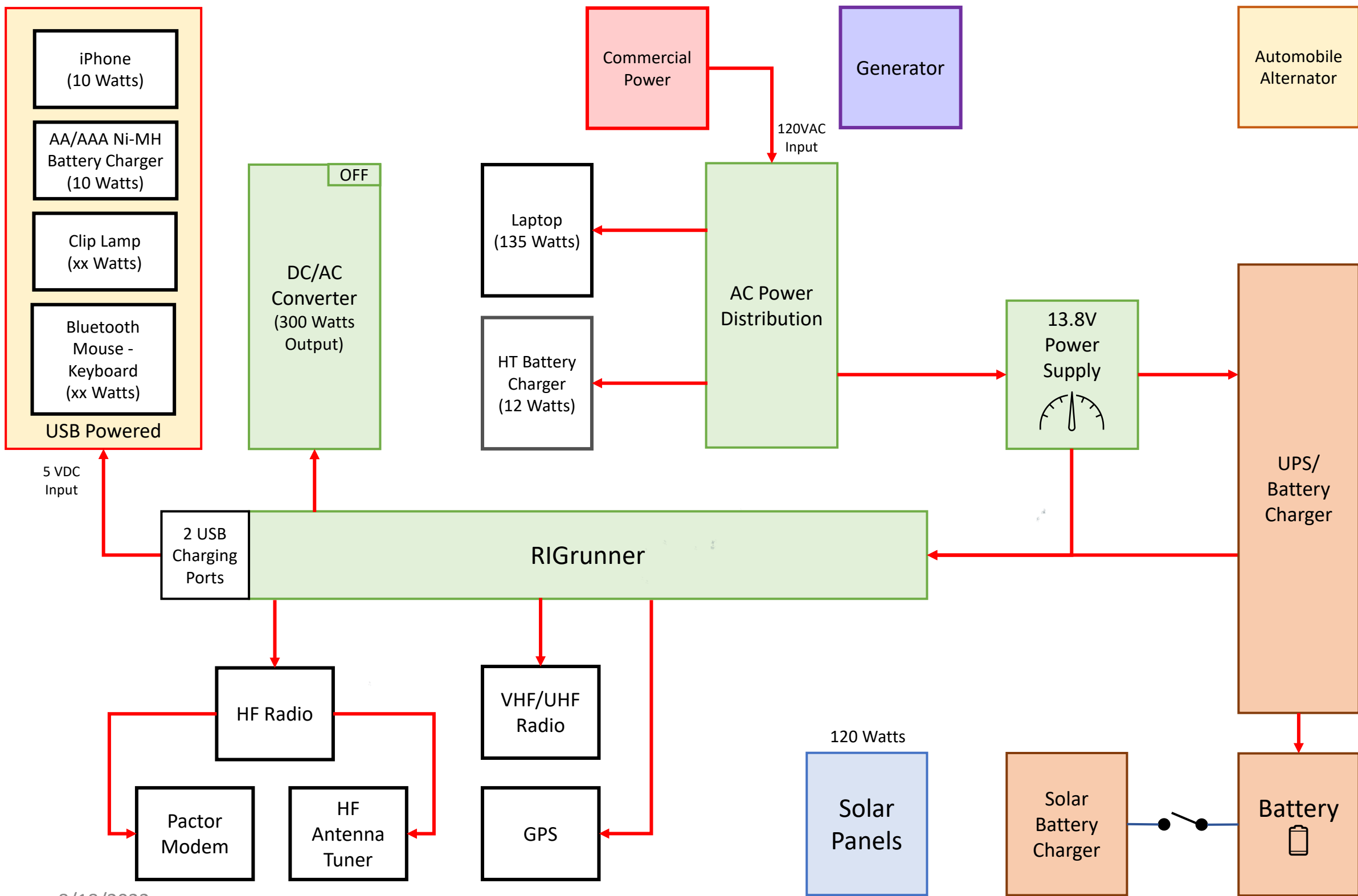


- Power system transitions from a primary power source to a back-up power source automatically and transparently
- Power system mitigate the impacts caused by dirty power sources
 - Surge Protection, Noise Filtration, Over voltage, Brown-outs, voltage spikes, etc.
- Power system displays back-up battery status



Go-Box Power Systems

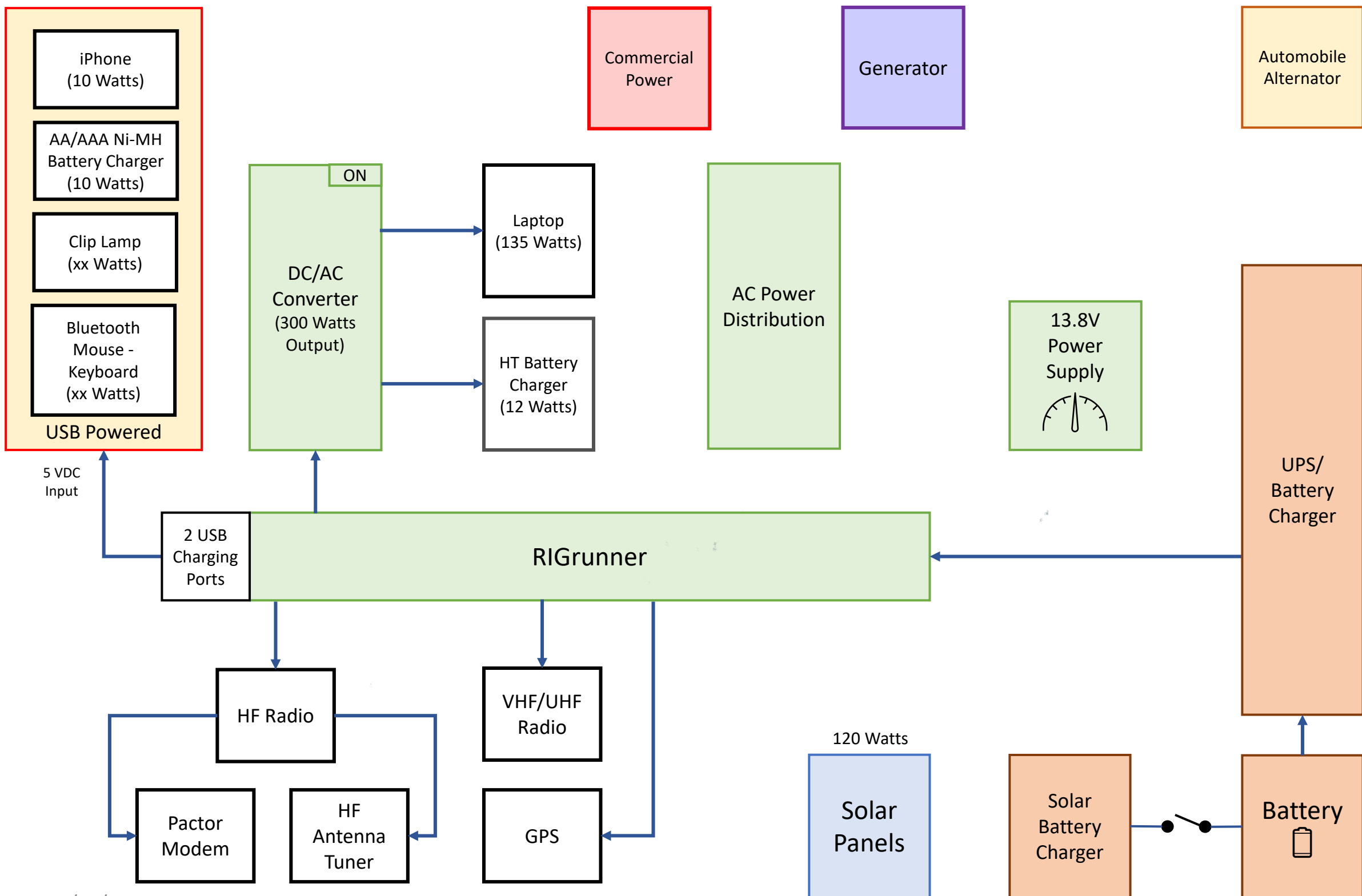
Power Distribution – UPS/Battery Charger





Go-Box Power Systems

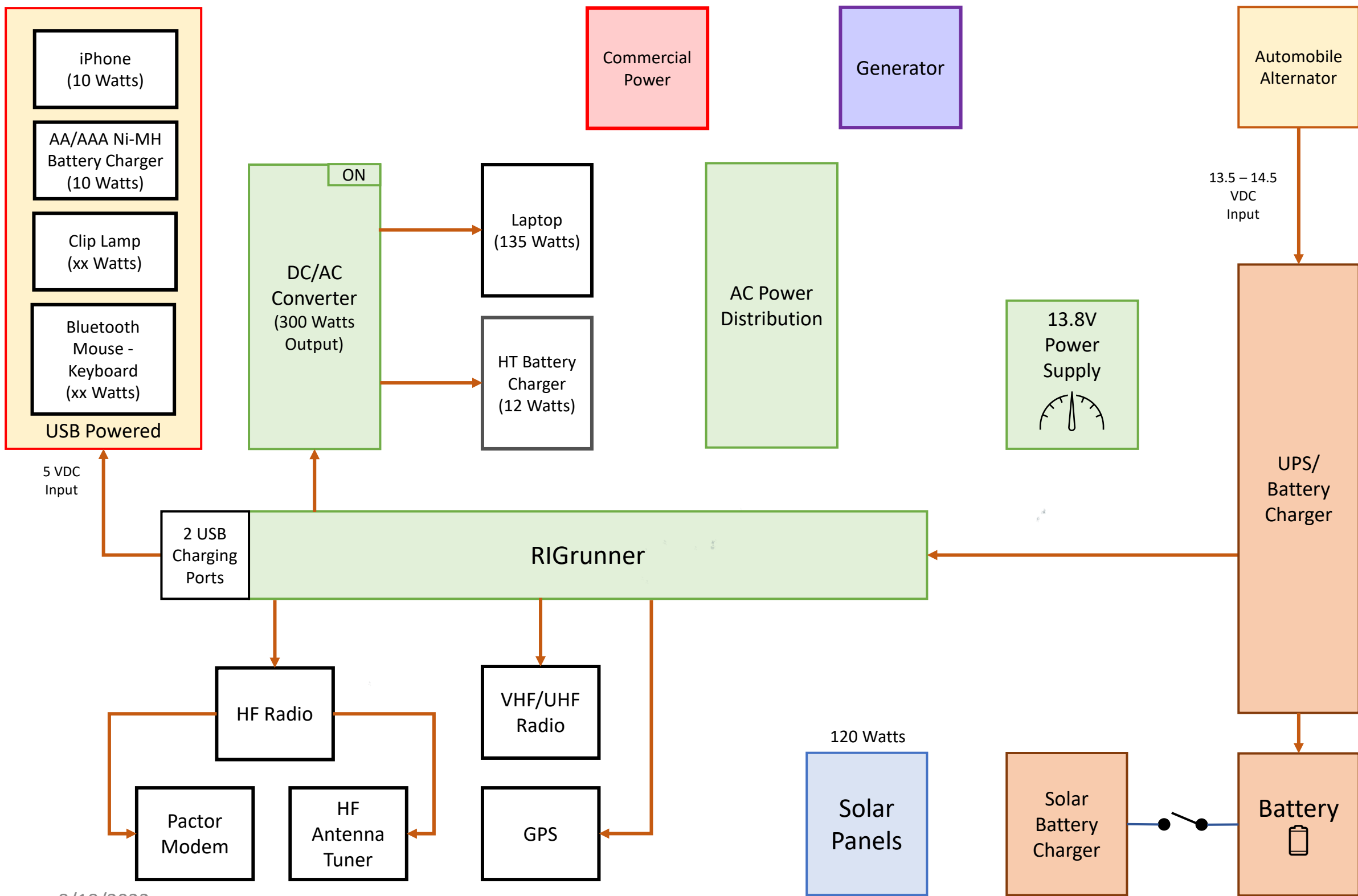
Power Distribution – UPS/Battery Charger





Go-Box Power Systems

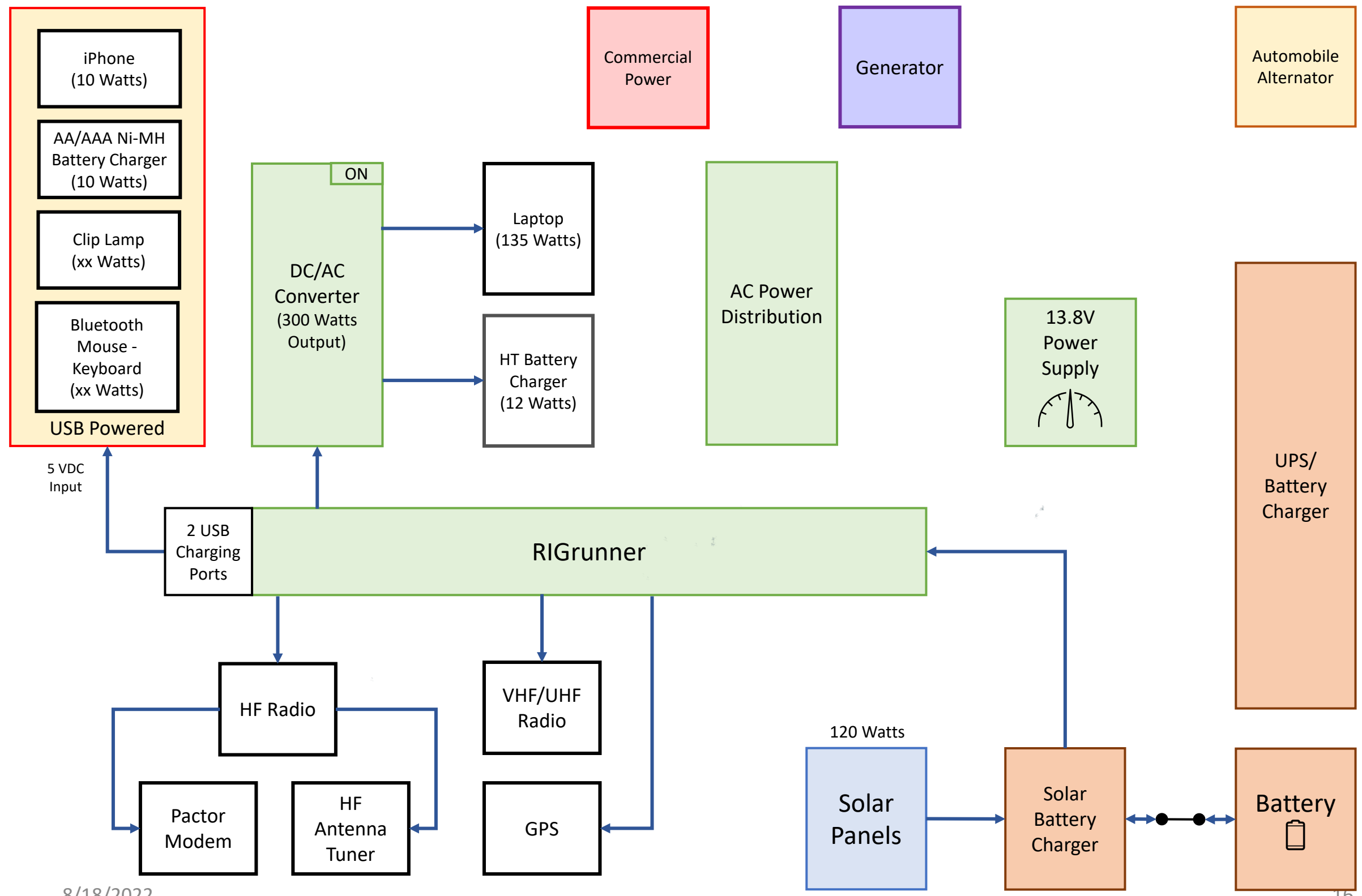
Power Distribution – UPS/Battery Charger/Alternator





Go-Box Power Systems

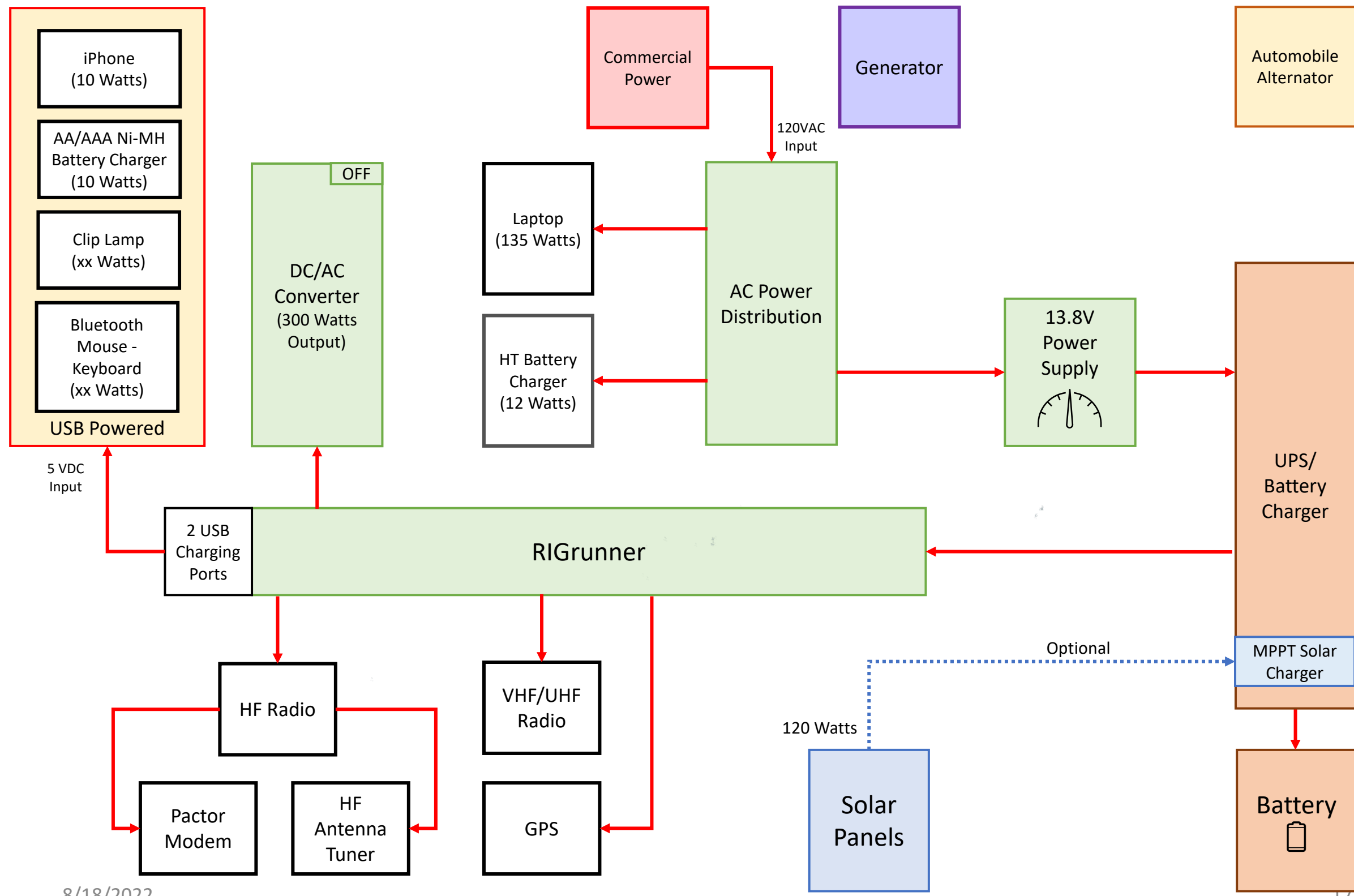
Power Distribution – UPS/Battery Charger - Solar





Go-Box Power Systems

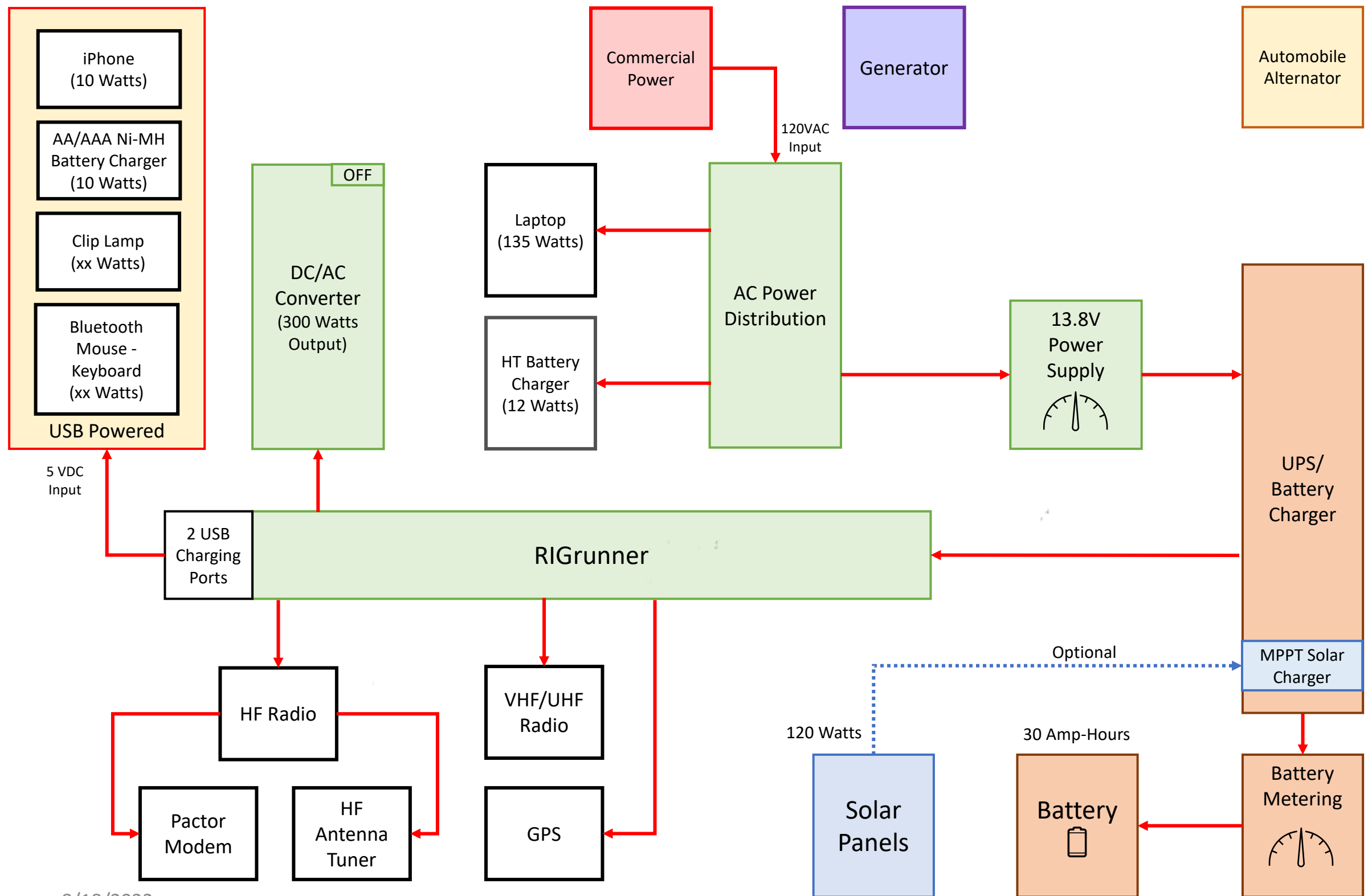
Power Distribution – UPS/Integrated Solar Charger





Go-Box Power Systems

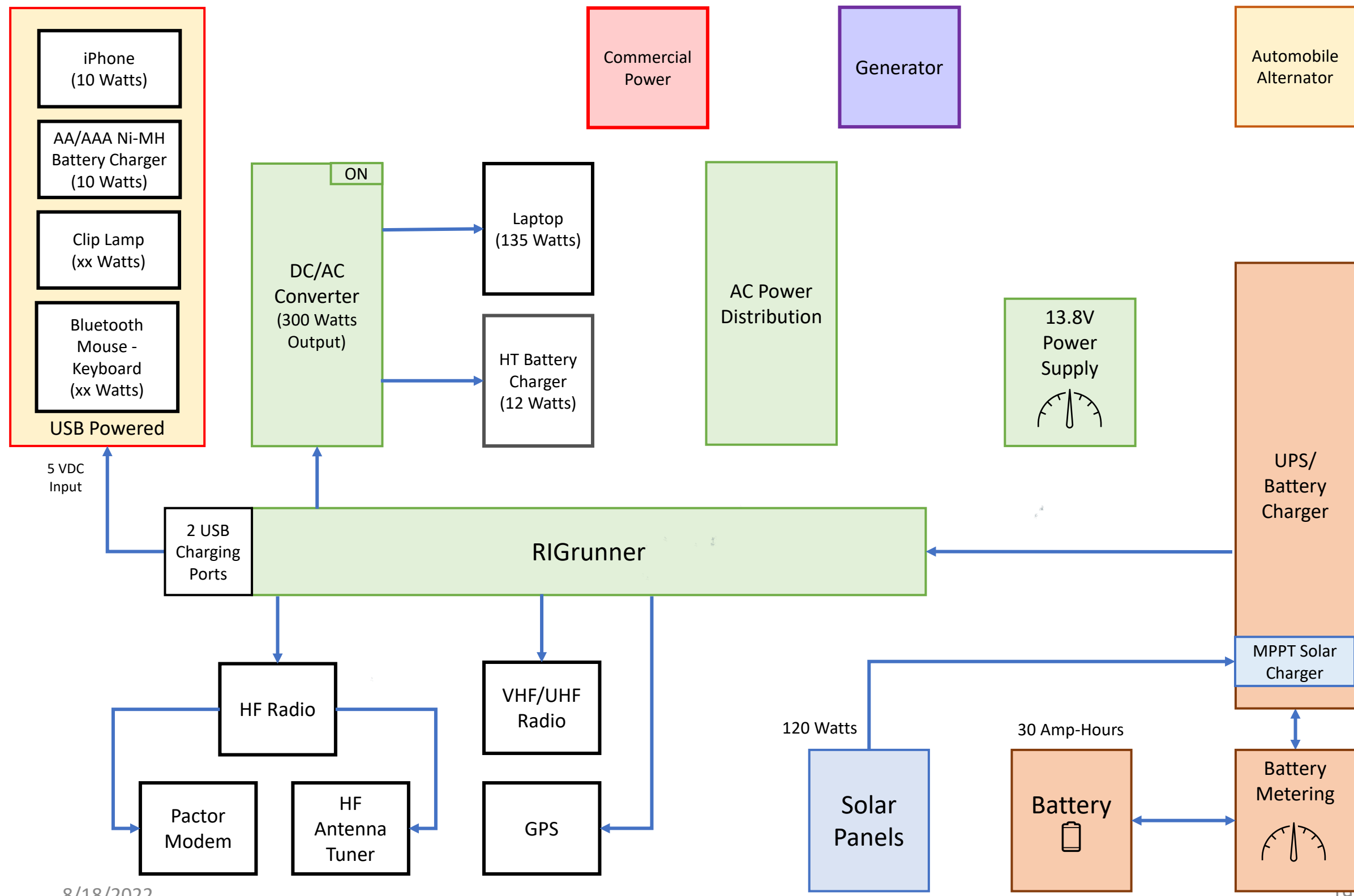
Power Distribution – Battery Status Monitor





Go-Box Power Systems

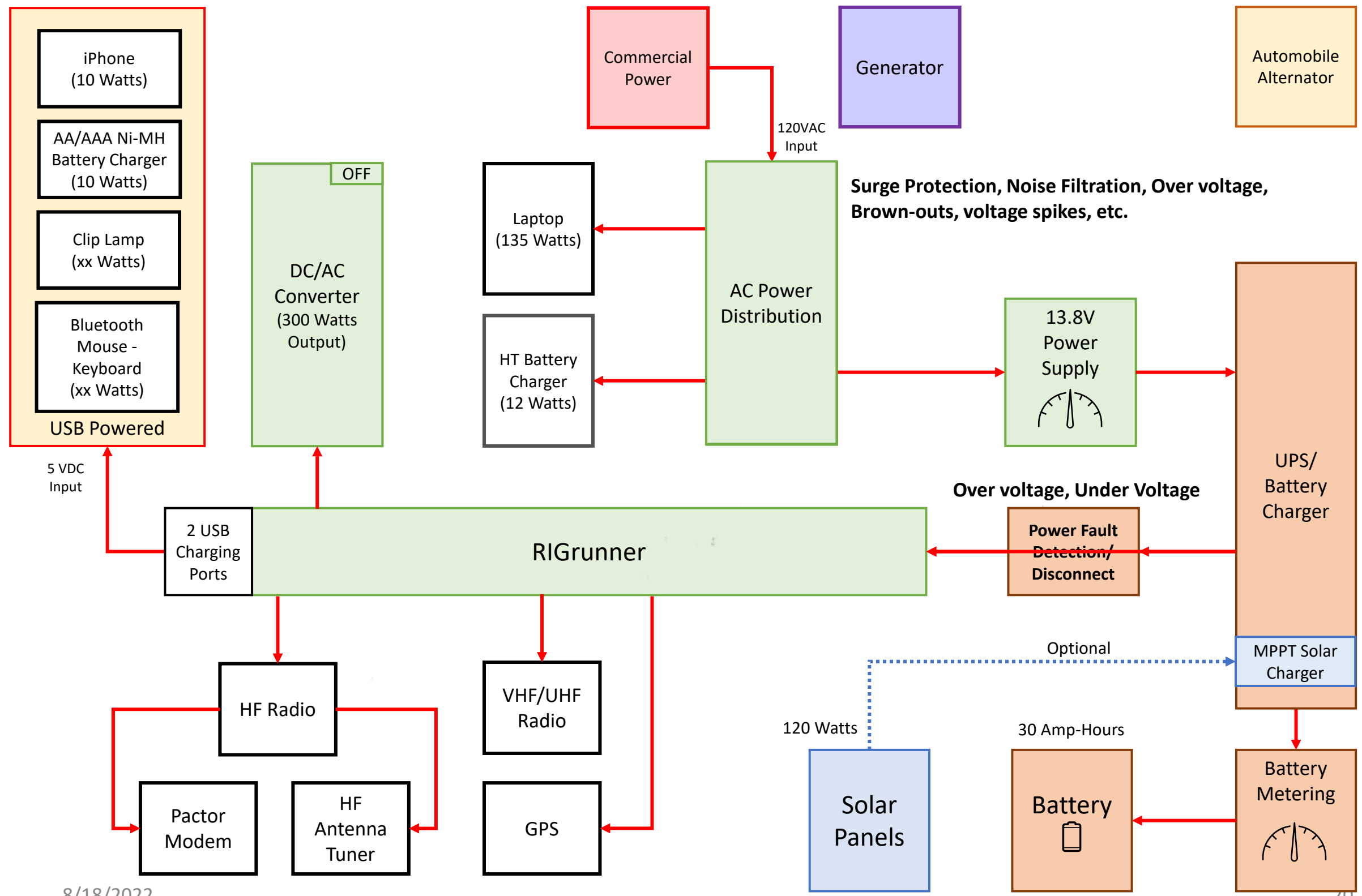
Power Distribution – UPS/Integrated Solar Charger





Go-Box Power Systems

Power Distribution – Power Conditioning





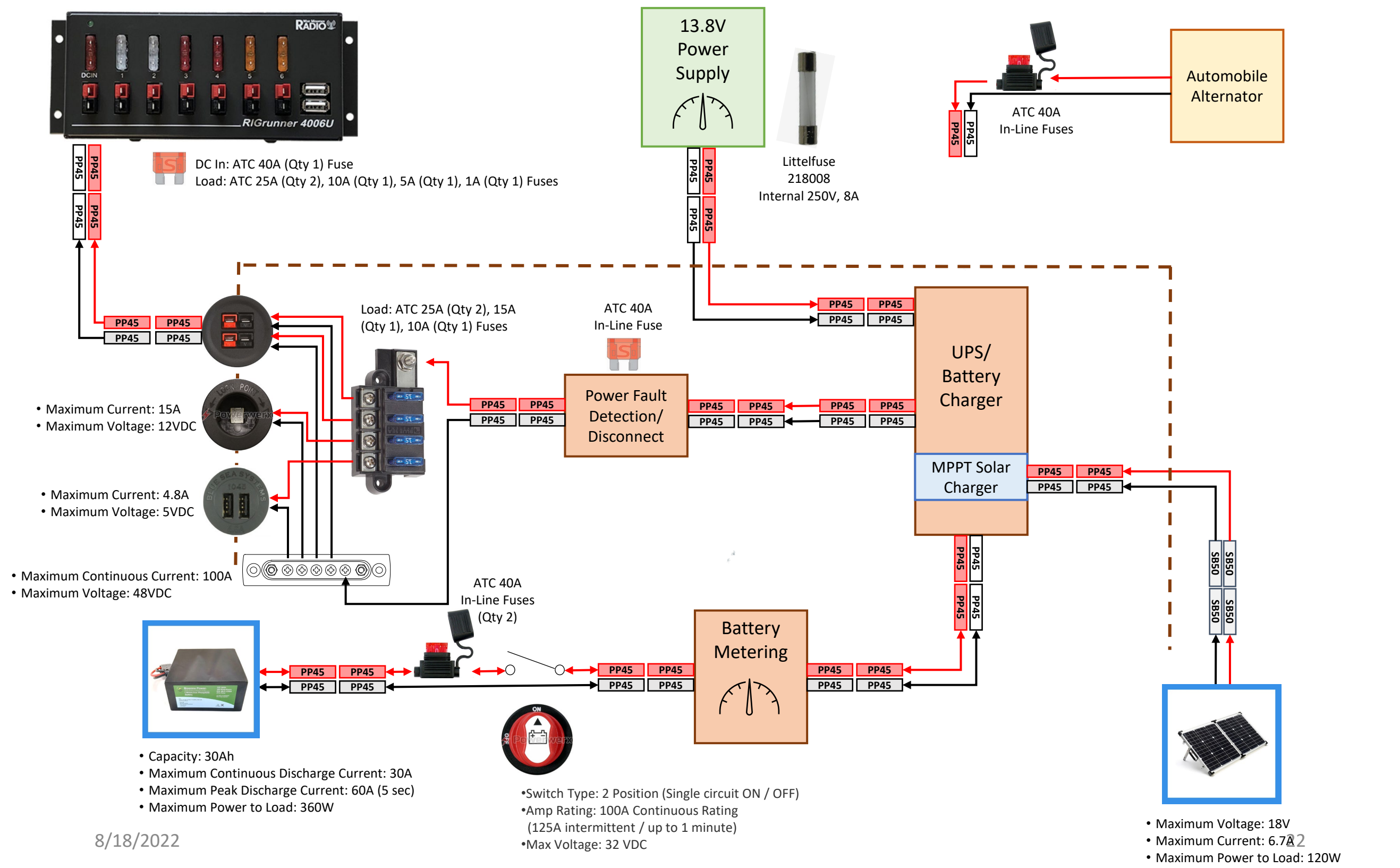
Conclusion



- Comments and questions



Battery Go-Box Wiring Diagram





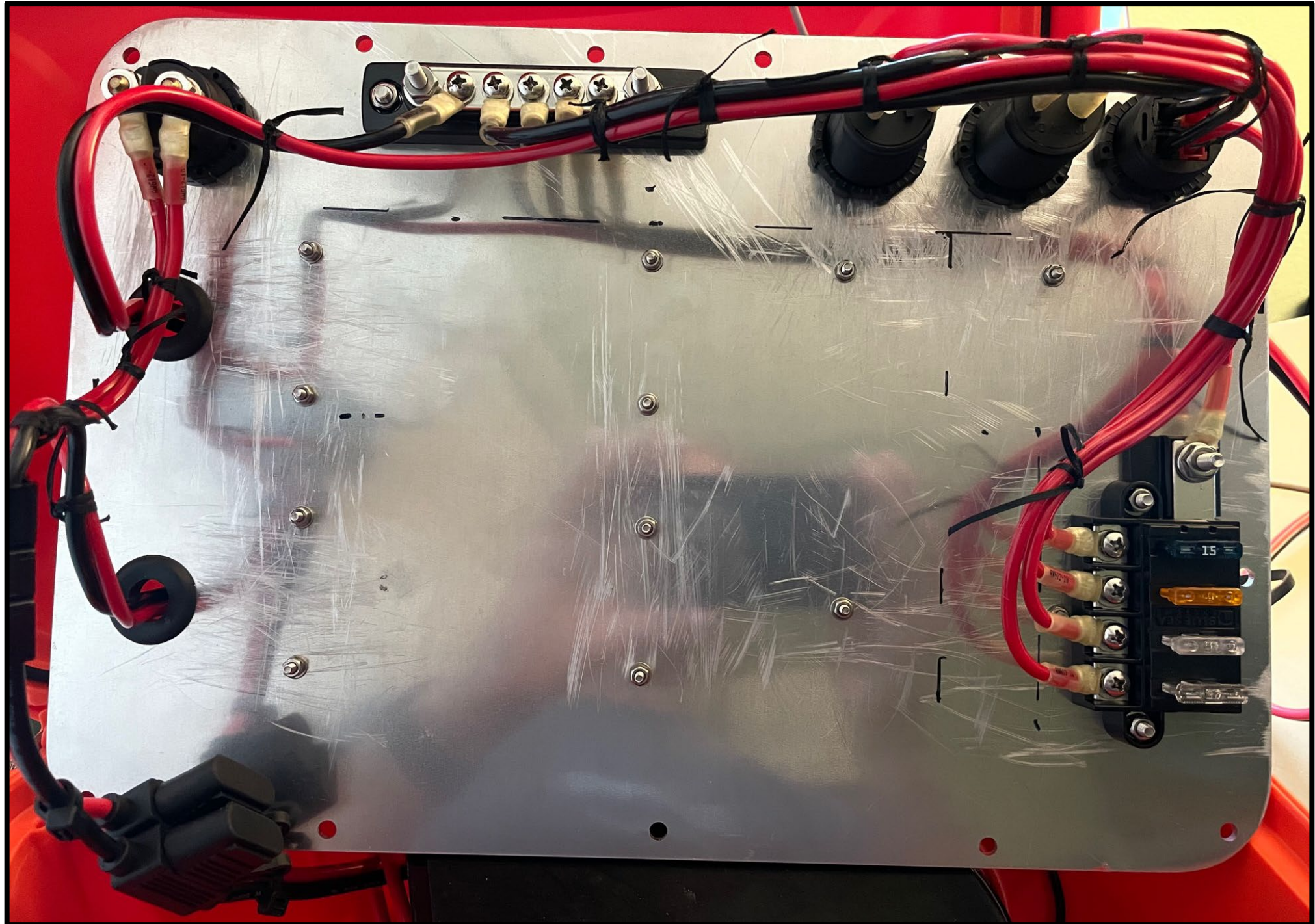
Battery Go-Box Control Panel Photo





Battery Go-Box

Control Panel Interior Photo





Battery Go-Box Control Panel View

