Turtleback Trailers Victron Lithium System Overview:

Thank you for the purchase of your new Turtleback trailer. We wish you many happy miles and safe travels. This document is a quick reference guide for our Victron Lithium setup. If you have any questions, comments or concerns please feel free to reach out to us at +1 (855) 732-2383 or send us an email at sales@turtlebacktrailers.com

Note: this document is to be used as reference guide only. Please consult the product manufacturer directly or an approved auto electrician if you are experiencing any technical difficulties.

1. **Component Breakdown:**

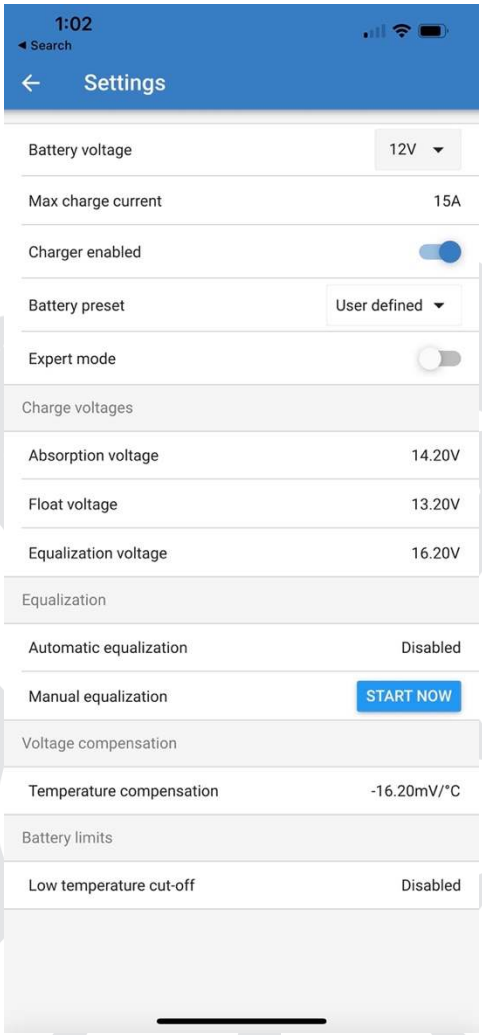
- Single or dual 100AH Relion Lithium Battery (RB100-LT)
- Victron Solar Controller (SmartSolar MPPT 75|15)
- Victron DC-DC charger (Orion TR Smart 12|12-18)
- Victron AC Charger (Blue Smart Charger 12V|15A)
- Victron SOC (BMV-712)
- Xantrax Freedom X 2000 Watt Inverter

2. **Initial Setup**

All Victron product settings will be controlled via the Victron Connect mobile app available on Android and iOS. It will be necessary to change any settings within your Victron system and is a useful tool for remote monitoring of your system.

You will receive your trailer with fully charged batteries and the SOC monitoring system synchronized. Below is a quick breakdown of each components settings.

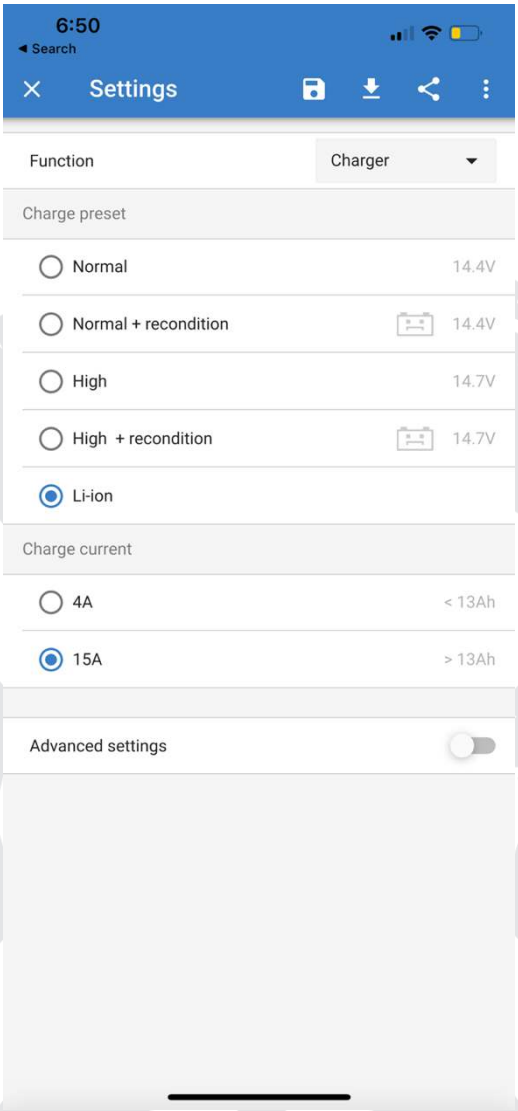
Victron Solar Controller:



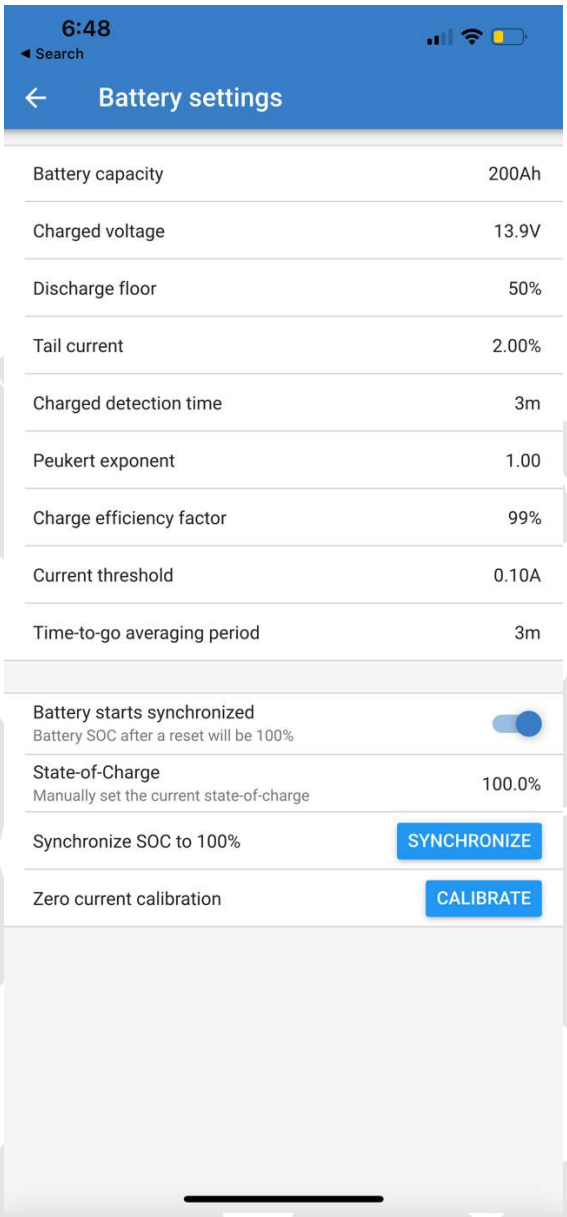
Victron DC DC Charger:

- The DC Chargers battery preset will be in factory default settings. This is due to the fact that most modern vehicles all have different alternator outputs thus resulting in different voltages on the 7 pin output. For optimum performance in DC charging, please consult your specific vehicles owners manual to ensure proper setup. *(Tech Tip: things to look out for are whether your vehicle has a smart or traditional alternator. Check your factory wiring for correct gauge wiring and what size fuse is used on the vehicle side.)*

Victron AC Charger:



Victron SOC:


6:48
Search
Battery settings
Battery capacity
200Ah
Charged voltage
13.9V
Discharge floor
50%
Tail current
2.00%
Charged detection time
3m
Peukert exponent
1.00
Charge efficiency factor
99%
Current threshold
0.10A
Time-to-go averaging period
3m
Battery starts synchronized
Battery SOC after a reset will be 100%
State-of-Charge
Manually set the current state-of-charge
100.0%
Synchronize SOC to 100%
SYNCHRONIZE
Zero current calibration
CALIBRATE

Xantrax Freedom X 2000 Watt Inverter:

3. **Operation:**

Once setup has been initialized, the system should function with minimal useful interference. Charging whilst driving is taken care of the DC-DC charger. When at camp, setup your solar panel and hook it up via the SAE port on the passenger side of the nosebox.

When in storage, hook up your shore power to the 120V inlet on the driver side of the nosebox. The Victron AC charger is a multi stage smart charger, so you do not have to worry about your batteries overcharging or discharging. If you are at a campsite that accommodates 120V hookup, you can plug the trailer in and still utilize the 12V system.

4. **Troubleshooting:**

PROBLEM	SOLUTION	NOTES
The trailer isn't charging when plugged into the 7 pin	Ensure the vehicles 7 pin is functional	Test voltage on the number 4 pin on the vehicle
	Ensure the trailers 7 pin wiring is functional	The 7 pin connector can get corroded over time. Clean out the connectors to make sure it is clear of any debris. The 7 pin wiring can get damaged internally. Use a multimeter to check continuity between the 7 pin plug and connector box in front of the nosebox.
	Check the DC Chargers output fuse	There is a 15A output fuse on the DC charger. Ensure this hasn't blow. Use a multimeter to check for voltage on both the input (from vehicle) and output (to trailer batteries) for correct voltage.

7 Pin Wiring Box Wiring Breakdown:

If you remove the 2 Phillips head screws on the black 7 pin wiring box located on the tongue of the trailer, you will notice a series of terminal studs. Below is a summary of each wires color on the trailer side.

Red – 12V+
White – Ground (12V -)
Blue – Electric brakes
Orange – Reverse lights
Brown – Running lights
Green – Passenger side tail light
Yellow – Driver side tail light

Common Fuses:

15A ATO Fuse (located on DC Charger and Solar Charger outputs)

Note: The 200A and 30A circuit breakers located on the front electrical panel will trip if the maximum amperage is exceeded. These are resettable by simply flick the yellow lever back to the on position.