Battery monitor setup, Boat 1: SBMS0, balancer, solar chargers

One sheet for the boat.

1. SBMS0 (touch screen)

1. **Parameter Settings:** battery type **1 (LiFePO4)**, cells **8**, capacity **1256 Ah**. Press **Store Parameters**. (If it stops below 1256, enter its top value.)
2. **Advanced Parameter Settings:** parameter **30 = 1182** (131 F). Parameter **29** = the probe's ice-water reading (default until done). **End-of-charge voltage 3.44 V**. Nothing else.
3. **Automation (EXT IO & ADC):** EXTIO4 **Type 1**, EXTIO3 **Type 2** (nothing wired to them). ADC settings: battery shunt **0.2500 milliohm**, PV shunt **0.7500 milliohm**.
4. **Device Settings, Time & Date:** set it. This turns on the 12-month internal log ("mem" lights).
5. **Device Settings, USART: ON, 115200**. WiFi goes off by itself; that is expected.
6. **Device Settings: Save device settings.** Without this, steps 3 to 5 are lost at the next power-off.
7. **Cut power once** so steps 1 and 2 load: pull the short 12-pin ribbon plug at either end, wait for a black screen, plug it back. Lifting one tap wire does not work: the board keeps running through the others.

2. SBMS0: what to look for

- All 8 cell readings about 3.2 to 3.4 V. An **OPEN** flag means a loose tap wire.
- Solar reads 0 in full sun: **swap red and black** at the shunt.
- Battery current backward (charging shows minus): **swap white and yellow**.
- Battery % starts at about 50% and jumps to 100% at the first full charge. Normal.
- Board gets warm or screen stays black: **pull the ribbon plug at once.**
- Add-on board's tiny switches stay as shipped: **MTX, STX, SRX on; WRX, WTX, IO0 off**.

3. JK balancer (Bluetooth)

1. Balancer powered: its 11-pin plug in, its V- and V+ on pack minus and pack plus.
2. Android phone (7 or newer): install **JK BMS** (Jikong). Turn on **Bluetooth and Location**; Android finds nothing with Location off.
3. Open the app, scan, pick the device named **JK...** Stay within about 30 ft.
4. Password if asked: try **1234**, then **123456**.
5. Set **LiFePO4, 8 cells.** Leave the rest at factory: starts at 3.0 V, when cells differ by 0.01 V, up to 2 A.

4. Five Victron solar chargers (Bluetooth)

1. Install **VictronConnect**. Each charger is in its list. PIN **000000**.
2. Battery settings, on all five: battery voltage **24 V** (set once at first power-up; fix it if it shows 12 V); **user-defined lithium**; absorption **27.6 V**; float **27.0 V**; absorption time **30 min**; temperature compensation **OFF**. RX pin left at its default.
3. Check all five again, then turn **Bluetooth OFF** on each, last of all. Turning it back on needs a VE.Direct cable, which the boat does not carry.