MultiMon – MM8 (Mates)

- Satellite expansion board for WatchMonPlus WM5

- On board cell monitoring

- Large heatsink for more effective bypass and balancing

- Modular part of Centralised BMS controlled by WatchMonPlus WatchMonPlus WM5

- Up to 15 MultiMon can be used off one WatchMonPlus WM5

- Capable of 6Ah/day balancing adjustment for each cell.

- Cell Monitoring from 0.50V to 5.50V with 0.001 resolution

- Expands an extra 10 to 15 cells in series (suitable to typical Lithium 48V battery)

- Auto-level (balancing) function at 500mA with activity LED on each cell.

- Allows use of WatchMonPlus WM5 with higher voltage batteries.

- Allows multiple parallel banks of batteries to be managed by one WatchMonPlus WM5.

- Runs on a 12V power supply

- 3 external temperature sensors.

- Parameters fully remotely programmable and software is upgradeable.

- Easy to use pluggable screw-terminal connectors

- Firmware upgrades via USB

- Customisation via USB or Wi-Fi

- Default communication with Master WatchMonPlus WM5 using CANbus

MultiMon (MM8)		Centralised Satellite expansion board for WatchMonPlus WM5.

Note: Requires **WatchMonPlus WM5** Master. Does not work separately

MultiMon – MM8 (Mates)

MultiMon MM8 takes the **WatchMonPlus WM5** to the next level. Both **MM8** and **WM5** use the same easier wiring and connection to Lithium batteries as with a shared loom, such as those from Tesla, Chevy Volt, Fiat etc. without needing to dismantle and get to the individual cells.

All the regular batteries that work with WatchMon4 can also be wired up to a **WM5** or **MM8.** In addition, the wider voltage range even allows for LTO batteries to be measured reliably.

MultiMon allows Multi-String

Separate parallel banks can be monitored and managed together using multi-string. The size of the battery connected to the **MultiMon** should be as similar as possible to the Master **WatchMonPlus** so that when charging and discharging they reach full and empty together.

Each **MM8** should never span more than one battery bank. E.g. 5 x 12s batteries (60s) **CAN NOT** be spread across a **WM5** + 3 **MM8** (60s) as each bank needs their own **MM8**

MultiMon allows Higher Voltages

WatchMonPlus WM5 was limited to between 10-15s thereby limiting it to 36V - 48V nominal, or 24V if using LTO batteries. With **MM8** you can add more monitoring. Add one **MM8** and you can do 20s-30s getting anything from 72V to 96V. But you don't have to stop there as up to 15 **MultiMon** can be stringed together.

CAUTION: Please remember with higher voltage comes higher responsibility and care required. **STAY SAFE** and get professional advice and help if you are unsure.
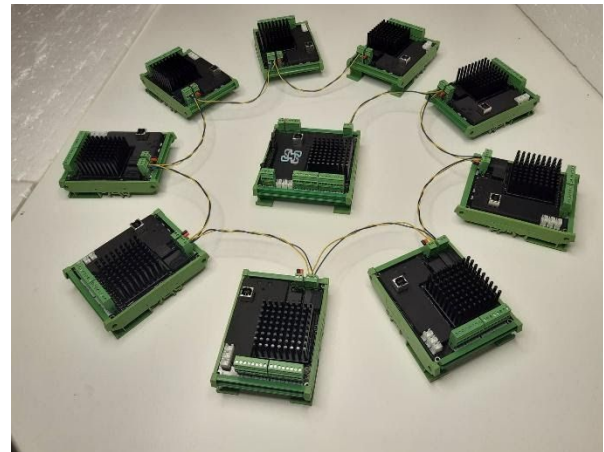
Powering the MultiMon

MultiMon's run on **12V** power rather than the battery voltage. This can be achieved by using a **48V-12V DC-DC** is necessary or an external **12V** supply. It must be fully isolated from the accessory circuit. A plug pack and daisy chain is acceptable.

CANbus Communication

The **WatchMonPlus WM5** can communicate with both the charger/inverter **MM8** network.

CANbus wiring from the **Master WM5** to the last satellite in the sequence requires a **120 Ohm resistor** in the last **MM8** in the string. Twisted cable should be used as per other **CAN** interfaces.

TestMon

Prior to use or when altering the wiring ALWAYS unplug the battery and test using the **TestMon.** This ensures that the wiring is correct and prevents damage to the board from incorrect wiring
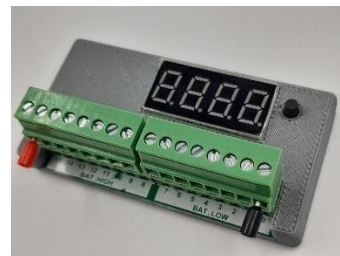
MultiMon – MM8 (Mates)

MultiMon MM8 (Typical Circuit Diagram)

MultiMon MM8 Wiring