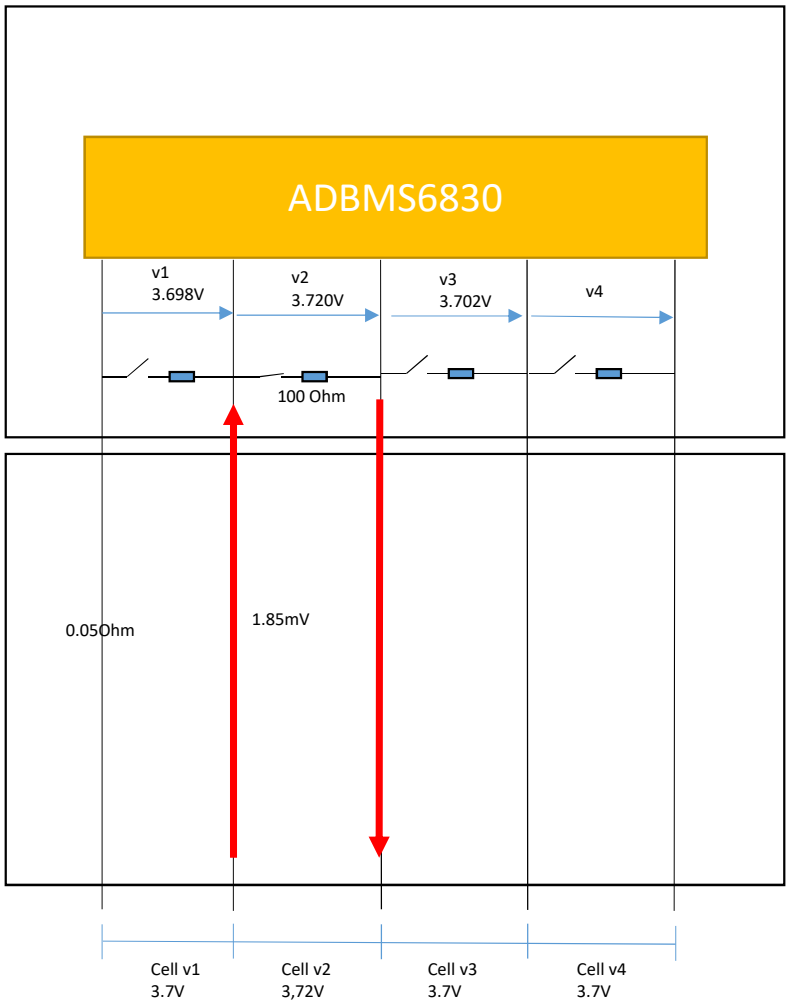
Cell Balancing HW layouts

Single wire setup:

- Combining measurement and bleeding actuation onto the same wire will cause noticeable disturbance in the cell voltage measurements.
- Bleeding one cell with a 100 Ohm resistor will induce a 37 mA current. If the measurement wire is lengthy (on the module PCB) it may have a resistance of approx. 0.05 Ohm, leading to a voltage drop of 1.85 mV.
- This voltage drop may lead to inaccurate voltage readings and therefore Soc estimations.
- This design is simpler in terms of number of ports and PCB complexity.



CMU PCB

Module PCB

Cells

Dual wire setup:

- By having a dedicated voltage measurement wire, the BMS avoids cell bleeding interference with the cell voltage measurements.
- The main drawback lays in the fact that the CMU PCB and the Module PCB will require twice as much ports to communicate. One for the measurement and one for bleeding the cell. Also this increase the complexity of the PCB's.