

How do I gauge high capacity packs?

Capacity limit of TI bq gas gauges:

- bq20z70/z75, bq20z80, bq20z90/z95, bq2084 → 16Ah
- bq20z40/z45, bq3060 → 32Ah
- bq2060A → 65Ah (with microVolt-hour units)

To use bq20z70 with, for example, 25Ah packs:

- We can fool the gauge by current calibration: for a 5mohm R_{sense} , if we calibrate at an actual current of 4A, we can use the value 2A for calibration so the **CC Gain** and **CC Delta** would become 10mohm. We now have a calibration ratio of 50%
- The pack now appears to be a 12.5Ah pack to the bq20z70.
- Set all current parameters based on application needs
- Modify all current-related data flash values by the calibration ratio, example: 1st level OC from 6000mA to 3000mA; pay attention to sleep current/quit current, as these are impacted as well; also modify DesignCapacity, DesignEnergy
- Exception is AFE OC Dsg, AFE SC Chg and Dsg: calculate these values based on the voltage = true R_{sense} * true current