
1. Introduction

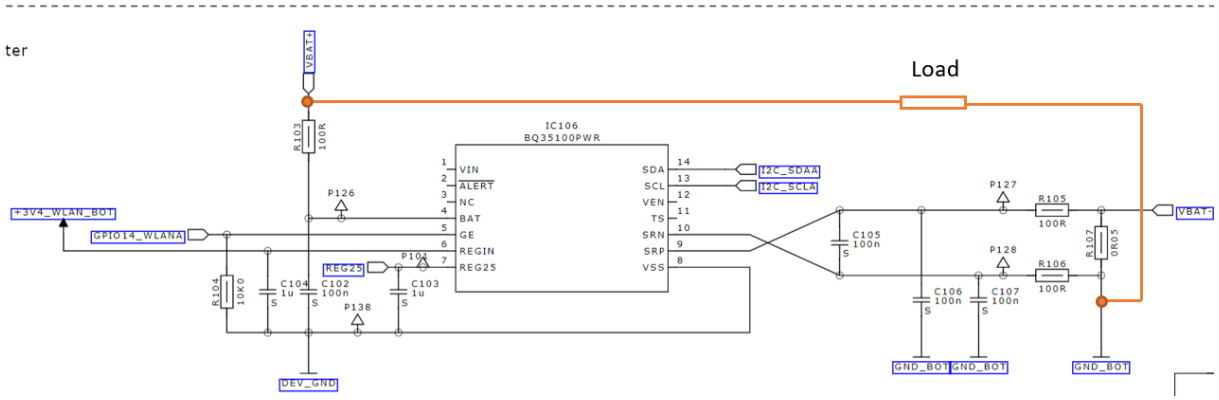
This document describes the test steps for calibrating the bq35100 battery management system using EV2400 and following the bq35100 Manual [link]. The calibration process encountered some issues due to the circuit under test having a minimum load.

2. Tools

- Battery Management Studio [link]
- EV2400 Interface Module [link]
- PCB under test
- 3.3Ohm 5W resistor (Load resistor)
- Otii arc (Current and voltage meter)

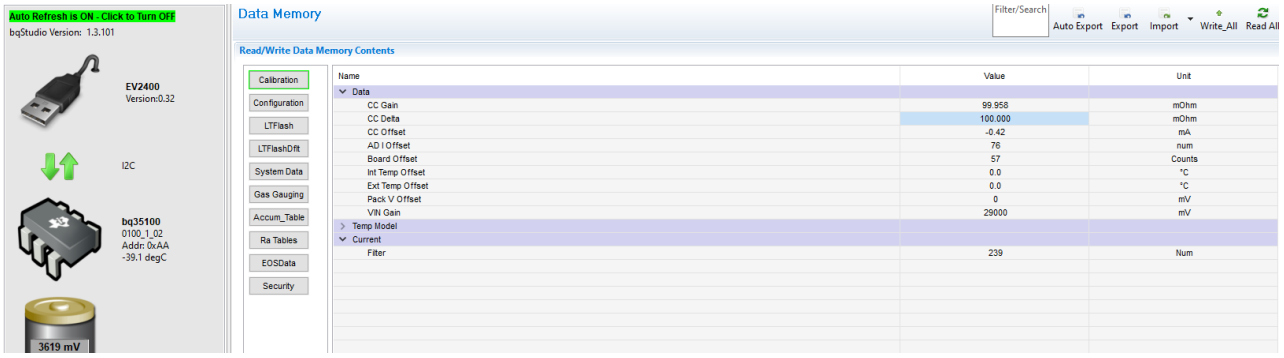
3. Hardware setup

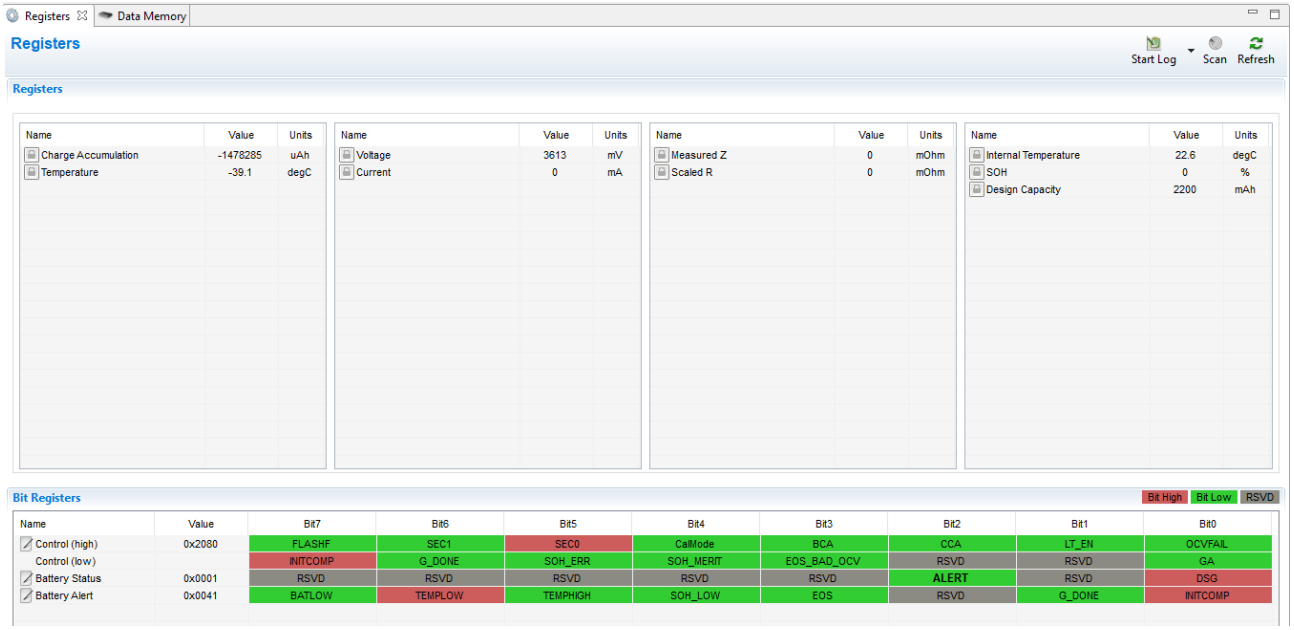
The circuit under test was connected according to the following image, with the I2C lines, ground, and GE pin pullup. The load resistor (in orange) was connected as shown in the image. This resistor was calculated to be a 1-A load as suggested.

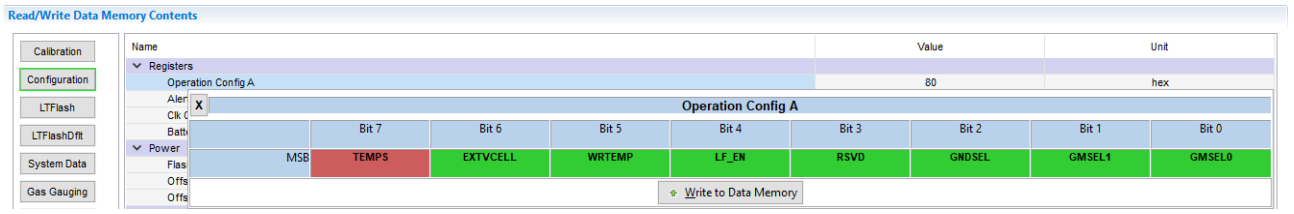


4. Software setup

In the images provided below, two screenshots from the Battery Management Studio can be observed, captured prior to initiating the calibration process. These images serve as a reference to the initial conditions and settings before calibration.







5. Software setup

Following the bq35100 Manual, the calibration process was initiated.

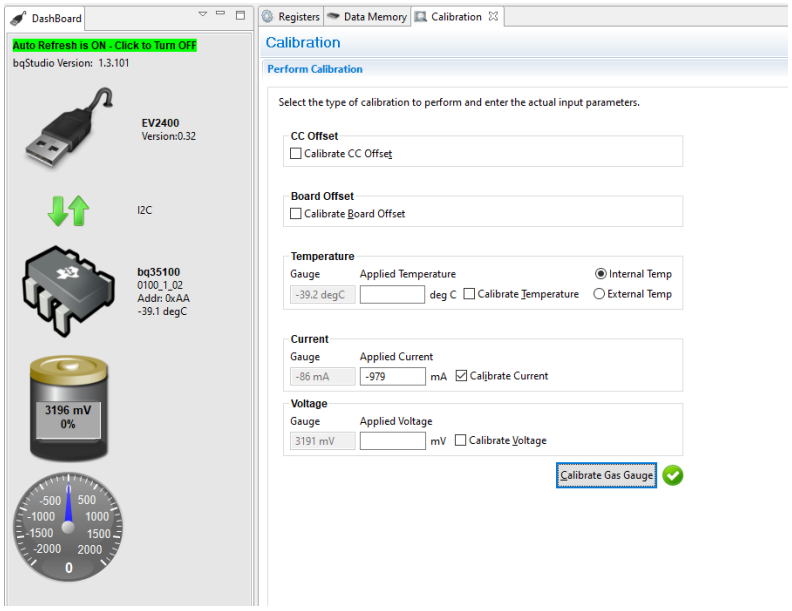
3.3.3 Current Calibration

The gauge offers *CC Offset* and *Board Offset* calibration options to zero any residual current that may be reported by the gauge. These calibrations are only required if the gauge does not report 0 mA current when no current should be present.

- Select the *CC Offset* calibration option.
- Press the **Calibrate Gas Gauge** button to calibrate.
- Verify whether the Current reports 0 mA. Proceed with the *Board Offset Current* calibration of current is reported.
- Select *CC Offset* calibration option
- Press the **Calibrate Gas Gauge** button to calibrate.
- Verify whether the *Current* reports 0 mA.
- Connect a 1-A load from BAT+ to PACK–.
- Enter '–1000' in the Applied Current field and select the *Calibrate Current* box.
- Press the **Calibrate Gas Gauge** button to calibrate.
- Deselect the *Calibrate Current* box after current calibration has completed.

However, some steps were not possible due to the circuit under test having a minimum load, resulting in errors during the CC Offset and Board Offset calibration.

To proceed with the calibration, a 1-A load was connected to the PCB and the apply current was set on the battery management studio (-979mA).



6. Result

After the calibration process, no changes were observed in the data memory readings for CC gain and CC delta. The sensor resistor's current and voltage measurements were -980mA and 3.6V, respectively. The calibration process was also tested with a 2-A load but yielded no change in the results, indicating that the calibration process is not working as expected.