

## ***bq40z50 to bq40z50-R1 Change List***

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*Battery Management*

### **ABSTRACT**

This document describes the changes made from bq40z50 to bq40z50-R1. The latest ordering information and data sheet is available on the TI Web site.

### **INTRODUCTION**

bq40z50-R1 firmware version 1.06 has been released to enable several feature additions and performance improvements. The following new orderable part numbers have been released which ship pre-programmed with this new version of firmware:

- bq40z50RSMT-R1
- bq40z50RSMR-R1

To work with bq40z50-R1, download the latest version of [Battery Management Studio](#) (bqStudio) evaluation software from ti.com.

The existing bq40z50 ICs and EVMs can be upgraded to bq40z50-R1 FW.

## CHANGE DETAILS

Table 1. Change Details

| CHANGE                     | bq40z50-R1  | bq40z50   | Comments  |
|----------------------------|---|---|---|
| No Load Reserve capacity   | New feature introduced to work with bq2961xy LDO integrated protector                                     | Feature does not exist  | Feature allows to input reserve capacity after RSOC reaches 0% for powering the RTC circuit via the LDO in bq2961xy |
| Clamp Current              | If measured current exceeds Max value, the current is clamped to max value in the discharge direction     | In the discharge direction, if current $\leq -32768\text{mA}$ , then it is reported as 0mA. | Current is clamped to max value and prevents roll over  |
| Term V Hold                | Remaining capacity reports 0% after voltage stays below termination for Term V Hold time.                 | Feature does not exist  | Avoids RSOC reporting 0% from a short high dsg current pulse driving voltage below termination voltage momentarily  |
| PF Shutdown                | Device enters shutdown in Permanent failure mode when battery voltage is less than configurable threshold | Feature does not exist  | Minimizes power consumption and avoids draining the battery further   |
| ManufacturerStatus() [CAL] | ManufacturerStatus()[CAL] bit is set when Manufacturing Status Init is zero at power on reset             | ManufacturerStatus()[CAL] bit is not set  | Features added for ease of customer production line processing  |
| Constant FCC during charge | FCC remains stable without changes in Charge mode   | FCC can change in Charge mode   | Supports Windows OS requirement of FCC remaining stable in Charge mode  |
| 4-Byte block read/write    | 4-byte block read/write available in gauge SEALED mode  | Feature does not exist  | Feature added to support Microsoft BIOS requirements  |
| Algorithm Robustness       | Several algorithm robustness improvements   | Improvements do not exist   | Helps with smoother/accurate reporting of SOC/FCC   |

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