bq40z50 to bq40z50-R1 Change List

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 <= -32768mA, 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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