Application Report
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bq27425-G1 to bq27425-Gx Change List

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ABSTRACT

This document describes the changes made from bq27425-G1 to bq27425-G2x. The latest ordering information and data sheet is available on the Texas Instruments (TI) Web site.

NOTE: bq27425-G1 uses FW version 2.02 and the bq27425-G2x uses FW version 2.05

1 Introduction

The bq27425-G2 firmware version 2.05 has been released to enable several feature additions. The following new orderable part numbers have been released with ship preprogrammed with to the new version of firmware:

- BQ27425YZFR-G2A
- BQ27425YZFT-G2A

The latest version of the evaluation software is required to be able to read and write all the EEPROM and RAM configuration locations. Existing bq27425-G1 (including EVMs) cannot be upgraded to the latest firmware version because of the nature of a ROM device.

2 Change Details

Table 1. Change Details

CHANGE	bq27425-G1	bq27425-G2x	Comments
DODatEOC updates	DODatEOC is computed almost every time a simulation occurs.	DODatEOC is only computed during charge before charge termination is detected.	Feature improvement
Last run data updates (AvgI, AvgP, DeltaV, and so forth)	Last run data (AvgI, AvgP, DeltaV, and so forth) not updated on exit of discharge if resistance updates are not allowed.	Last run data will update (AvgI, AvgP, DeltaV, and so forth) on exit of discharge if discharge duration is longer than 500s even if resistance updates are not allowed.	Feature improvement
Terminate voltage valid time	SOC forced to 0% if Voltage() less than terminate voltage	Configuration parameter (*TermV Valid t*) added to specify the number of seconds the Voltage() needs to be less than terminate voltage for SOC to be forced to 0%. This parameter is not in EEPROM.	Feature improvement
MaxDeltaV	Configuration parameter not present	Configuration parameter (*MaxDeltaV*) added to specify maximum deltaV allowed. This parameter is not in EEPROM.	Feature improvement
Over discharge	Gauge could report possible jumps in SOC due to full charge after an over discharge.	Gauge keeps track of removed capacity in more robust fashion in order to avoid SOC jumps in certain corner cases.	Feature improvement
SOC smoothing	Feature not present	SOC Smoothing added to facilitate smooth transition of reported SOC during charge and discharge. Added register bit(s) ● SmoothEN in operation configuration register	New feature
EEPROM update	V at charge termination located in ROM.	V at charge termination moved to EEPROM.	Feature change
100-second averaging	Feature not present. Possibility to have an unrelaxed OCV measurement.	Feature added to improve voltage measurements in order to more accurately calculate DOD0().	New feature
Transient factors	Feature not present	Feature added to improve OCV readings after POR or battery insertion event.	New feature
Manufacturer information block	Manufacturer information block is 12 bytes.	Manufacturer information block reduced to 8 bytes for added features.	Feature changes

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