Application Report
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bq27505-J4 to bq27505-J5 CHANGE LIST

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ABSTRACT

This document describes the changes made from bq27505-J4 to bq27505-J5. The latest ordering information and data sheet is available on the TI Web site.

NOTE: bq27505-J4 uses FW version 2.24 and bq27505-J5 uses FW version 2.29

1 Introduction

bq27505-J5 firmware version 2.29 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:

- bq27505YZGR-J5
- bq27505YZGT-J5

The latest version of the evaluation software is required to be able to read and write all the data flash configuration locations. The necessary evaluation software and the corresponding v2.29 SENC file can be downloaded from the bq27505-J5 product folder on ti.com. Existing bq27505 (including EVMs) can be upgraded to the latest firmware version by following the instructions in application note SLUA453.

NOTE: If a golden image created for another version of bq27505 is loaded into an IC running firmware version 2.29, the IC will become non-functional and must be replaced. Please ensure all instructions in SLUA453 are followed if upgrading ICs or converting your production line to bq27505-J5. The best practice is to generate a new golden image (DFI file) for bq27505-J5.

2 Change Details

Table 1. Change Details

CHANGE	bq27505-J4	bq27505-J5	Comments
DeltaVMaxDelta feature was added.	DeltaV change is not limited upwards during a discharge.	The DF parameter limits the amount of change in DeltaV during a discharge. The change will be capped to (old value ±DeltaV Max Delta).	Algorithm Improvement
Debug Options dataflash register bits 0 and 1 change function for DeltaV behavior control	*Debug Options* bits 0 and 1 are DeltaVOpt0 and DeltaVopt1. Functions are described in the application note SLUA552, Table 2.	Debug Options bits 0 and 1 are DVNOAVG and DVMIN. Function is changed as described in the datasheet. DVNOAVG = 1 means use last detected voltage dip as new DeltaV DVNOAVG = 0 (default) means to average voltage dips during discharge to obtain new DeltaV. DVMIN = 1 means use the MinDeltaVoltage value as the floor value for DeltaV DVMIN = 0 (default) means do not use MinDeltaVoltage value as the floor value for DeltaV.	Algorithm Improvement
Qmax Update	Qmax can be updated if passed charge in either “charging” or “discharging” direction has occurred.	Default to only allow Qmax updates if passed charge in “charging” direction has occurred.	
New bit added to *Debug Options*	Option not available.	DSGQM function was added to *Debug Options* bit 3. When set this flag allows Qmax updates on discharge. The default is Qmax is only updated after a charge cycle.	Algorithm Improvement
Qmax Update	Qmax Passed Charge on exit from relaxation is not cleared.	Clear Qmax Passed Charge on exit from relaxation if OCV/dod0 updated. This clears any potentially lost accumulated charge during sleep that may cause Qmax errors.	Algorithm Improvement
Allow SOH to be computed based on a constant load and a fixed temperature.	SOH is not calculated based on a constant load and also uses the current temperature.	Eliminate the sensitivity of the SOH value to changes in temperature, load and load mode. SOH is computed based on a constant-load and fixed temperature.	Bug Fix. This will keep SOH from fluctuating due to load and temperature changes.

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