

bq27505-J2 to bq27505-J3 Change List

David Maxwell

PMP - Battery Management

ABSTRACT

This document describes the change made from bq27505-J2 to bq27505-J3. The latest ordering information and data sheet are available on the TI Web site.

NOTE: The bq27505-J2 uses firmware version 2.15 and the bq27505-J3 uses firmware version 2.20.

1 Introduction

The bq27505-J3 firmware version 2.20 has been released to enable several feature additions and performance improvements. The following new orderable part numbers have been released which ship preprogrammed with this new version of firmware:

- bq27505YZGR-J3
- bq27505YZGT-J3

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 v2.20 SENC file can be downloaded from the bq27505-J3 product folder on the Texas Instruments Web site at www.ti.com. Existing bq27505 devices, (including the evaluation modules) can be upgraded to the latest firmware version by following the instructions in the application report [SLUA453](#).

Note: If a golden image created for another version of bq27505 is loaded into an integrated circuit (IC) running firmware version 2.20, the IC becomes nonfunctional and must be replaced. Ensure that all instructions in [SLUA453](#) are followed if upgrading ICs or converting your production line to bq27505-J3. The best practice is to generate a new golden image (DFI file) for the bq27505-J3.

2 Change Details

Table 1. Change Details

CHANGE	bq27505-J3	bq27505-J2	COMMENTS
Initialize the ADC offset calibration	Offset calibration for ADC current measurement is initialized.	First ADC current measurement is inaccurate due to lack of initialization of ADC offset calibration.	The first ADC current measurement is inaccurate if ADC calibration is not initialized.
Add Config register SOC_int and DeltaVOption	Config Register: SOC_int, DeltaVOption are added for more debug capabilities.	Config register option for debug does not exist.	Firmware improvement
Disable unfiltered Ra update	An unfiltered Ra grid point will not be recorded in a Ra table	Allow an unfiltered Ra grid point to be recorded in a Ra table	Unfiltered Ra must not be recorded in Ra table.
Add register bit BATGDINIT in OpConfigB	BAT_GD state during initialization is now an option that is set by BATGDINIT bit in OpConfigB register.	BAT_GD is negated during initialization.	If BATGDINIT is set, BAT_GD is immediately asserted during initialization to meet certain system requirements.

Table 1. Change Details (continued)

CHANGE	bq27505-J3	bq27505-J2	COMMENTS
Fix OCV_CMD	OCV_CMD can be used after a charge cycle with Taper termination.	OCV_CMD cannot be used after a charge cycle with Taper termination.	Remaining Capacity must not be adversely affected by the OCV_CMD, providing the gauge has proper optimization and OCV_CMD is not issued until some relaxation after charging has occurred (wait at least 10 minutes).
Disable Qmax update if RUP_DIS is set	Qmax cannot update if RUP_DIS is set.	Qmax can be learned even if the RUP_DIS is set.	Qmax must not be updated is RUP_DIS bit is set to indicate a false condition in resistance update.

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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
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