

BQ27Z561 to BQ27Z561-R1 Change List

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ABSTRACT

This document describes the changes made from the BQ27Z561 device to the BQ27Z561-R1 device. The *BQ27Z561-R1 Impedance Track™ Battery Gas Gauge Solution for 1-Series Cell Li-ion Battery Packs Data Sheet (SLUSDH5)*, the latest ordering information, and the *BQ27Z561-R1 Technical Reference Manual (SLUUBY5)* are available on TI.com.

1 Trademarks

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2 Introduction

The BQ27Z561-R1 device enables several feature additions and performance improvements to the BQ27Z561 device.

3 Change Details

Table 1. Change Descriptions

Change Description	BQ27Z561	BQ27Z561-R1	Comments
LiFePO4 chemistry support	Not present	New feature	The LFP_RELAX feature supports slower relaxation at the end of charge. There is a change of OCVFR functionality when LiFePO4 is selected to clear after 48 hours or when cell voltage falls below FlatVoltMin . This new feature enables the option to use DOD data at valid charge termination (VCT) and after relaxation is detected.
<i>ManufacturerInfoB()</i> support	Not present	New feature	An additional block read of scratch pad data flash that can be 4 to 32 bytes long
Time-based lifetime features	Not present	New feature	New time-based lifetime features that include total run time and time spent at different temperature ranges
Fast OCV update option	Not present	New feature	When enabled, voltage data is used after a fixed time for OCV calculation rather than waiting for a dV/dt of 2 μ s, which is the normal method.
Battery Trip Point (BTP) feature	Not present	New feature	Either the BTP feature or the INT feature can be selected for use with INT, which is also enabled with additional options.
Ability for charging thresholds to be manipulated by <i>RelativeStateOfCharge()</i> (RSOC)	Not present	New feature	Reported charging parameters can be optionally changed based on a level of RSOC() rather than voltage.
Improved state-of-health (SOH) algorithm	Present, but with a less-enhanced algorithm	Enhanced feature	The state-of-health (SOH) algorithm now uses the following: <ul style="list-style-type: none"> • Min Delta Voltage, rather than Delta Voltage, to calculate EDV • The JEITA Rec Temp Charging:Voltage, rather than the present voltage at charge termination • The new data flash SOH Temp A and SOH Temp K, which are generated and used in simulations along with SOH Load Rate • The current used at EOC during simulation is Taper Current, rather than the measured current.
Enhanced <i>ChargingCurrent()</i> and <i>ChargingVoltage()</i> reporting options	Present, but with less-enhanced options	Enhanced feature	<i>ChargingCurrent()</i> and <i>ChargingVoltage()</i> can have separate values for the JEITA ranges of STL and STH, and can be enabled with SLEEPCHG to report non-zero values when charging and when the device is in SLEEP mode.

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