

## **bq27500 Errata ([SLUS785](#))**

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### **1 Summary**

This errata summarizes the discrepancies among firmware versions 1.00, 1.02, 1.06, and 1.08 of the bq27500 and the data sheet, [SLUS785D](#).

- **Part Numbers**—bq27500drzr, bq27500drzt, and bq27500EVM
- **Lot Code**—A207, A20E, DHNE, K042, K043, K04R (See [Section 3](#) package markings diagram to identify affected material)
- **Product Type**—bq27500 IC samples (or purchased), bq27500 EVM sampled or purchased
- **Device Version**—1.00, 1.02, 1.06, 1.08

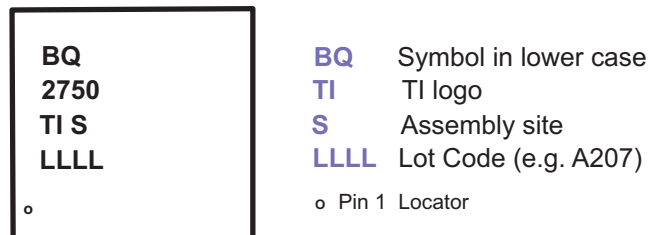
### **2 Discrepancies**

See the following tables for a list of discrepancies for device versions 1.00, 1.02, 1.06, and 1.08.

### **3 Identification of Affected Materials**

The affected material can be identified by the top-side brand on the bq27500 IC in the location shown in [Figure 1](#), as LLLL.

**Figure 1. bq27500 IC Markings**



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**Note:** IC Markings are left-aligned.

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#### 4 bq27500 Firmware Revision and Errata List

Firmware Revision	Shipment Form	IC Lot Codes	Discrepancies
v1.00	Samples EVMs (sampled or purchased)	A207, A20E	<ol style="list-style-type: none"> <li>The BAT_GD pin does not operate properly based on temperature.               <ul style="list-style-type: none"> <li>SLUS785D data sheet: The BAT_GD pin and the CHG_INH bit in the Flags () register are to change state based on the values programmed in data flash (<b>Charge Inhibit Temp Low</b> and <b>Charge Inhibit Temp High</b>) as described in Table 4-4 of section 5.3.4.</li> <li>Operation: The BAT_GD pin and CHG_INH bit <i>are not</i> influenced by the data flash values <b>Charge Inhibit Temp Low</b> and <b>Charge Inhibit Temp High</b>. The BAT_GD pin changes state when temperature exceeds the value programmed in data flash <b>OT Chg</b>.</li> </ul> </li> <li>The XCHG bit does not operate properly.               <ul style="list-style-type: none"> <li>SLUS785D data sheet: The XCHG bit is set when the temperature falls outside the range set by the data flash values <b>Suspend Temp Low</b> and <b>Suspend Temp High</b> as described in Table 4-4.</li> <li>Operation: The XCHG bit <i>is not</i> influenced by the data flash <b>Suspend Temp Low</b> and <b>Suspend Temp High</b> values.</li> </ul> </li> <li>The part may not enter SLEEP Mode when discharge current is less than <b>Sleep Current</b> and greater than 0.               <ul style="list-style-type: none"> <li>SLUS785D data sheet: SLEEP mode is entered automatically if the feature is enabled (<b>Operation Configuration [SLEEP] = 1</b>) and AverageCurrent () is below the programmable level <b>Sleep Current</b>.</li> <li>Operation: The part may not enter Sleep mode.</li> </ul> </li> <li>Fuel gauging with <b>Load Mode = 1</b> (indicating the constant power model) does not operate properly.               <ul style="list-style-type: none"> <li>SLUS785D data sheet: Section 5.2.1 allows the selection of a constant current fuel gauge model or constant power fuel gauge model.</li> <li>Operation: Only the constant current fuel gauge model operates (<b>Load Mode = 0</b>) properly. For the bq27500, this is the recommended configuration.</li> </ul> </li> <li>Wake from HIBERNATE mode may require multiple communication attempts.               <ul style="list-style-type: none"> <li>SLUS785D data sheet: Section 5.7.4. The gauge remains in HIBERNATE mode until the battery is removed or the system issues a direct I2C command to the gauge.</li> <li>Operation: Wake from HIBERNATE mode requires multiple direct communication attempts.</li> </ul> </li> <li>The part may not enter HIBERNATE mode with [HIBERNATE] = 1 in CONTROL_STATUS               <ul style="list-style-type: none"> <li>SLUS785D data sheet: Section 5.7.4. The gauge enters HIBERNATE when HIBERNATE = 1 in CONTROL_STATUS register and a valid OCV measurement is taken AND the current</li> <li>Operation: The <b>HIBERNATE</b> bit will clear if the battery is not in a relaxed state preventing entry into HIBERNATE mode.</li> </ul> </li> </ol>
<p>The affected material can be identified by the lot code on the bq27500 IC in the location shown in <a href="#">Figure 1</a>.</p>			

## 5 bq27500 Firmware Revision and Errata List

Firmware Revision	Shipment Form	IC Lot Codes	Discrepancies
v1.02	Samples and production shipments  EVMs (sampled or purchased))	D4NE, A207, K042, K043, K04R	<ol style="list-style-type: none"> <li>The part may not enter SLEEP Mode when discharge current is less than <b>Sleep Current</b> and greater than 0.               <ul style="list-style-type: none"> <li>SLUS785D data sheet: SLEEP mode is entered automatically if the feature is enabled (<b>Operation Configuration [SLEEP] = 1</b>) and AverageCurrent () is below the programmable level <b>Sleep Current</b>.</li> <li>Operation: The part may not enter Sleep mode.</li> </ul> </li> <li>Fuel gauging with <b>Load Mode = 1</b> (indicating the constant power model) does not operate properly.               <ul style="list-style-type: none"> <li>SLUS785D data sheet: Section 5.2.1 allows the selection of a constant current fuel gauge model or constant power fuel gauge model.</li> <li>Operation: Only the constant current fuel gauge model operates (<b>Load Mode = 0</b>) properly. For the bq27500, this is the recommended configuration.</li> </ul> </li> <li>Wake from HIBERNATE mode may require multiple communication attempts.               <ul style="list-style-type: none"> <li>SLUS785D data sheet: Section 5.7.4. The gauge remains in HIBERNATE mode until the battery is removed or the system issues a direct I2C command to the gauge.</li> <li>Operation: Wake from HIBERNATE mode requires multiple direct communication attempts.</li> </ul> </li> <li>The part may not enter HIBERNATE mode with <b>[HIBERNATE] = 1</b> in CONTROL_STATUS               <ul style="list-style-type: none"> <li>SLUS785D data sheet: Section 5.7.4. The gauge enters HIBERNATE when <b>HIBERNATE = 1</b> in CONTROL_STATUS register and a valid OCV measurement is taken AND the current drops below <b>Hibernate Current</b>.</li> <li>Operation: The <b>HIBERNATE</b> bit will clear if the battery is not in a relaxed state preventing entry into HIBERNATE mode.</li> </ul> </li> </ol>

The affected material can be identified by the lot code on the bq27500 IC in the location shown in [Figure 1](#).

**6 bq27500 Firmware Revision and Errata List**

Firmware Revision	Shipment Form	IC Lot Codes	Discrepancies
v1.06	Samples and production shipments	Any other code not listed for Revision v1.00 or v1.02.	<p>1. Fuel gauging with <b>Load Mode</b> = 1 (indicating the constant power model) does not operate properly.</p> <ul style="list-style-type: none"> <li>• SLUS785D data sheet: Section 5.2.1 allows the selection of a constant current fuel gauge model or constant power fuel gauge model.</li> <li>• Operation: Only the constant current fuel gauge model operates (<b>Load Mode</b> = 0) properly. For the bq27500, this is the recommended configuration.</li> </ul> <p>2. The part may not enter HIBERNATE mode with <b>[HIBERNATE] = 1</b> in CONTROL_STATUS</p> <ul style="list-style-type: none"> <li>• SLUS785D data sheet: Section 5.7.4. The gauge enters HIBERNATE when <b>HIBERNATE = 1</b> in CONTROL_STATUS register and a valid OCV measurement is taken AND the current drops below <b>Hibernate Current</b>.</li> <li>• Operation: The <b>HIBERNATE</b> bit will clear if the battery is not in a relaxed state preventing entry into HIBERNATE mode.</li> </ul> <p>3. The part enters HIBERNATE mode based on battery voltage less than <b>Hibernate Voltage</b> unconditionally.</p> <ul style="list-style-type: none"> <li>• SLUS785D Datasheet: Section 5.7.4. The gauge enters HIBERNATE when a valid OCV measurement is taken.</li> <li>• Operation: The part enters HIBERNATE mode unconditionally with Vcell (battery voltage) less than <b>Hibernate Voltage</b>.</li> </ul> <p>4. The part may exit HIBERNATE mode on I2C communication which is not directed to the bq27500.</p> <ul style="list-style-type: none"> <li>• SLUS785D data sheet: Section 5.7.4. I2C communication that is not directed to the gauge does not wake the gauge.</li> <li>• Operation: The part may exit HIBERNATE mode on I2C communication which is not directed to the gauge</li> </ul> <p>5. The part does not always take an OCV reading upon exiting HIBERNATE mode.</p> <ul style="list-style-type: none"> <li>• SLUS785D data sheet: Section 5.7.4. After waking, the gauge can proceed the initialization of battery information (eg OCV).</li> <li>• Operation: The part may not always take an OCV reading upon exiting HIBERNATE mode.</li> </ul>
The affected material can be identified by the lot code on the bq27500 IC in the location shown in <a href="#">Figure 1</a>			
<b>Firmware revision v1.08 of bq27500 (Part number bq27500-V100) corrects the discrepancies in firmware revision v1.06.</b>			

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