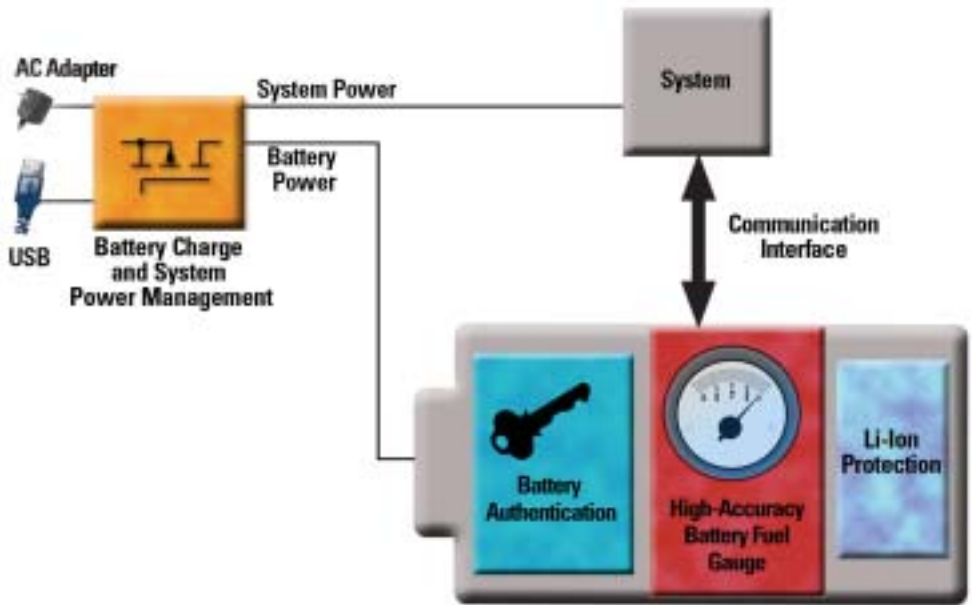


Battery Management

Battery Chargers, Battery Fuel Gauges, Lithium Battery Protection, and Battery Authentication from Texas Instruments



For more information on battery management products, technologies and selection tools, visit:

www.ti.com/battman

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| | Battery Charge Management | Battery Fuel Gauges | Lithium Battery Protection | Battery Authentication |
|-----------------------------|--|--|---|-------------------------|
| NiCd | <u>Multiple Cells</u> | <u>Multiple Cells</u> | | bq26150 |
| NiMH | bq2002 bq2004 bq24400 | bq2014H bq2016 | | |
| Li-Ion | <u>1 Cell</u> | <u>1 Cell</u> | <u>1 Cell</u> | bq26150 |
| Lithium | bq24030 | bq27000 | UCC3952 | |
| Polymer | bq24100 <u>2 Cells</u> b24103 <u>3 Cells</u> bq24105 <u>Multiple Cells (2-4)</u> bq24703 | <u>Multiple Cells (2-4)</u> bq20z80 | <u>2 Cells</u> UCC3911 <u>Multiple Cells (2-4)</u> bq29312A bq29400 | |
| Lead Acid | <u>Multiple Cells</u> bq2013 | <u>Multiple Cells</u> bq2013H | | bq26150 |
| Multiple Chemistries | <u>Multiple Cells</u> bq2000 bq24703 | <u>Multiple Cells</u> bq2060A | | bq26150 |

Battery Charge Management: Linear and switch-mode chargers maximize battery safety, capacity and cycle life.

Battery Fuel Gauges: Fuel gauges are used to accurately track battery activity. Fuel gauges compute the remaining battery capacity and display system run time.

Lithium Battery Protection: Li Battery Pack protection safeguards against voltage, current and temperature extremes to ensure maximized battery safety.

Battery Authentication: Authentication ensures that connected accessories fulfill established requirements for full performance and are safe for consumer use.

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Dynamic Power Path Management (DPPM)

The **bqTINY™-III (bq24030)** DPPM powers the system while independently charging the battery. It also reduces the charging current for excessive loads.



Single-Chip Charger and DC/DC Converter

The **bq25010** combines a battery charger with a low-power, efficient synchronous DC/DC converter. The chip supports space-limited, Li-Ion powered portable applications such as *Bluetooth®* headsets and MP3 players.



Impedance Track™

The **bq20z80** battery fuel gauge features Impedance Track, which calculates the remaining run-time to within 1% error for the entire life of the battery. Impedance Track enables longer run times by allowing the system to use all the capacity of the battery without experiencing an unexpected low voltage condition and subsequent system shutdown.



System Peripheral Authentication

Authentication techniques in the **bq26150** enable the validation of batteries and peripherals, assuring they meet OEM requirements. An encryption transform and a secure device ID are used to generate a unique response to a random challenge from the host system to the peripheral. The host system compares the response to the expected result, enabling authentication.