

**Programmable Switch-mode, Li+ Battery Charger with TurboCharge™ Mode, USB “On-the-Go” Power, USB Power Source Detection and Automatic Input Current Limiting**
**FEATURES & APPLICATIONS**

- Automatic input current limit \*
- Optional automatic power source detection per latest USB charging specification 1.0
- USB or AC input with programmable input current limiting
- Up to 1.15A continuous charging current from AC adapter
- Up to 750mA charging current from 500mA USB port using automatic TurboCharge™ mode \*
- +4.35 to +6.2V input range (+20V input protected)
- USB “On-the-Go” Power support for USB OTG enabled devices (+5V reverse output @ 500mA)
- 50mA SYSON output for “dead battery” boot-up
- Analog output voltage for direct charge current measurement
- Reverse current blocking
- High-efficiency 3MHz current-mode step-down regulator
- Integrated frequency compensation and power MOSFETs
- High-accuracy float voltage regulation: 1%
- Pre-charge and complete-charge safety timers
- Battery pack thermal monitor
- Digital programming of all major parameters via I<sup>2</sup>C interface (One-time programmable for default, non-volatile settings)
  - Fast charge voltage threshold, float voltage
  - Pre-charge, fast charge, termination current
- Status register monitors and flags charger operation
  - Charge in-progress/termination
  - Charge timer fault
  - Over-current limiting
  - UV/OV detection/shutdown
- 1.95mm x 2.22mm CSP-20 package (0.4mm pitch lead-free)

**Applications**

- 2.5G/3G/GSM/CDMA Phones
- Smartphones/PDAs
- Portable Media Players
- Portable GPS Terminals
- Handheld Game Consoles

\* Patents pending

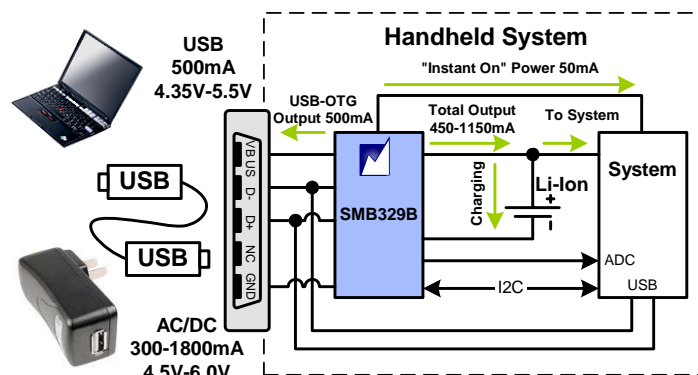
**SYSTEM APPLICATION**


Figure 1 – Using the SMB329B to charge a single cell Li+ battery from USB or AC Adapter power sources.