

Fuel gauge implementation based on the STM32F103x

Data brief

Features

- Single-cell Li-Ion battery fuel gauge technology
- Dual selectable power input source:
 - USB connection or external DC power source 5 V
- Battery fuel capacity monitoring by on-chip 12-bit ADC
- Based on the Micro STM32 (ARM Cortex™-M3 core) family
- RoHS compliant

Description

Fuel gauge technology is a smart system which monitors battery capacity, predicting the remaining capacity and displaying its status. The basic unit of measurement used for battery capacity is Coulomb counting, in which the current flowing through the battery is continuously monitored and integrated to calculate the capacity.

Current measurement is done when the battery is both discharging and charging. Therefore, both the IN and OUT current are used to calculate the remaining capacity of the battery.

Battery capacity is measured in mAh.



1 Schematics

Figure 1. Microcontroller section

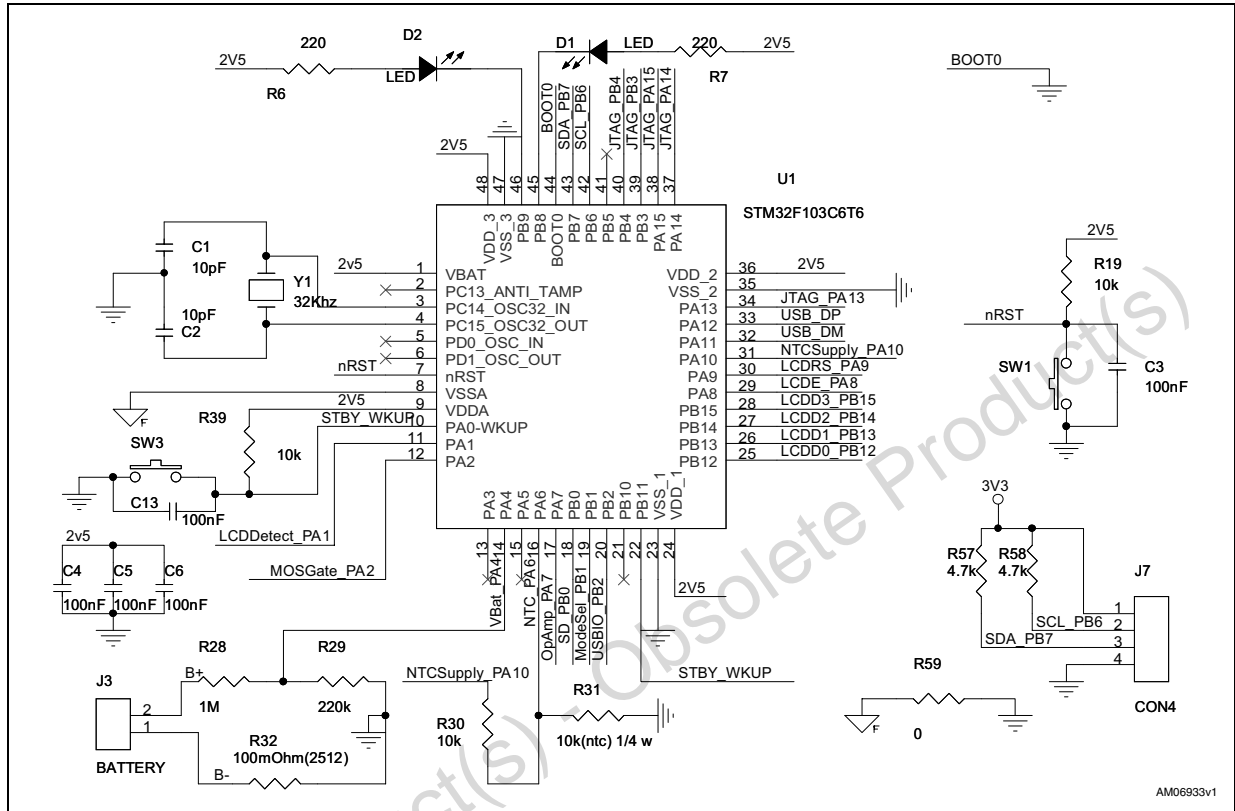
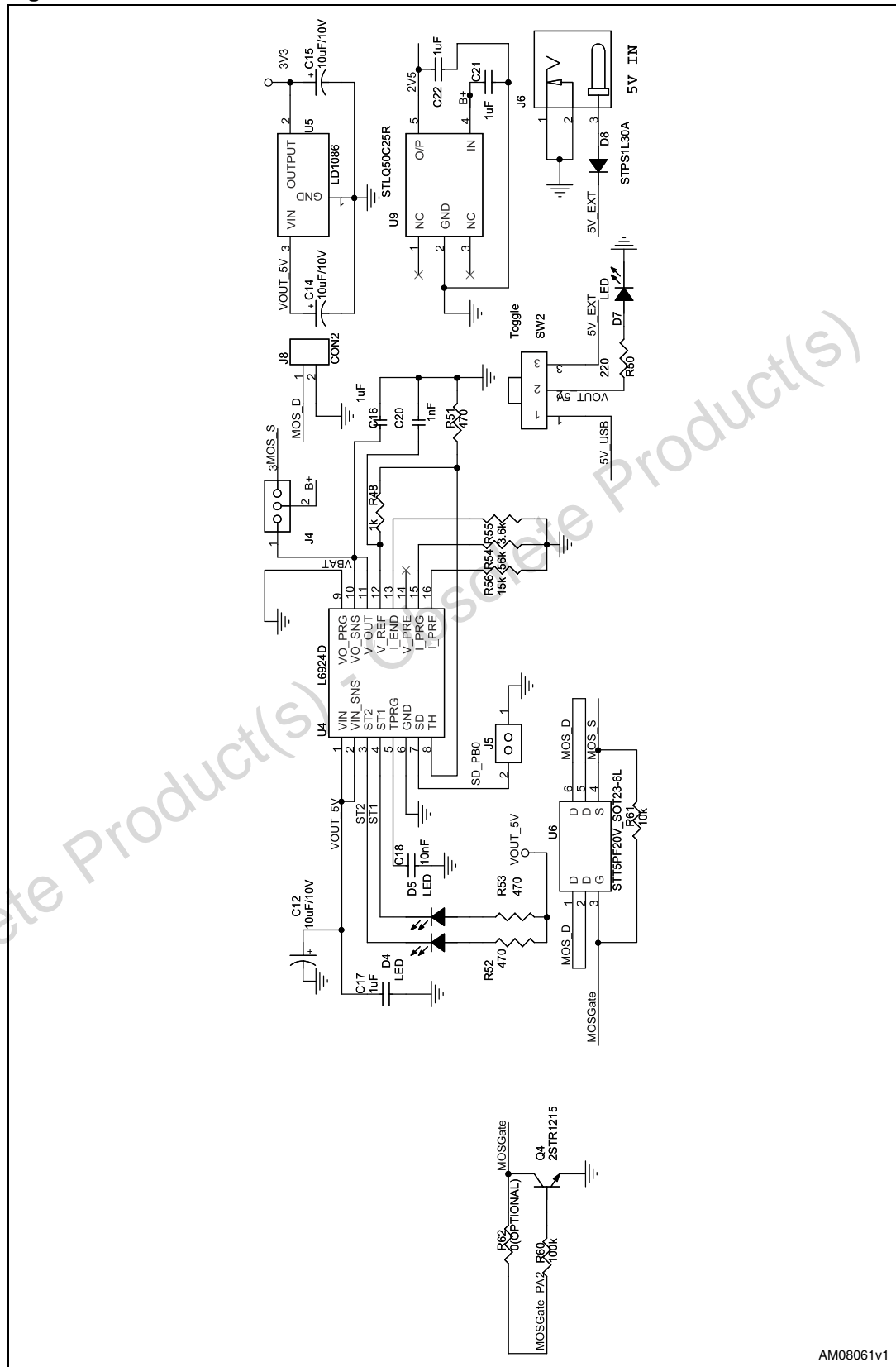


Figure 2. Power section



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Figure 3. Operational amplifier section

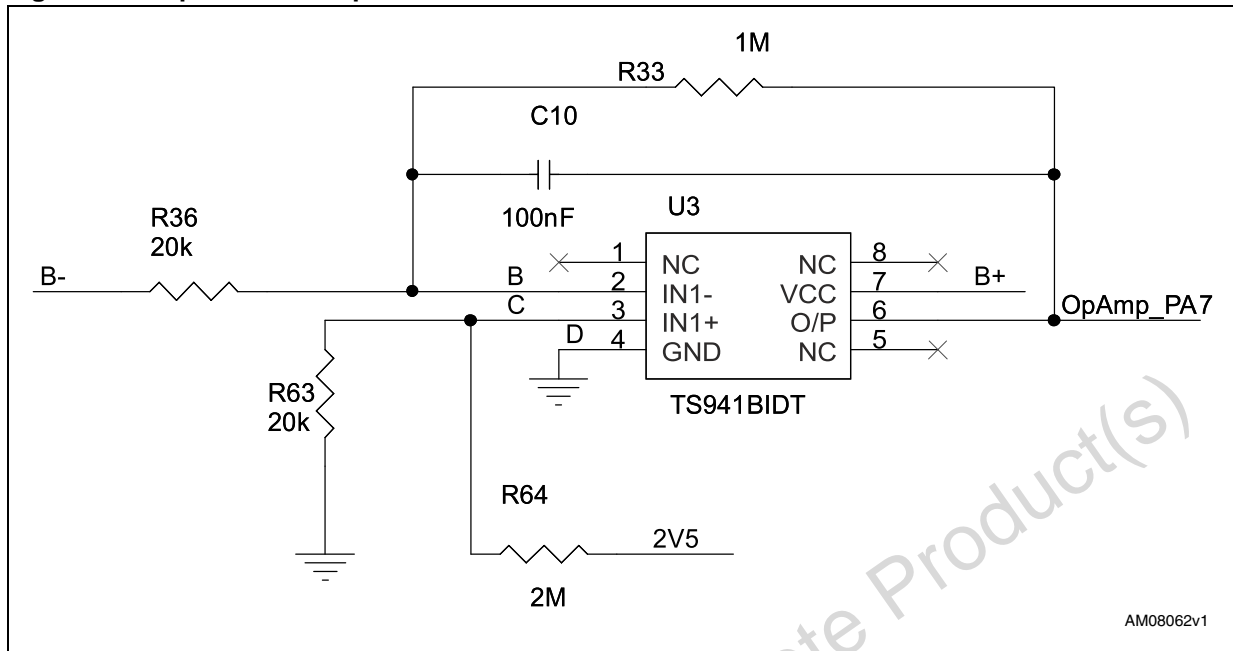


Figure 4. USB section

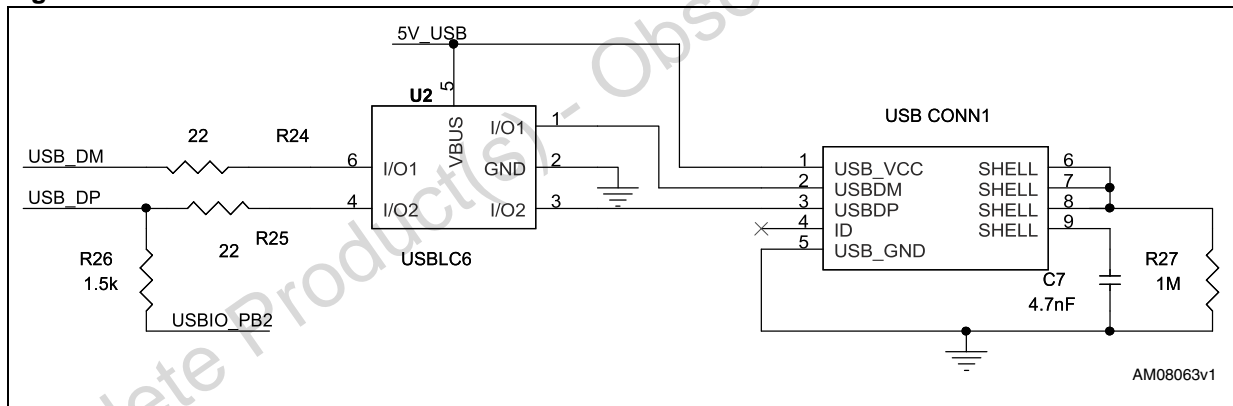


Figure 5. LCD section

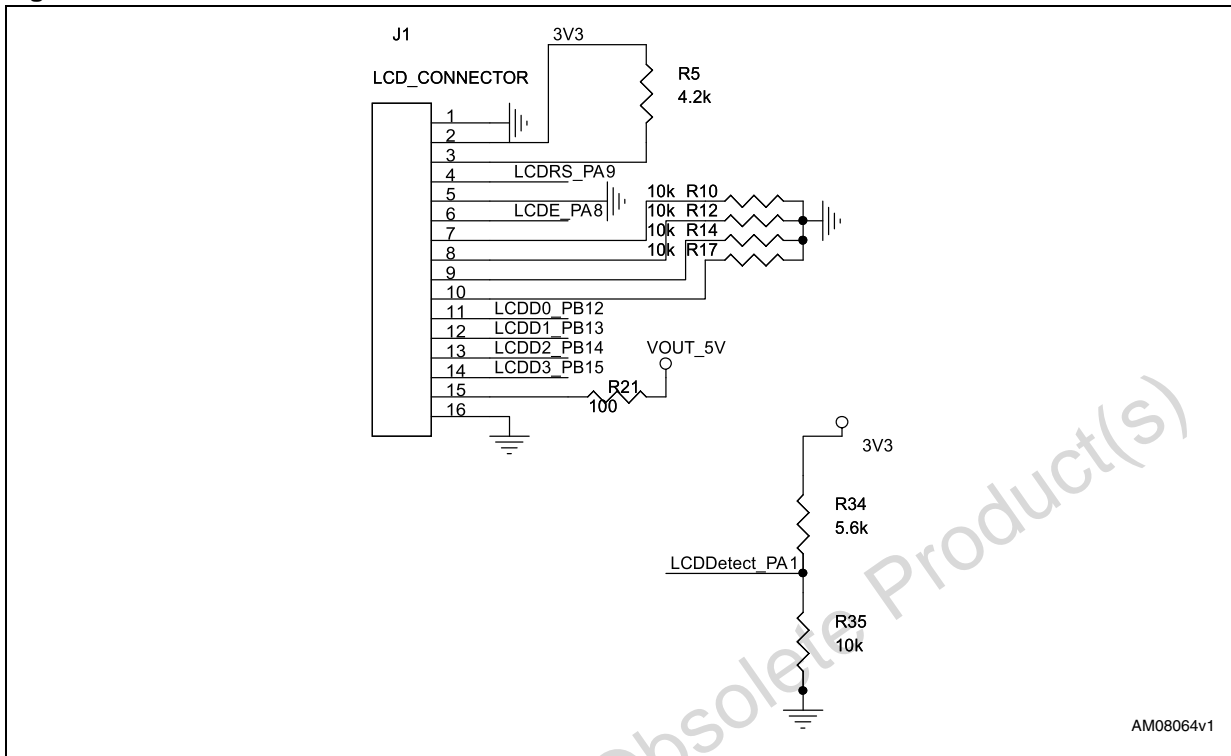
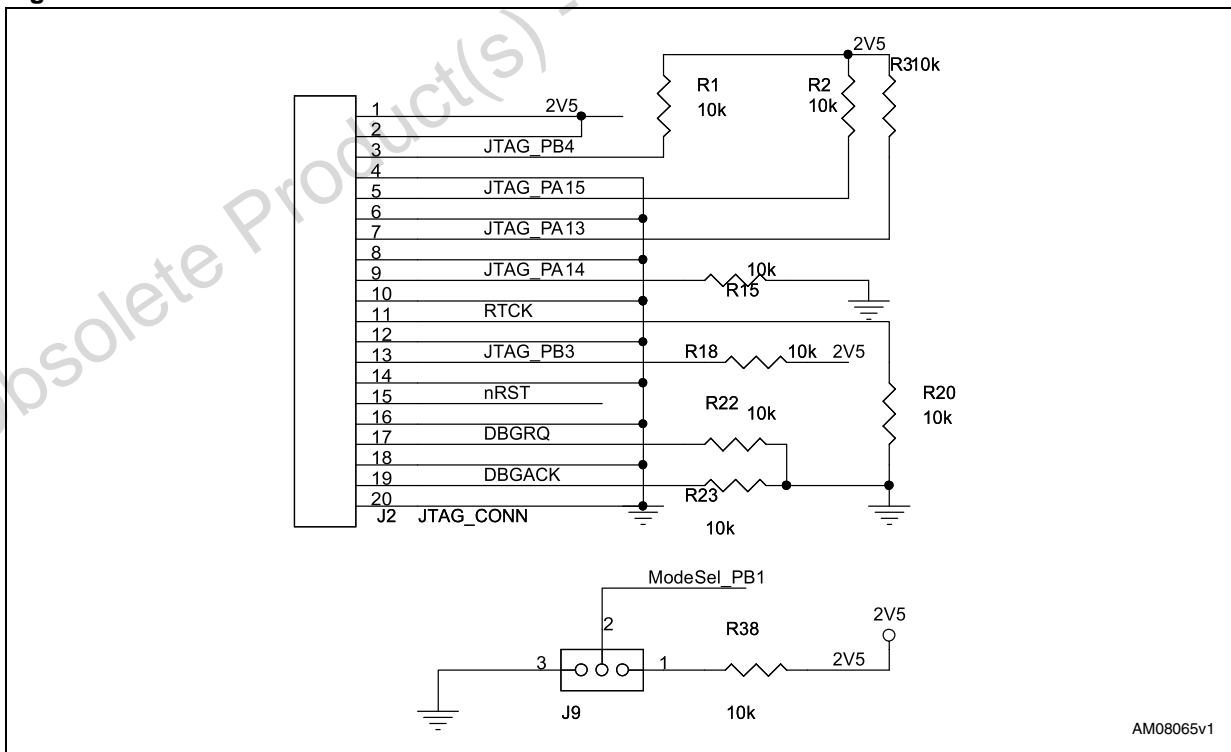


Figure 6. JTAG-Connectors section



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
10-Jan-2011	1	Initial release.

Obsolete Product(s) - Obsolete Product(s)

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