



STEVAL-ISB006V1

Dual USB/wall adapter Li-Ion battery charger with gas gauge demonstration board based on the STw4102

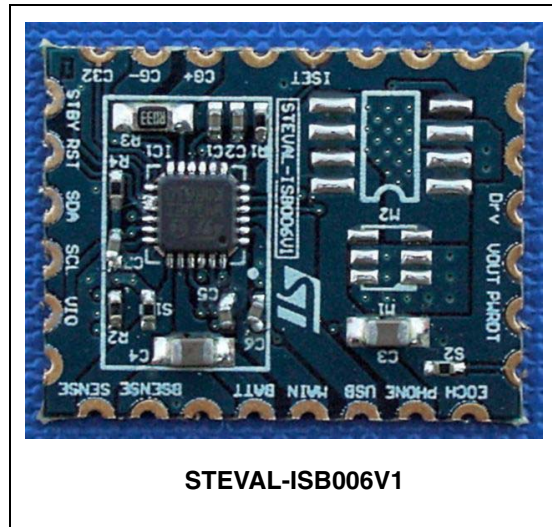
Data Brief

Features

- Constant current constant voltage (CCCV) charger
- Dual charging source (main adaptor or USB cable)
- Fast charge current control up to 1A for main adaptor and up to 500 mA for USB
- Internal power device and sense resistor, option for external components for current higher than 1A
- Programmable charge voltage (4.1 V, 4.2 V, 4.3 V, 4.35 V) with 1% accuracy
- Thermal regulation
- Trickle charge mode at low battery voltage
- Main adaptor voltage up to 16 V
- Battery overvoltage protection at 4.7 V
- Gas gauge with 13 bit AD converter
- Battery voltage monitor with 7-12 bit ADC
- I²C interface for device monitoring and control
- Charge status output pin
- Power detection output pin
- Programmable watchdog security timer
- 4.7 V LDO regulator (external MOSFET)

Description

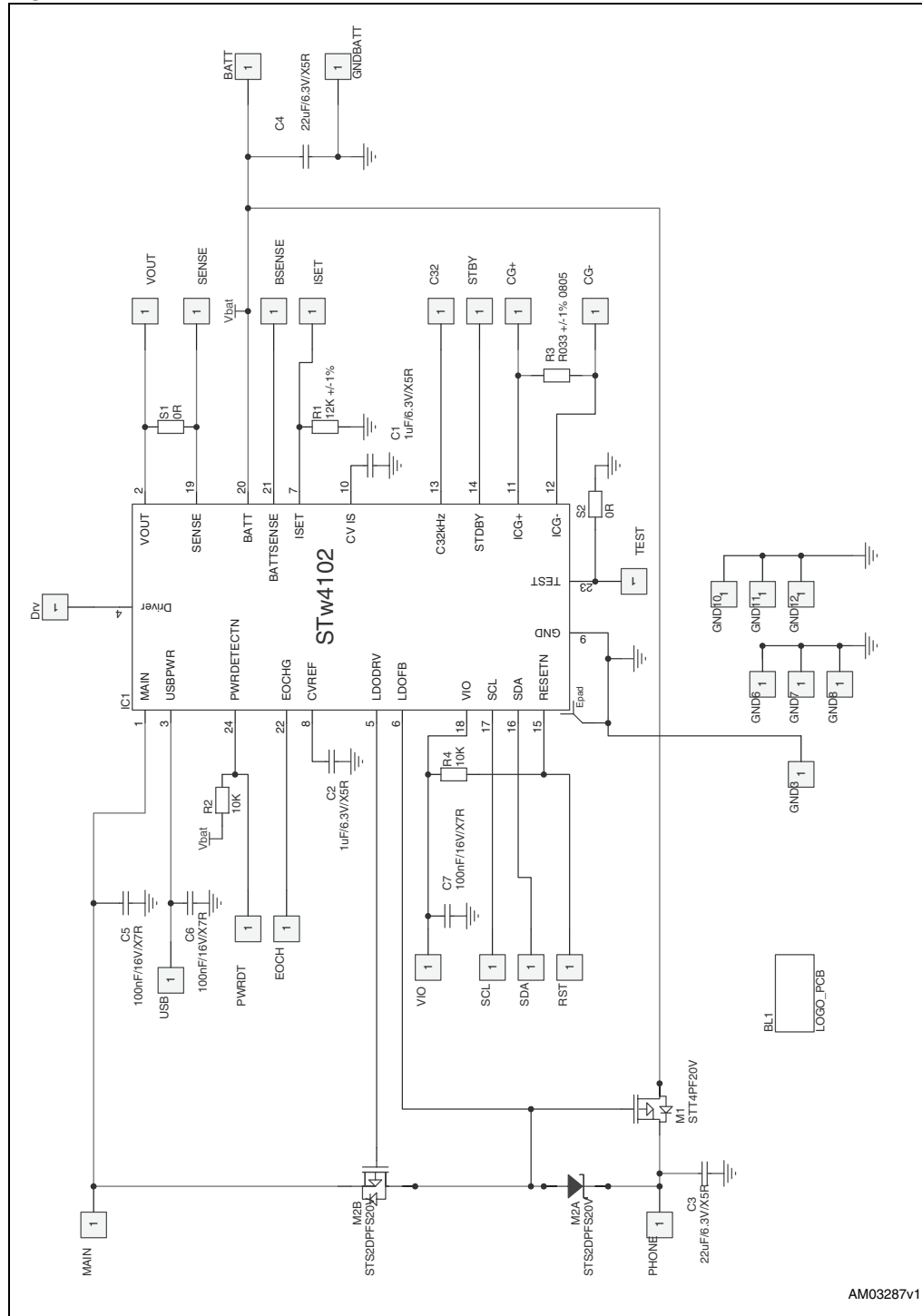
The STEVAL-ISB006V1 demonstration board is based on the STw4102, a stand-alone constant-current constant-voltage (CCCV) linear charger dedicated for Li-Ion battery. This device allows dual charging capability using the main input adaptor up to 1A (wall adaptor, car adaptor) or USB cable up to 500 mA without external component. Upper 1 A charging is possible by adding just one external transistor. This demonstration board offers programmable fast charge current up to 1A with external resistor. A thermal regulation circuitry limits the charge



current against the die high power dissipation or high ambient temperature. An end of charge output pin indicates the charge termination when the fast charge current drops below 10% of the programmed current value. The STw4102 contains an accurate gas gauge based on a 13 bit AD converter. External resistor is used between battery and ground to sense a charge/discharge current. With a typical 30 mΩ resistor, current can be up to 2.5 A.

1 Circuit schematic

Figure 1. Schematic



AM03287v1

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
27-Nov-2008	1	Initial release.

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