



STEVAL-ISB003V1

Demonstration board on USB Li-Ion battery charger based on the microcontroller ST7260E2

Data brief

Features

- Can be powered from USB connector
- Available to work stand alone powered from external power supply (5 V, 1 A)
- Max. charging current 250 mA

Description

This demonstration board is an USB based single cell Li-Ion battery charger which consists of the ST7260E2-based low-speed USB controller and the ST7LIT15BY0-based battery charger.

This board includes a power selector circuit to select the appropriate power supply source and a step-up converter circuit based on the L6920 device to provide a fixed output voltage to the USB controller. The power supply for the battery charger controller is generated from TL1431 keeping in mind the accuracy requirement for charging. An additional current-limiter is also included in series with a USB power supply to show any incorrect behavior using a status LED.

A provision is provided on demonstration board such that any external low-speed USB controller can control the charger operation, hence this system can be used with any low-speed USB controller.

The charger used in this demonstration board utilizes a modified form of non-inverting buckboost converter to support the charging voltage requirement for single cell Li-Ion battery.

This converter is explained in more detail in AN2390.

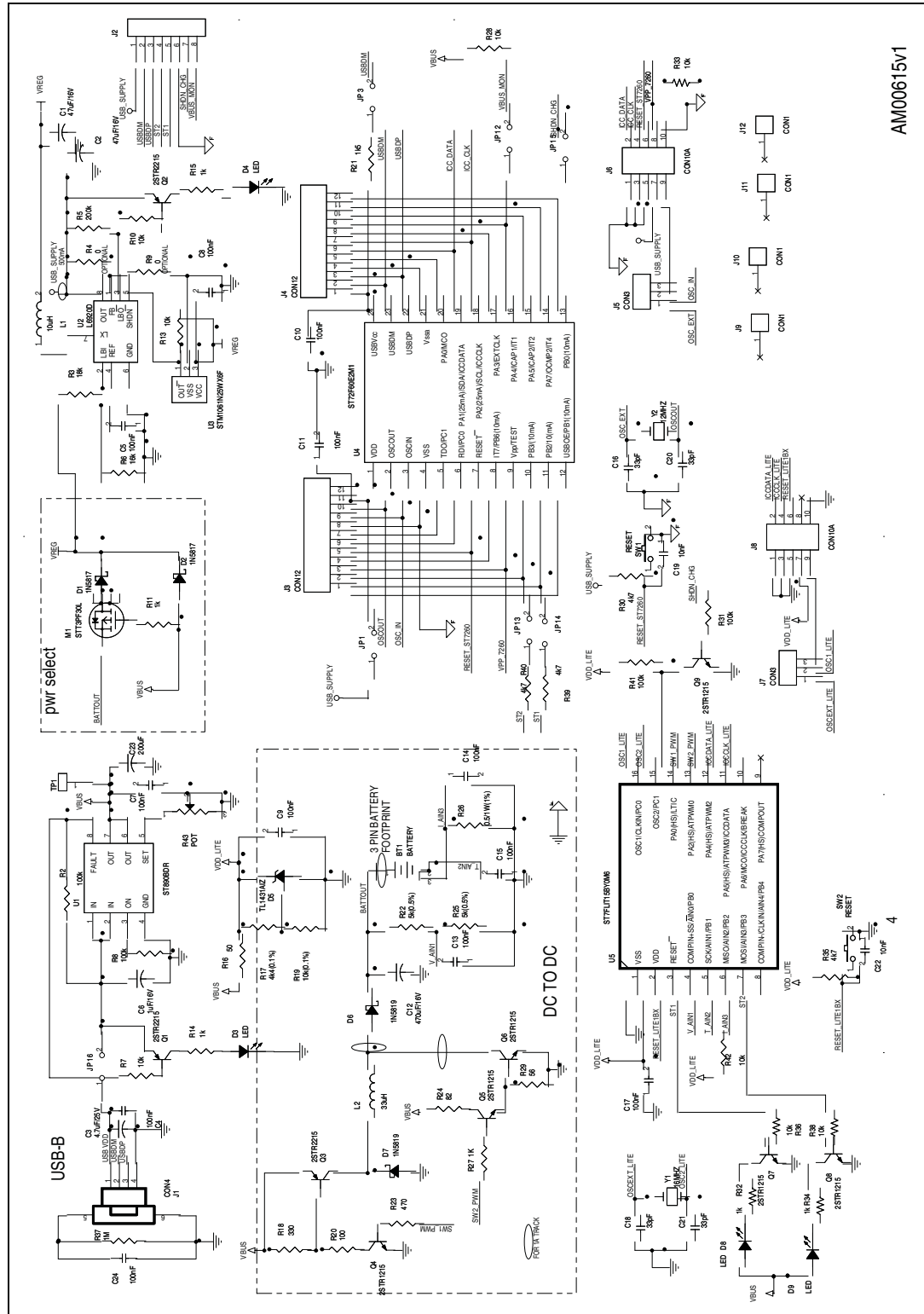
This demonstration board system is a complete USB-based portable system which uses a single cell Li-Ion in MP3 players for example.

There are separate ICP connectors provided on the evaluation board to reprogram the USB controller and charger controller.



1 Block diagram

Figure 1. USB battery charger



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
04-Jun-2008	1	Initial release.
20-May-2011	2	Updated cover page.

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