Application Report
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bq34z100-G1 Out-of-Box Quick Start Guide

Bryan Kahler *Battery Management Solutions*

ABSTRACT

This quick start guide details the out-of-box experience for the bq34z100 Evaluation Module (EVM); enabling communication with the bq34z100-G1 using the bqStudio and EV2400 toolchain.

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1 Introduction

This quick start guide is intended to allow a user to quickly communicate with the bq34z100-G1 device using bqStudio and the EV2400 toolchain. This guide assumes the firmware on the bq34z100-G1 is default from the factory. To learn more about the bq34z100 EVM and how to configure the bq34z100-G1 gauge on the bq34z100 EVM, please refer to the bq34z100 EVM User's Guide

2 Required Materials

- bq34z100 EVM
- EV2400
- Windows® 7 capable PC (or higher)
- Power Supply

3 Download and Installation

In an effort to make the out-of-box guide as self-contained as possible, all download and installation steps are described in detail herein.

3.1 Battery Management Studio (bqStudio) Software

bqStudio is a graphical user interface that allows the user to interact with the bq34z100-G1 device.

1. Download the latest version of bqStudio.
2. Run the installer by double clicking on it.
3. Read and accept the license agreement to proceed.
4. Choose the desired path to install the software (otherwise the default is chosen).
5. Proceed with the installation and click the Finish button when done.

3.2 EV2400 Communications Interface

The EV2400 is a communications interface adapter that enables a PC (with required driver for the platform) to communicate with the bq34z100-G1. Communication flows from the PC to the EV2400 via USB and from the EV2400 to the bq34z100-G1 via I^2C (default) or HDQ.

To install the driver for the EV2400:

1. Connect the EV2400 to the PC via a USB cable. The driver will install automatically, as shown in Fig.1.
2. Open bqStudio, select 'Gauge' and press the 'Next' button. A new window will appear listing the target devices supported by bqStudio.
3. Select '0100_0_16-bq34z100G1.bqz' and press the 'Finish' button. A prompt will appear stating that the detected device is not compatible with the application because no target boards are currently connected and powered.
4. Press the 'OK' button and the bqStudio graphical interface will load.

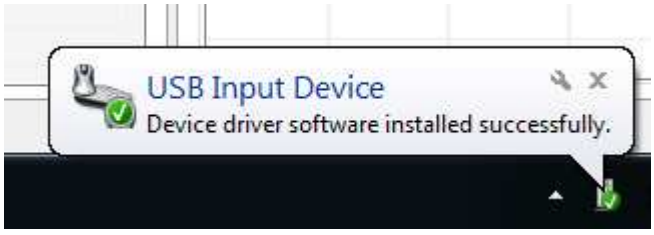

Figure 1. Driver Installation Success Message

The EV2400 icon and version number will be displayed in the 'Dashboard' on the left hand side of the application, as shown in Fig. 2.

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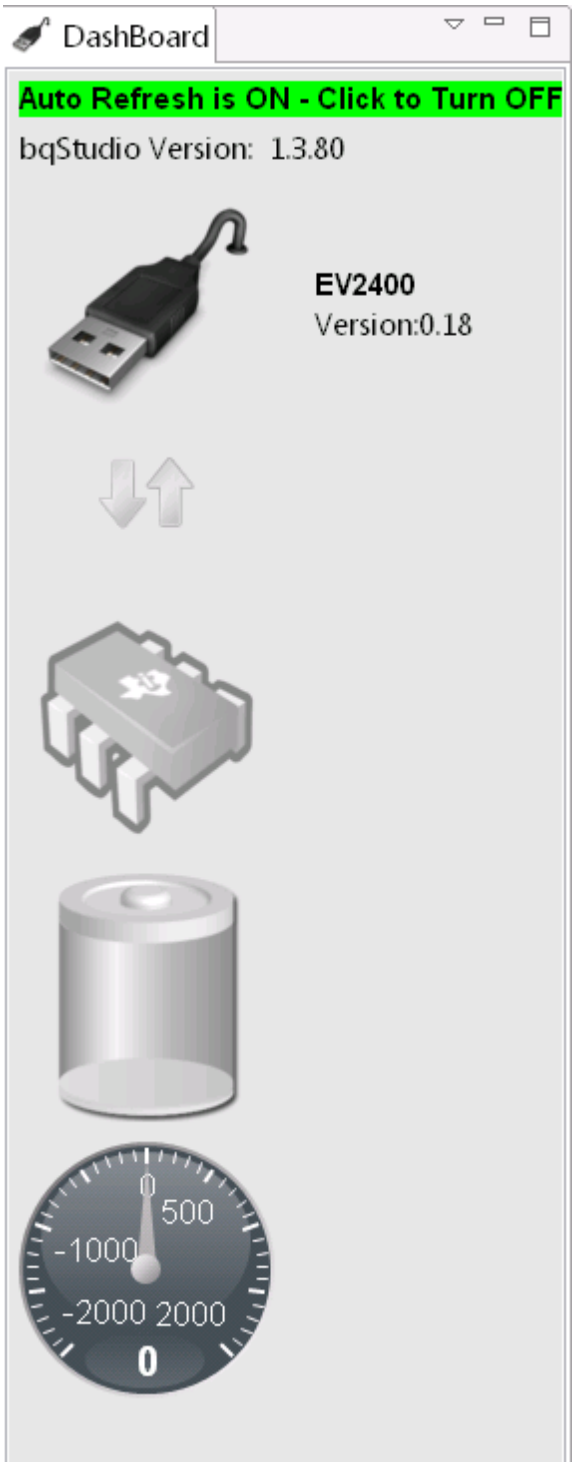

Figure 2. EV2400 Connected as shown in Dashboard

3.3 EV2400 Firmware Updater Installation

To Install the firmware updater for the EV2400:

1. Download the latest version of the EV2400 Firmware Updater

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2. Extract the installer from the zip file.
3. Run the installer by double clicking on it.
4. Read and accept the license agreement to proceed.
5. Choose the desired path to install the software (otherwise the default is chosen).
6. Proceed with the installation and click the Finish button when done.

3.4 Updating the EV2400 Firmware

To Update the firmware for the EV2400:

1. Make sure all versions of bqStudio are closed and that the EV2400 is connected via USB to the PC
2. Run the updater by double clicking on it.
3. Type 'Y' in the prompt and press the 'ENTER' key, as shown in Fig. 3.
4. Press the 'enter' key again to close.

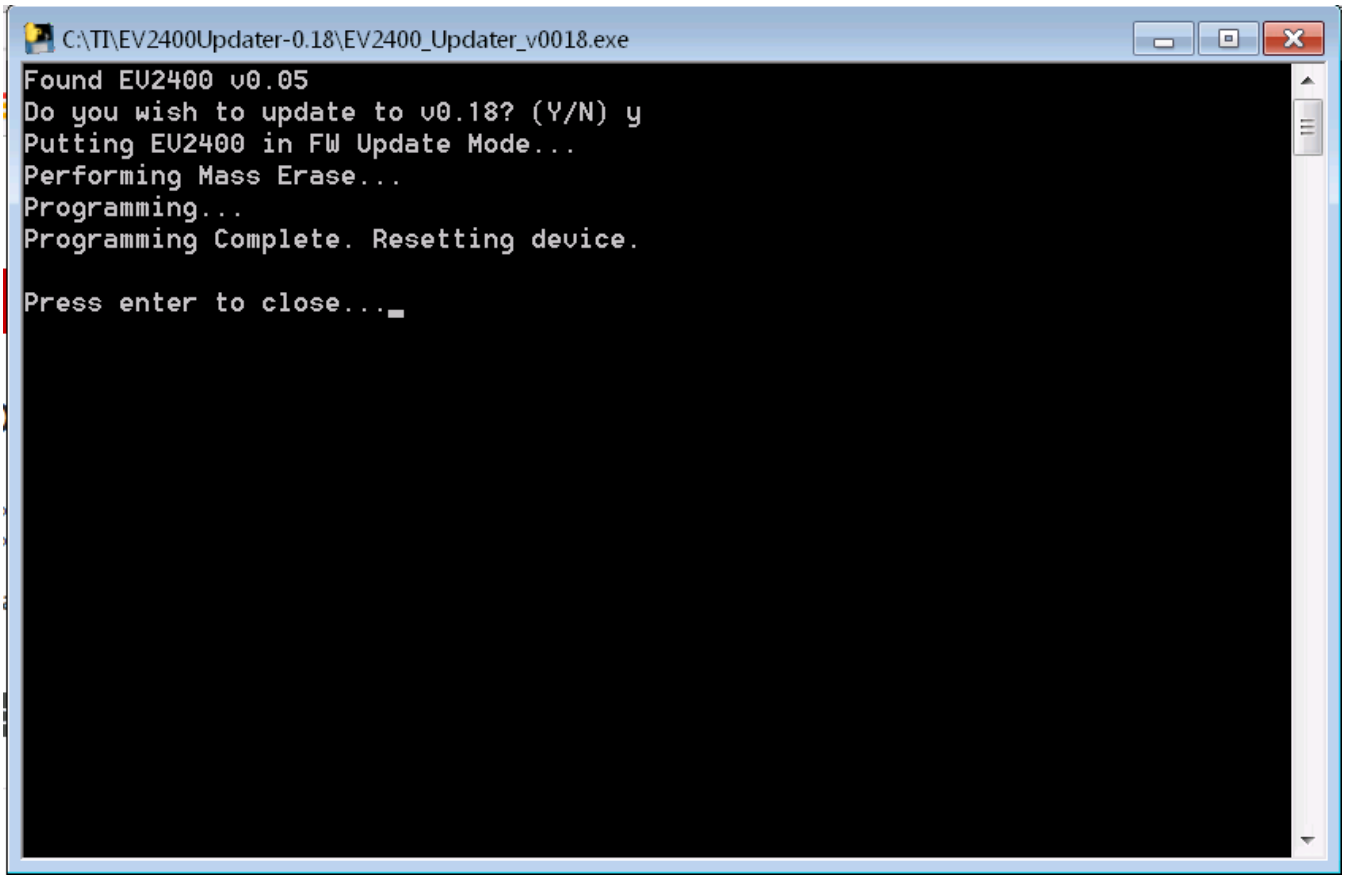

Figure 3. EV2400 Firmware Updater Success Message

4 EVM Configuration

Perform the following steps in order to configure the bq34z100 EVM to facilitate communication between bqStudio on the PC and the bq34z100-G1 on the bq34z100 EVM via the EV2400.

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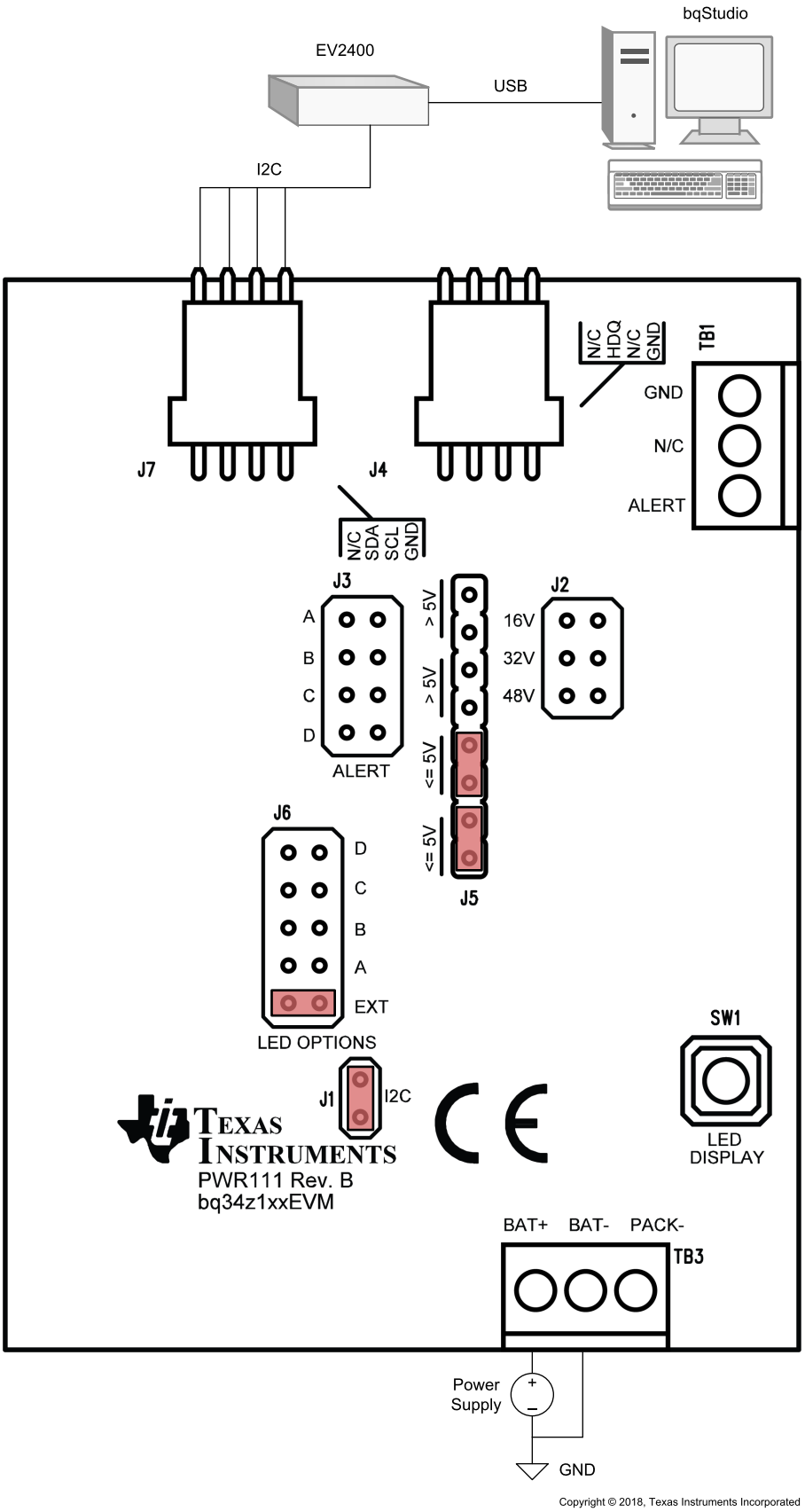

Figure 4. EVM Configuration Block Diagram

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4.1 Jumper Configuration

Connect the jumpers as described in the following steps and as shown in Fig. 4. Individual 2 pin jumpers are indicated by red rectangles in Fig. 4 covering their respective pins.

1. Orient the EVM so the silkscreen is readable, as shown in Fig. 4.
2. On J5 place two 2 pin jumpers vertically to short the lower two pairs of pins marked by <= 5V, respectively. These jumpers disconnect the external voltage divider on the board.
3. On J1 place one 2 pin jumper vertically to short the pins marked by I2C. This jumper enables I2C communications on the board.
4. On J6 place one 2 pin jumper horizontally to short the pins marked by EXT. This jumper enables the external shift registers to power and control the 14 LEDs on the left and bottom left edges of the board.

4.2 External Connections

With the Power Supply set to 0 V, connect the external components, as described in the following steps and as shown in Fig. 4.

1. Connect one end of the keyed 4 wire I2C cable included with the bq34z100 EVM to J7 on the bq34z100 EVM.
2. Connect the other end of the keyed 4 wire I2C cable included with the bq34z100 EVM to PORT 2 on the EV2400.
3. Connect a Power Supply set to 0 V between the BAT+ and BAT- terminals of TB3 on the bq34z100 EVM.
4. Connect one end of the USB cable to the PC and the other end of the USB cable to the EV2400.

5 EVM Bring-Up

With the device configured and connected as described in Section 4, and as shown in Fig. 4, perform the following steps to bring-up the bq34z100 EVM, thereby enabling communication between bqStudio on the PC and the bq34z100-G1 on the bq34z100 EVM.

1. Increase the voltage on the Power Supply from 0 V to 4 V.
2. Launch bqStudio. bqStudio should auto detect the bq34z100-G1 gauge and display data from the bq34z100-G1 gauge.

6 Next Steps

To learn more about the bq34z100 EVM and how to configure the bq34z100-G1 gauge on the bq34z100 EVM, please refer to the bq34z100 EVM User's Guide.

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