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Application Report
SLUA648–July 2012

Programming Software For bq77910 and bq77908 (1)

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ABSTRACT

This paper describes how to use a software to download and program the configure data into bq77910 on the mass production line. The related software is bq77910-bq77908 Programmer, which works with a hardware tool kit provided by TI. The software supports single channel programming for bq77910 and bq77908.

(1) bq77910 refers to bq77910 and bq77910A, bq77908 refers to bq77908 and bq77908A.

Project collateral discussed in this application report can be downloaded from the following URL: www.ti.com/lit/zip/SLUA648.

2 Introduction

Bq77910 and bq77908 are complete stand-alone battery protection and cell balancing devices for Li-ion or Polymer or Phosphate Battery packs. One of the features is its flexibility for different cell types, the protection threshold is programmable, there is no need to place different order for different protection thresholds, and this application note and the related software provides an easy way to program the data into its EEPROM for mass production, this software supports single channel programming for bq77910 and bq77908

3 System Requirements

a. Computer: PC or Compatible
b. Operating System: Windows™ XP
c. Minimum video resolution is 640 x 480
d. At least one USB port on the PC
e. A USB-TO-GPIO interface board for communication between target bq77910 or bq77908 and PC
f. Test software bq77910-bq77908 Programmer installation package

4 Software Installation:

The bq77910-bq77908 programmer software requires a 32 bit version of Windows™ XP. The computer must also have Microsoft .Net Framework 4.0 or higher version installed. To communicate with the target device, a USB interface adapter is needed. It is TI USB-TO-GPIO interface adaptor. Detail information can be referred via the link of http://www.ti.com/tool/usb-to-gpio. Note that the USB-TO-GPIO tool kit needs to be initialized before to be used with this software. For information on initialization of this tool kit, the reader can refer to the description in the section 4.2.1 in sluu368

After the USB-TO-GPIO is initialized, and the .Net Framework 4.0 has been installed, the bq77910-bq77908 Programmer software can be installed. To install the program, download the zipped software from TI website and then unzip the files to a folder, click the setup.exe, if the option window shown in Figure 1 pops up, it indicates an older version is installed the PC, and the user can choose the option of 'Remove' and click next. Note: the user must run setup.exe again after the process ended.

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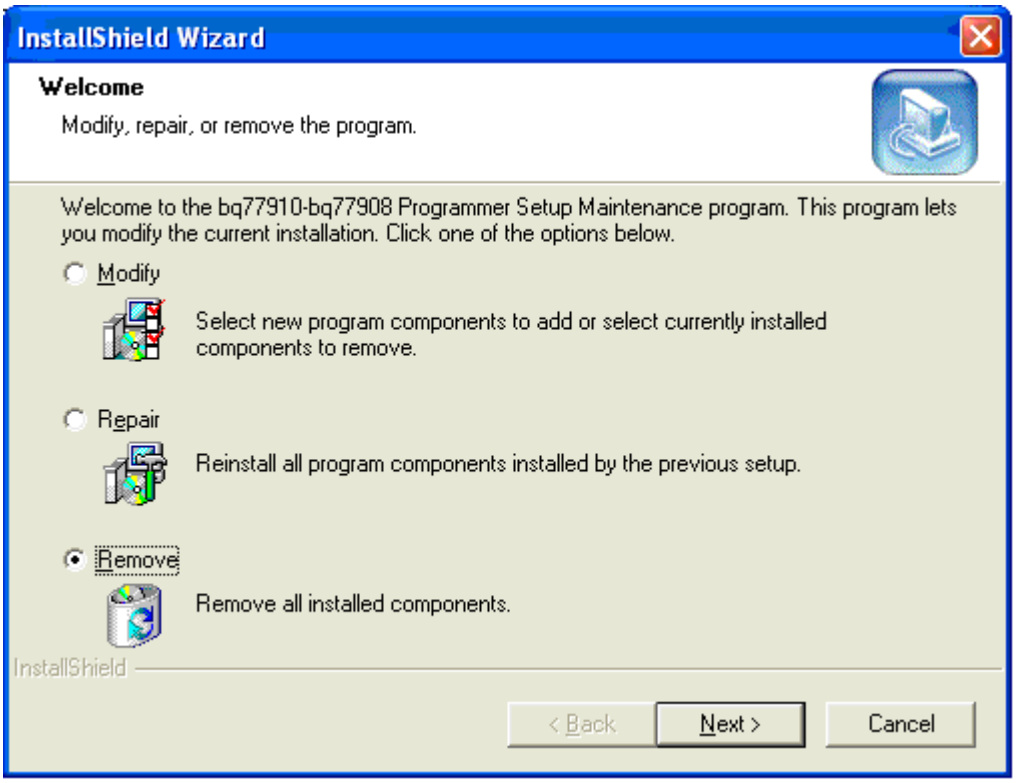

Figure 1.

If any older version is not installed, the user will see the window in Figure 2.

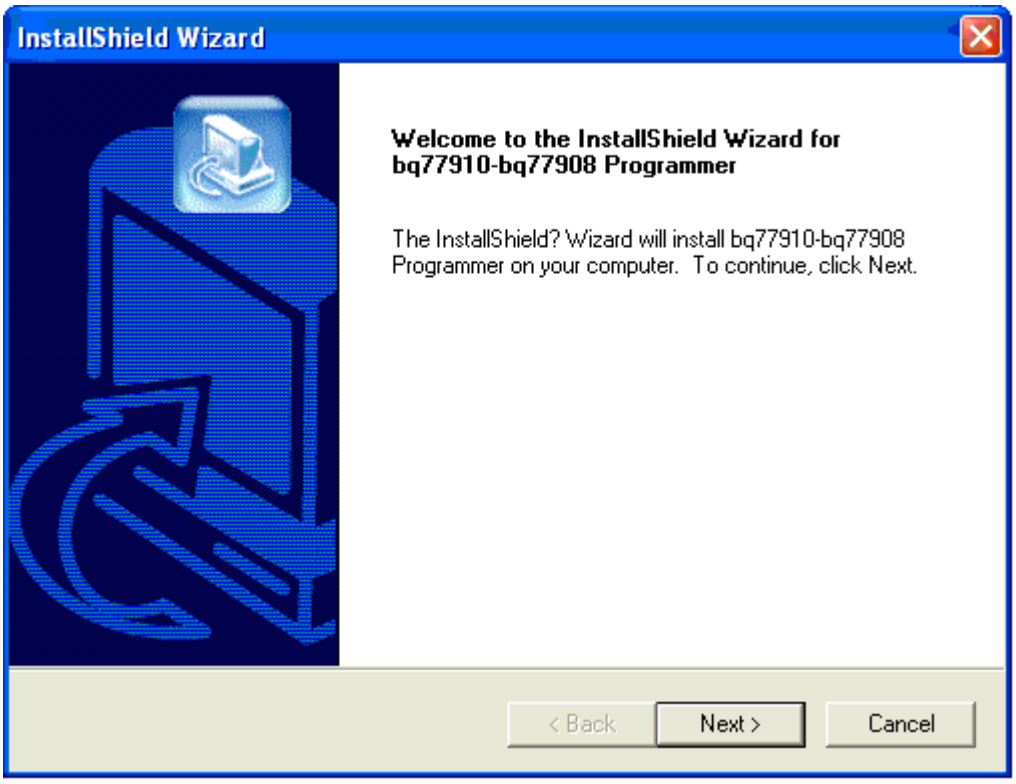

Figure 2.

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Click ‘Next’ all the way to the last window which incorporates a finish button as shown in Figure 3:

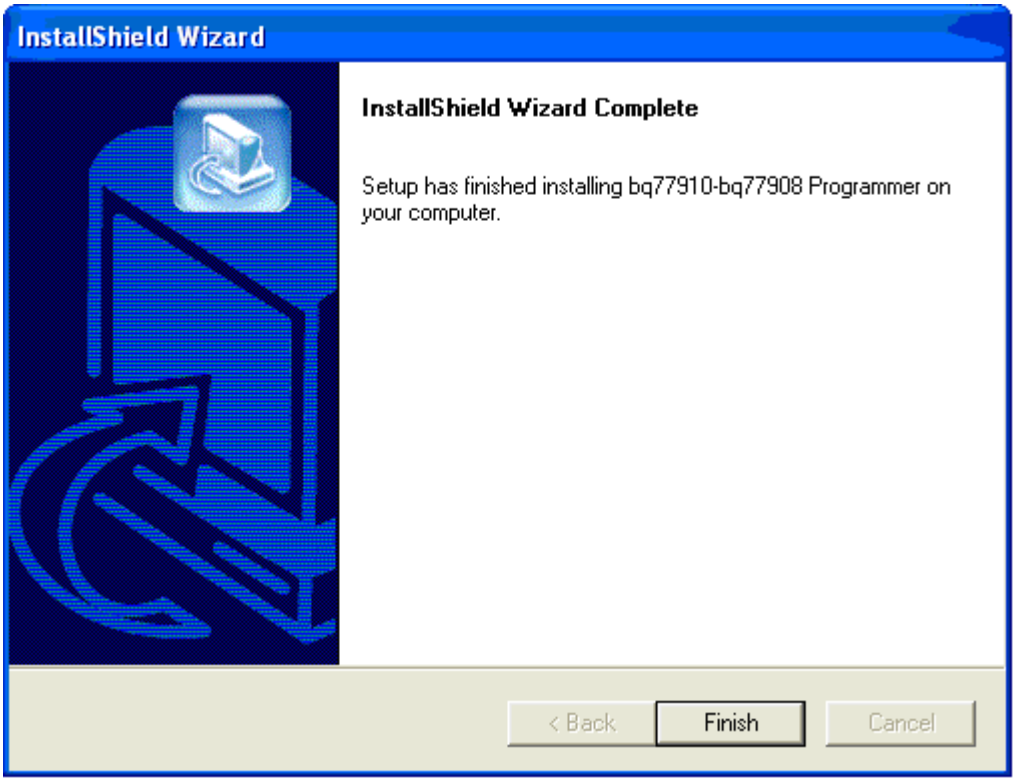

Figure 3.

After you click Finish, a shortcut icon like is shown on the desktop. Another shortcut can be found by click Start->All Programs->Texas Instruments->bq77910-bq77908 Programmer.

5 Run the Software

Before running software, some hardware connections must be made to assure the necessary signal can be applied to the specific pins of bq77910 or bq77908 from the USB-TO-GPIO tool kit, for details on which signal should connected, refer to schematic of bq77910EVM in document sluu368. The related signals are labeled as ECLK, EDATA, ZD and PGM in the schematic

With hardware circuits and connections available, user can run the bq77910 Prog software by clicking either of the shortcuts enumerated at the end of section 3, the window in Figure 4 appears.

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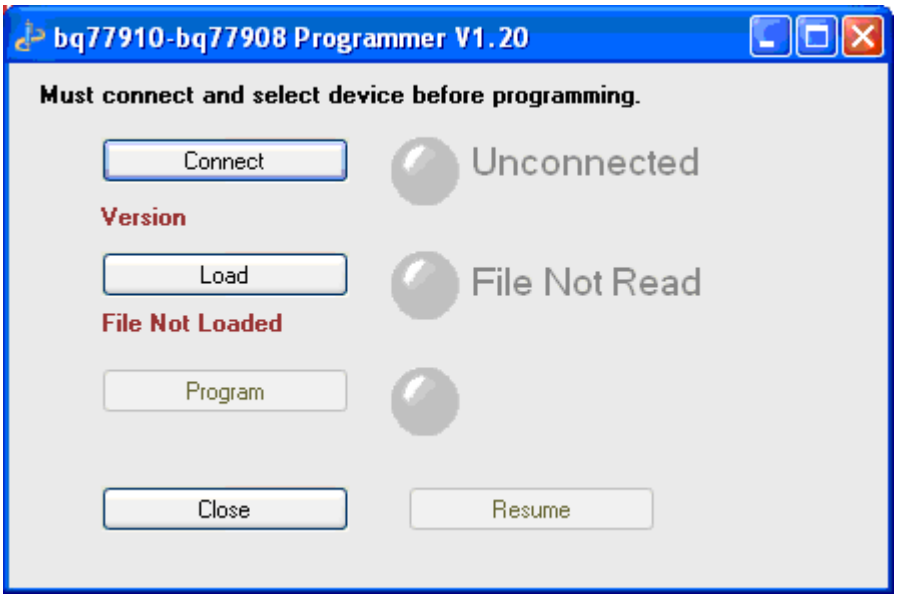

Figure 4.

The 'Connect' button should be clicked first. The window in Figure 5 for device select shows up first

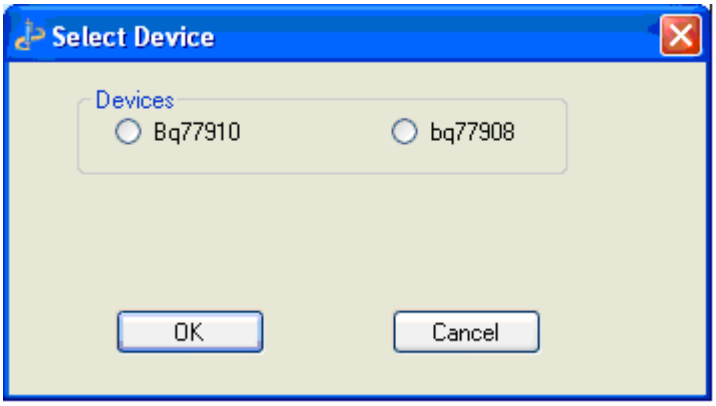

Figure 5.

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After the device is selected, the program will find the USB-TO-GPIO hardware and get this tool kit connected to the software, if done successfully, the window in Figure 6 appears.

Figure 6.

After the interface is connected, a configuration file needs to loaded, click the 'Load' button, a file load window pops up, select the desired file, the main window is seen in Figure 7.

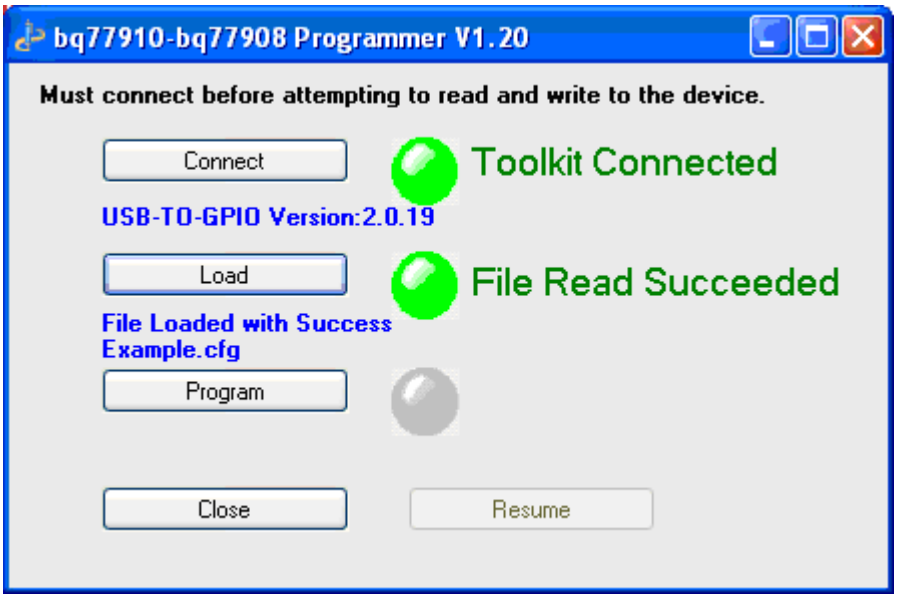

Figure 7.

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After both above things are done successfully, it is ready to download the data in the .cfg file into the target device, by clicking the 'Program' button, if the device is programmed successfully, the user sees a dialog window as shown in Figure 8.

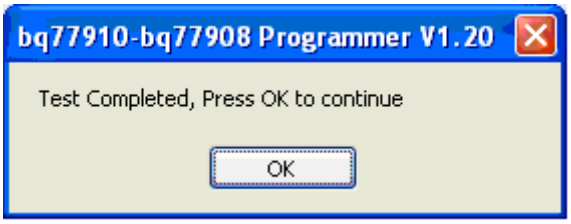

Figure 8.

After click OK, successful message shows on the main window as shown in Figure 9.

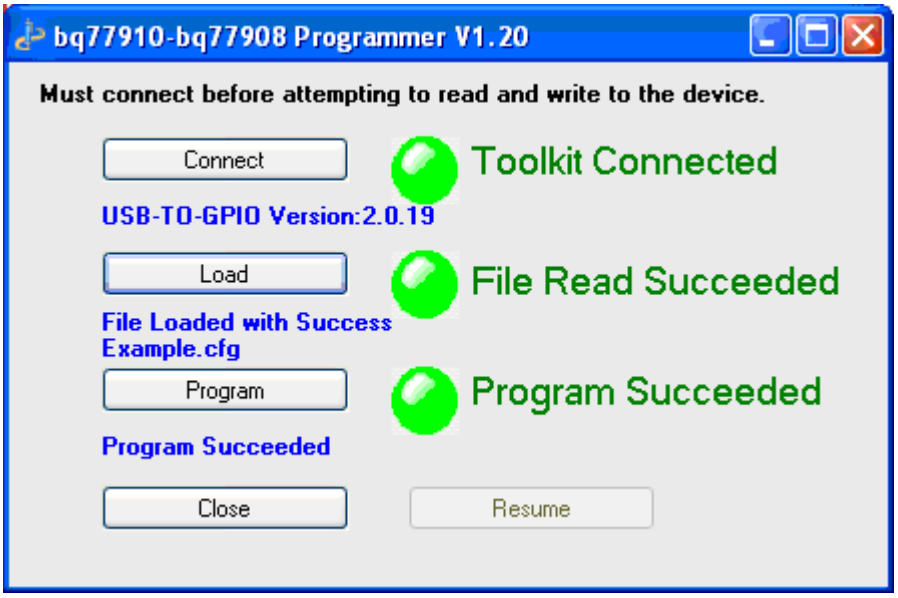

Figure 9.

By clicking Program button and OK button in the popped up dialog window alternatively, bq77910 or bq77908 can be hence programmed piece by piece. If failure occurs, the 'Resume' Button will be enlightened. After the trouble is eliminated, this button can be clicked to enable the Program button.

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