# BL600 Firmware Upgrade

*Application Note*                                                    *September 2013 (version 2.2)*

This document is a step-by-step guide on how to download and upgrade firmware within Laird's BL600 BLE module using a J-Link Lite Debugger.

## Hardware Requirements

To perform a firmware upgrade, you need the following hardware:

- BL600 Dev Kit and an appropriate USB cable



**Figure 1: BL600 development board**

- SEGGER J-Link LITE debugger (see Figure 2)
- Windows PC

**Note:** This procedure was tested for Windows XP SP3 and Windows 7 SP1.

- 10-way ribbon cable (which is included with the SEGGER J-Link LITE debugger)

## Initial Setup

Before initiating a firmware upgrade, you must connect the BLE development kit (devkit) to your PC and install the FTDI USB to Serial driver. The driver for the FTDI USB to Serial chipset on the devkit can be found at http://www.ftdichip.com/FTDrivers.htm.

To verify that your hardware and software are properly configured, ensure that the Windows Device Manager displays a virtual COM port and that the BL600 is able to send AT commands and receive responses. If you send an AT command at 9600,N,8,1 communications setting and it responds with "00", then it is working properly.

## Downloading and Installing the J-Link Driver

This procedure has been successfully tested on Win XP SP3 and Win 7 SP1. If the J-Link driver is already installed on your PC, you may proceed to the Firmware Upgrade Procedure section.

To download and install the J-Link driver, follow these steps:

1. Download the Windows drivers for the J-Link from http://www.segger.com/jlink-software.html?step=1&file=JLink_476a
2. Run the executable to install the J-Link software; the serial port driver option is not required. You may need to enter the J-Link serial number to download the driver package from the Segger website. The serial number can be found on the J-Link as shown in Figure 2:
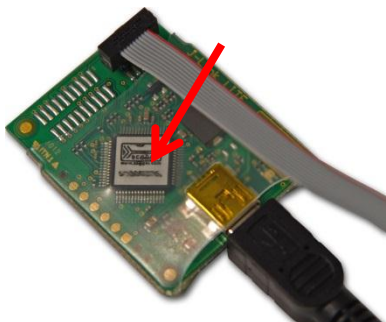


*Figure 2: J-Link Serial Number*

3. Plug the J-Link into a USB port of your PC. Installation proceeds automatically. Wait for confirmation that the device is successfully installed.

## Firmware Upgrade Procedure

To complete the firmware upgrade procedure, follow these steps:

1. Unplug the J-Link and the BL600 devkit from the PC to ensure they are not powered.
2. Connect the J-Link to the BL600 devkit via the 10-way ribbon cable supplied with the J-Link.
3. Verify that the red wire on the ribbon cable is aligned as shown in Figure 3.
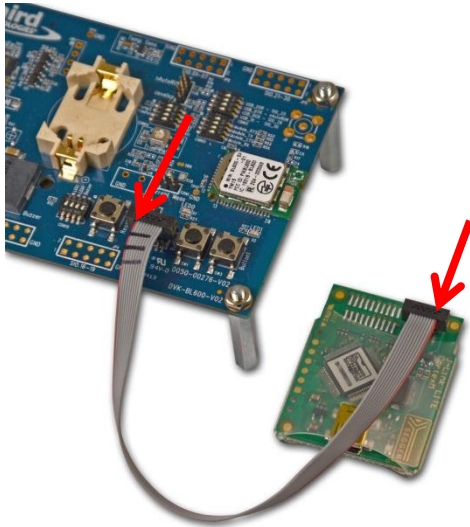
*Figure 3: Correct positioning of red wire on 10-way serial cable*

4. Position the three slide switches at the bottom left of the devkit motherboard as shown in Figure 4.
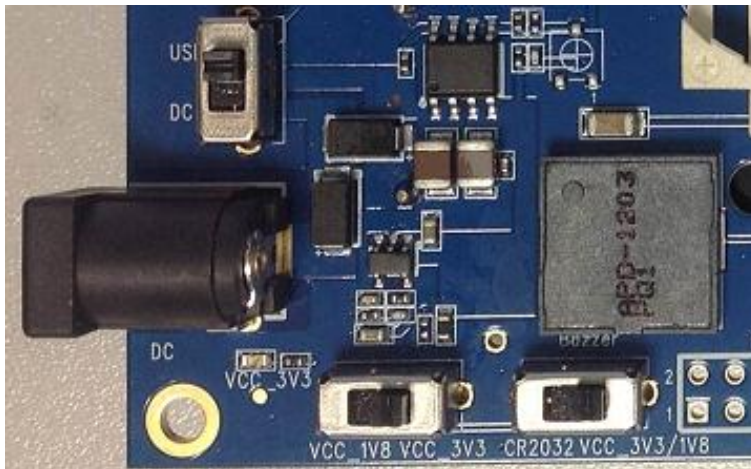


*Figure 4: Correct position of Dev Kit slide switches*

5. Connect the J-Link to a USB port on your PC or to a USB hub attached to your PC.
6. Connect the devkit to a USB port on your PC or to a USB hub attached to your PC.
7. The upgrade package is provided as a zip file, so decompress into a new folder of your choice. The filename will be of the form :-
   BL600_R2_Firmware_&_Samples_smartBASIC_Apps_vW_X_Y_Z-rN
   where W,X,Y,Z is the version number of the firmware and –rN is an optional suffix that will be present if the zip file has new content apart from the firmware image, like for example corrections in the user guide or other documentation.

**Note:** Do not decompress into an existing folder, as there is potential for confusion with regards to firmware upgrade files. We recommend you decompress the zip file into a folder with the same name as the zip filename.

8. In the decompressed folder, launch **_DownloadFirmware_vA_B_C_D.bat** (either double-click it or launch it from a command prompt console window).
9. If the J-Link firmware is outdated, the following dialog box displays (Figure 5):



*Figure 5: J-Link firmware update dialog*

10. Click **Yes** to update the J-Link firmware.

The BL600 firmware upgrade process resumes automatically and displays a command prompt box.

11. When the BL600 firmware download completes, the console window displays the following:

```
Programming, please wait it will take up to 20 seconds ....
.
..                    Acquiring info
...
....
.....                 Programming stack (please wait)
......                Programming stack (done)
.......
........               Programming application  (please wait)
.........              Programming application  (done)
..........
...........
............
.............
..............
...............
................      Resetting module
.................
###############################
The firmware upgrade is complete
###############################
```

12. Press any key to proceed.


To check that the new version number matches the firmware upgrade package version, follow these steps:

1. Open UwTerminal (or any other terminal emulator).
2. Select the COM port for the BL600 devkit at 9600N81.
3. Send the following command string:

```
AT  i   3.
```

**Note:** Please note there is at least one space between the 'i' and 3.

4. Use the response string to confirm the version numbers match.

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