# OTA Application Notes for iOS

## BT900/BL600/BL652

*Application Note* *v1.2*

## INTRODUCTION

You can program Laird BT900, BL652, or BL600 modules remotely using the Over the Air (OTA) application. This allows you to wirelessly program the Laird BT900, BL652, or BL600 modules with the new *smart*BASIC programming language. This application can only run when your module is in VSP command mode (bridge mode will not work).

## REQUIREMENTS

- PC running Windows XP or later
- UWTerminalX (found at https://github.com/LairdCP/UwTerminalX/releases)
- DVK-BT900 running firmware v9.1.2.0 or later, DVK-BL600, or DVK-BL652
- USB A to mini B cable
- iPad 3/ iPhone 4S or newer with BT4.0 support
- Internet connection on iOS device (to download the Laird Toolkit app)
- Product User Manual
- FTDI Drivers from http://www.ftdichip.com/Drivers/VCP.htm (for some versions of Windows)

## DEVELOPMENT KIT SETUP

- DC/USB power source switch (SW4) – USB
- 1.8V/3.3V switch (CON17) – 3.3V
- Autorun (CON12) – USB_DTR-nAutorun

To setup the BT900 development kit, follow these steps. To configure the BL600 or BL652 please refer to their respective DVK User Manuals:

1. Ensure that the module is in VSP mode. See Figure 1 and Figure 2.





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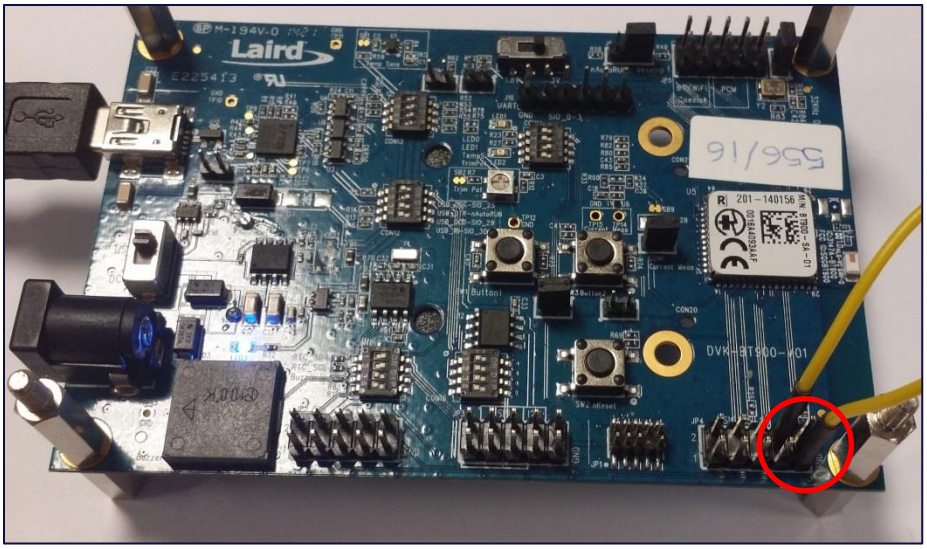

***Figure 1: BT900 in VSP mode and jumper attached (front). Pins that the cable is attached: Ground and SIO_19***

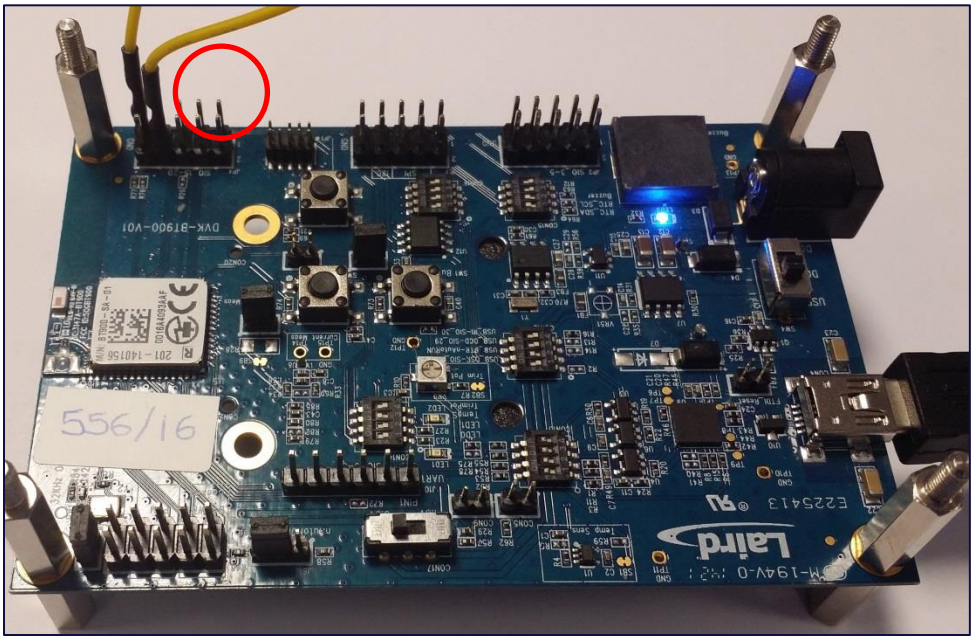

***Figure 2: BT900 in VSP mode and jumper attached (back)***

2. Connect one end of the mini USB cable to CON4 on the development board and the other end of the cable to your PC.
3. Follow the on-screen prompts. Depending on your version of Windows, you may need to install the FTDI drivers.
   When complete, the development board appears in the Windows device manager as a *USB Serial Port*. Make a note of the COM port number to use in step 5.
4. Extract UWTerminal to a selected folder and run the program (no installation is required).
5. Configure the COM port with the port number seen in device manager with the following settings:





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- Baudrate:
  - BT900: 115200
  - BL652: 115200
  - BL600: 9600
- Parity – None
- Stop Bits – 1
- Data Bits – 8
- Handshaking – CTS/RTS

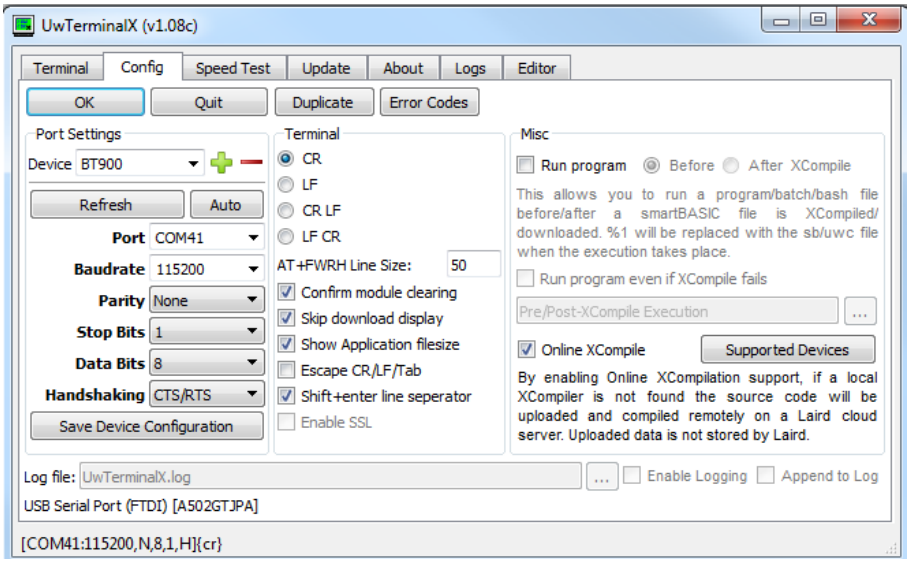



***Figure 3: Comms settings***

6. Confirm you can communicate with the development board by typing ***at*** followed by a <carriage return>. The module responds with *00*.

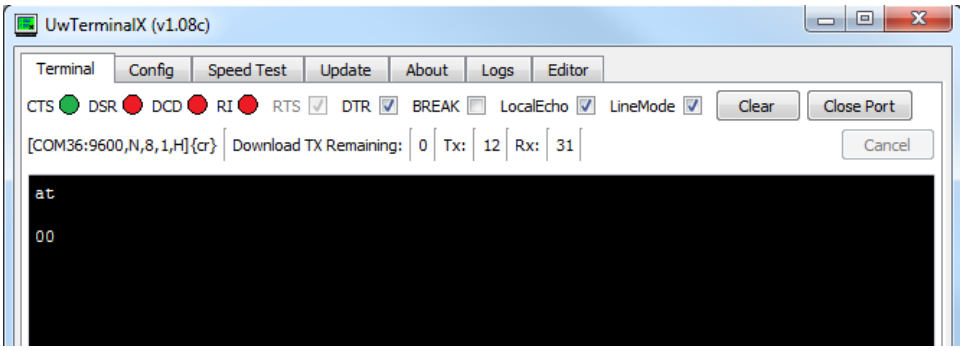
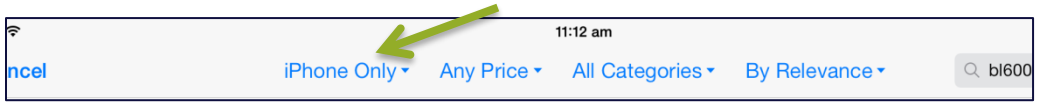



***Figure 4: Comms OK***

## iPad/iPhone Setup

For iPad/iPhone setup, install the Laird Toolkit app from the Apple App Store and ensure Bluetooth is enabled in the device settings. If using an iPad and after searching the Laird Toolkit app doesn't appear in the results, select **iPhone Only** from the dropdown menu.




"Laird Toolkit" by Laird Technologies - https://itunes.apple.com/us/app/laird-toolkit/id978146538?mt=8





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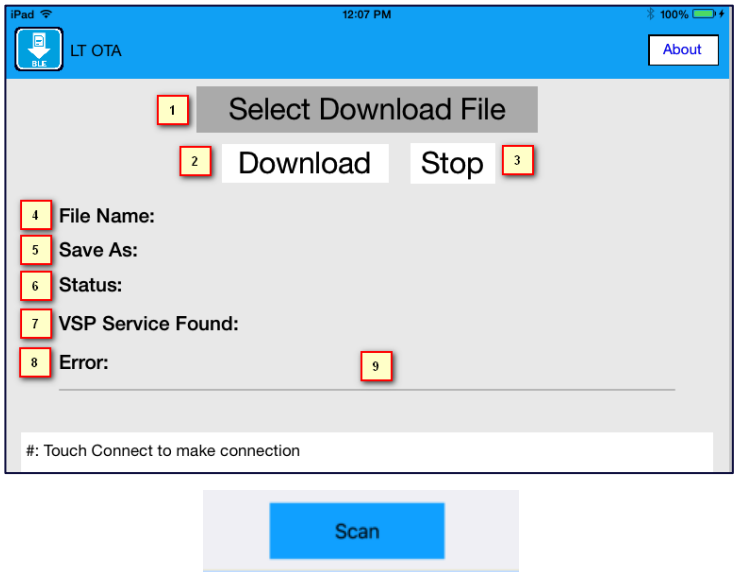
***Figure 5: Laird Toolkit app installed***

## USING THE LAIRD OTA APPLICATION

To use the Laird OTA application, tap the Laird OTA icon. The following figure (Figure 6) shows the functionality of the Laird OTA screen.




1. Select a ***.uwc** file to be downloaded.
2. Click **Download**. The Download button is enabled only if a file is selected and a device is connected.
3. The Stop button is enabled only if a file is being executed.
4. File Name refers to the selected file.
5. The name assigned to the file being saved.
6. Status indicates the running status of the batch process.
7. VSP Service Found displays any VSP service that is found.
8. Error shows an error number or error string if there is an error; otherwise it is blank.
9. A progress bar shows the batch commands progress.

***Figure 6: Laird OTA screen***

To connect to a device, click **Scan** When the desired device displays, tap the device.


***Figure 7: Tap the device***

When the device is connected, the Scan button changes to Disconnect.

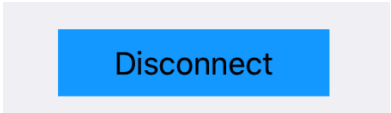



***Figure 8: Disconnect button***





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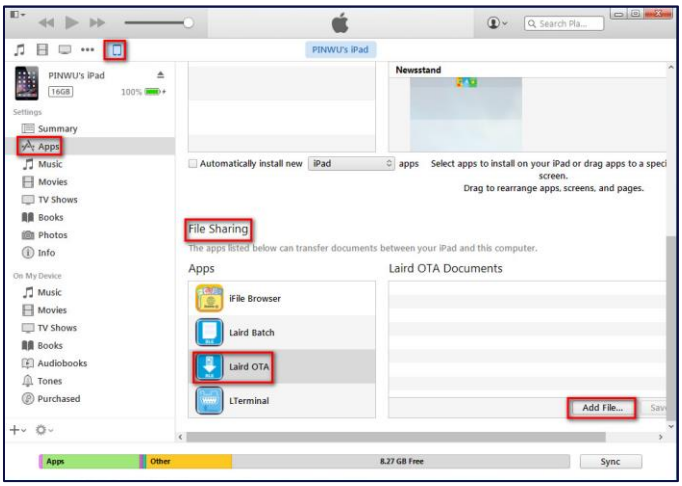
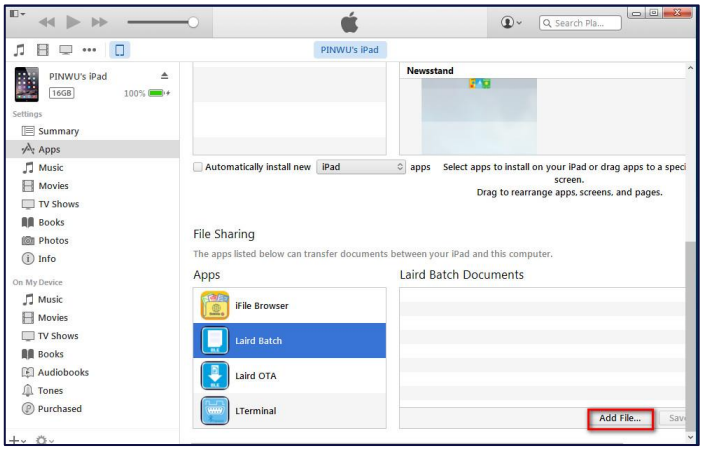
If the file that you want to run is not in the local files list, you can use iTunes on your PC to download to the device. **NOTE: The file to be sent MUST be precompiled before it can be sent over the air. It must be a .uwc file.**

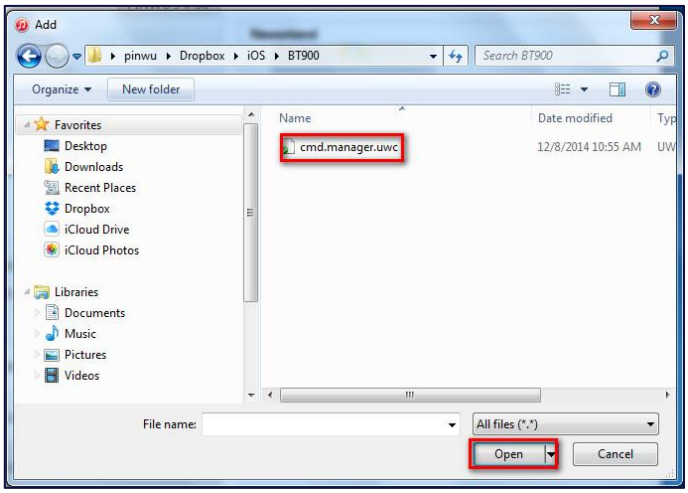
1. Connect your iOS device to a PC loaded with iTunes.
2. Select the device icon as shown in the red box.
3. Click **Apps**.
4. Scroll down to the File Sharing section.




5. Click the Laird OTA application, then click **Add file…**.




6. Select the file that you want to download and click **Open**.





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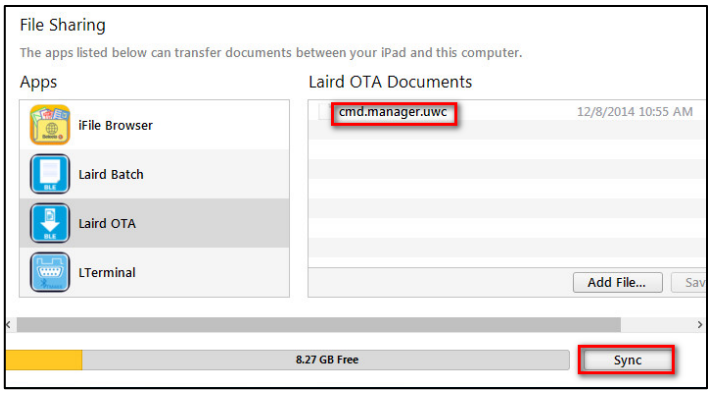
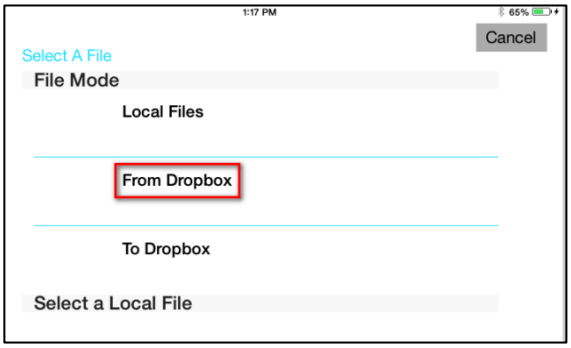
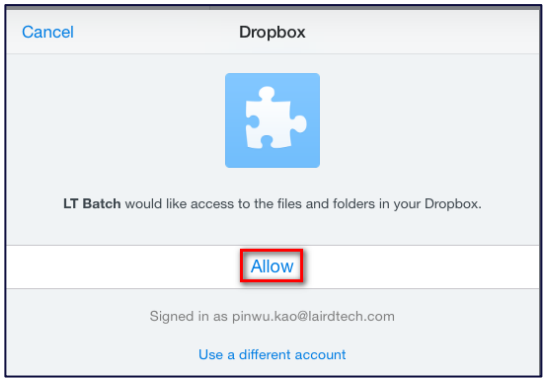
7. The file name is displayed
8. Click **Sync**.




9. If your file is in Dropbox, do the following:



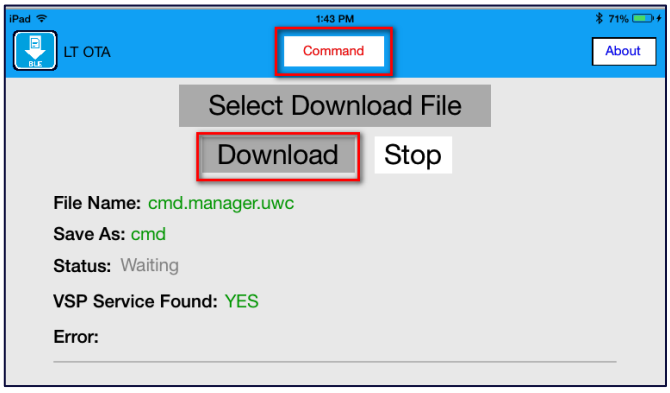

10. The first time you use the application, you will be asked for permission to allow the application to access your Dropbox account.



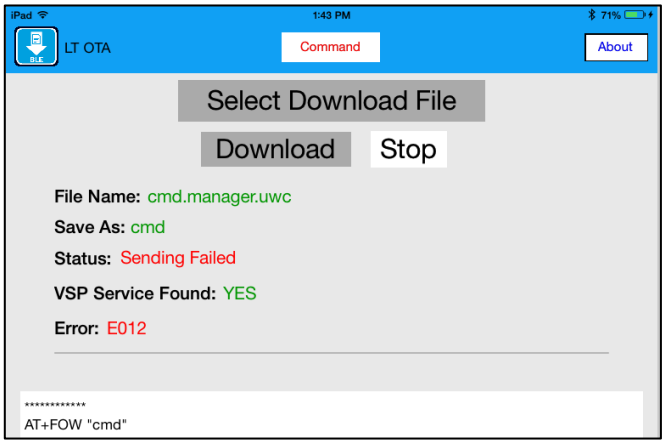

11. After you select a file and make a connection, the Download button is enabled.
12. The batch command process can be started by tapping **Download**.

    **Note:** The Command button (only supported in v.1.13.1.0 and newer) is also enabled when the file is selected.

13. The status displays Sending Finished when the process is complete.



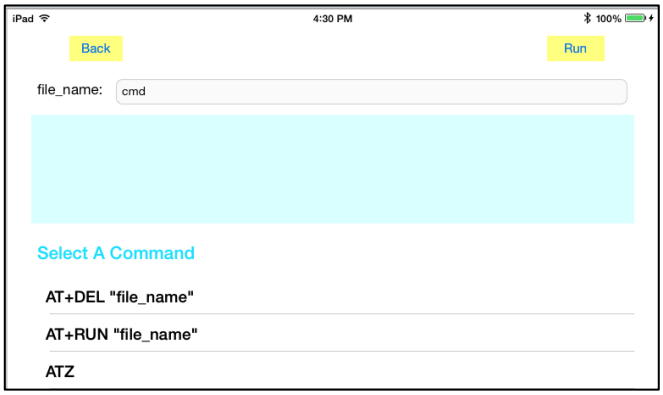
14. If any file is already located on the device, the status displays Sending Failed.




15. If this failure occurs, tap Command, select **AT+DEL"file_name"** and tap **Run** to delete the old file.

16. After running all of the commands, tap **Back** to return to the main view.

**Note:** If you tap **ATZ**, it returns to the main view automatically because the device is resetting. Typically this is run after a download.




## REVISION HISTORY

| Revision | Date | Description | Approved By |
|---|---|---|---|
| 1.0 | 03 Feb 2015 | Initial Release | Jonathan Kaye |
| 1.1 | 04 Mar 2015 | Added Revision History | Sue White |
| 1.2 | 03 Jan 2017 | Updated for UwTerminalX and new template. | Jonathan Kaye |





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