

# ANDROID APPLICATION: LAIRD TOOLKIT (OTA FUNCTIONALITY)

Application Note

v1.1

## INTRODUCTION

You can program Laird BT900 modules remotely using the Over the Air (OTA) application. This allows you to wirelessly program the Laird BT900 Bluetooth Low Energy (BLE) module with the new *smart*BASIC programming language. This application can only run when the BT900 module is on VSP command mode (bridge mode will not work).

## REQUIREMENTS

- PC running Windows XP or later
- UWTerminal 7.0 or later
- DVK-BT900 running firmware v9.1.2.0 or later
- USB A to mini B cable
- Android device running android 4.3 or higher with BT 4.0
- Internet connection on Android device (to download the Laird Toolkit application from the PlayStore)
- DVK\_BT900 User Guide
- FTDI Drivers <http://www.ftdichip.com/Drivers/VCP.htm> (for some versions of Windows)

## DEVELOPMENT KIT SETUP

To setup the BT900 development kit, follow these steps:

1. Configure the BT900 development kit to the following settings:
  - DC/USB power source switch (SW4) – USB
  - 1.8V/3.3V switch (CON17) – 3.3V

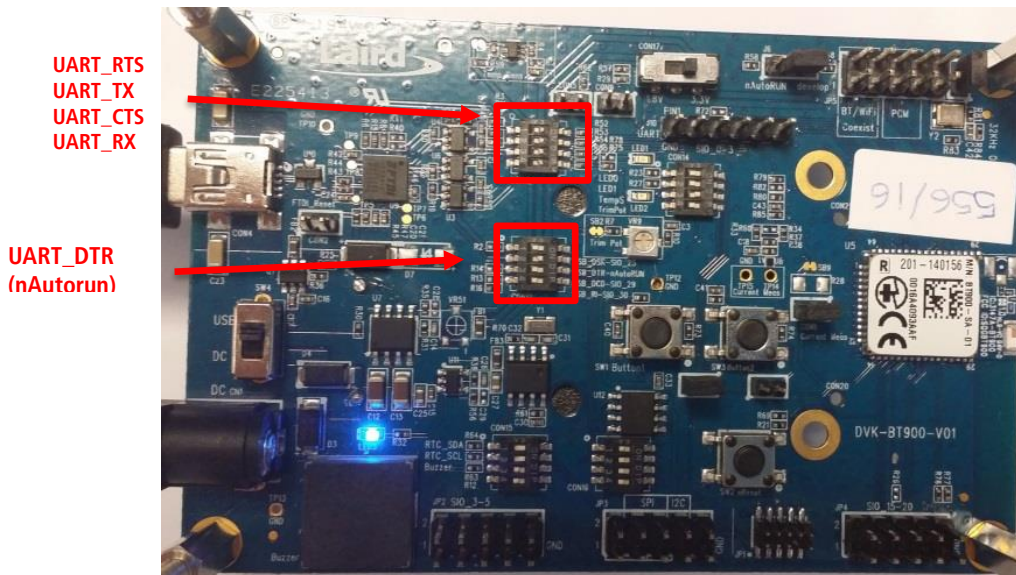


Figure 1: UART\_TX/RX/CTS/RTS/DTR (nAutorun) is switched ON; all others switched OFF

Ensure that the module is in VSP mode. See [Figure 2](#) and [Figure 3](#).



Figure 2: BT900 in VSP mode and jumper attached (front) Pins that the cable is attached: Ground and Pin 19

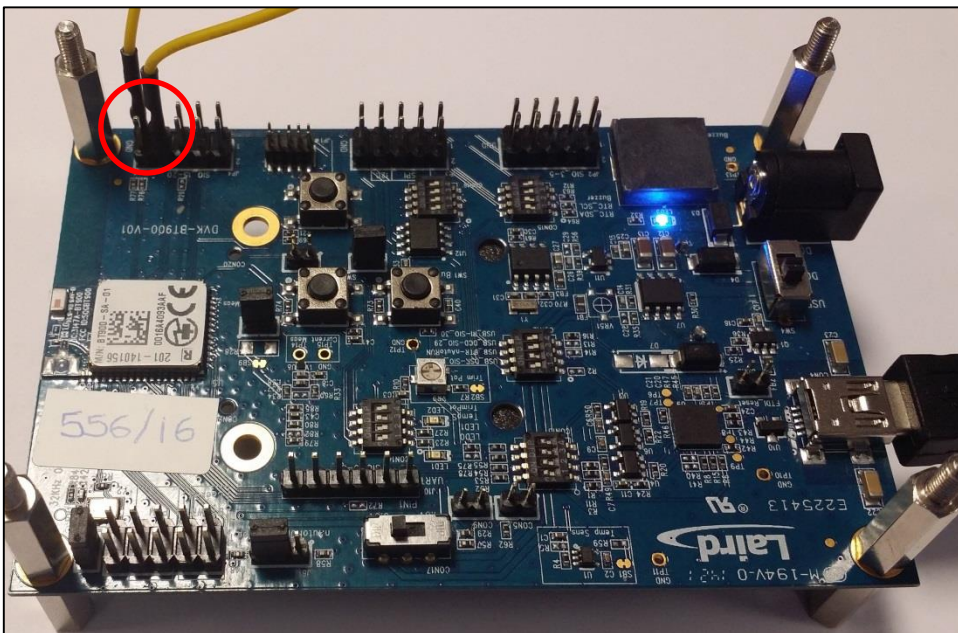


Figure 3: BT900 in VSP mode and jumper attached (back)

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).

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5. Configure the COM port with the port number seen in device manager with the following settings:

- Baudrate – 115200 (v9.1.2.0)
- Parity – None
- Stop Bits – 1
- Data Bits – 8
- Handshaking – CTS/RTS

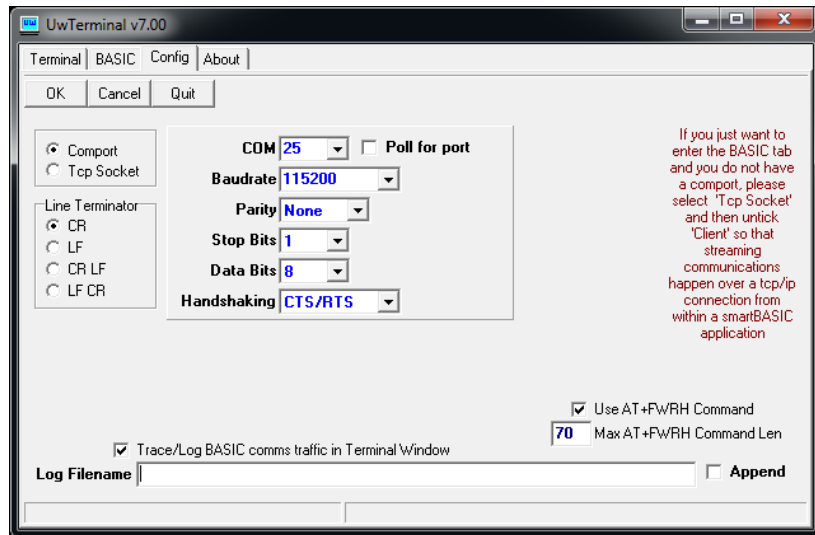


Figure 4: Comms Settings

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

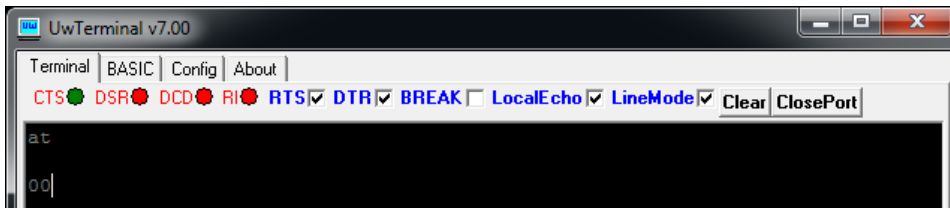


Figure 5: Comms OK

## USING THE OTA FUNCTIONALITY

1. Install the Laird Toolkit from the Google Play Store and ensure Bluetooth is enabled in the device settings. The application download is labeled Laird Toolkit

**Note:** The Laird Toolkit is also valid for the following Laird BT4.0+LE module applications: Heart Rate, Blood Pressure, Proximity, Virtual Serial Port, Over-the-Air Downloads, and Batch Command Manager.

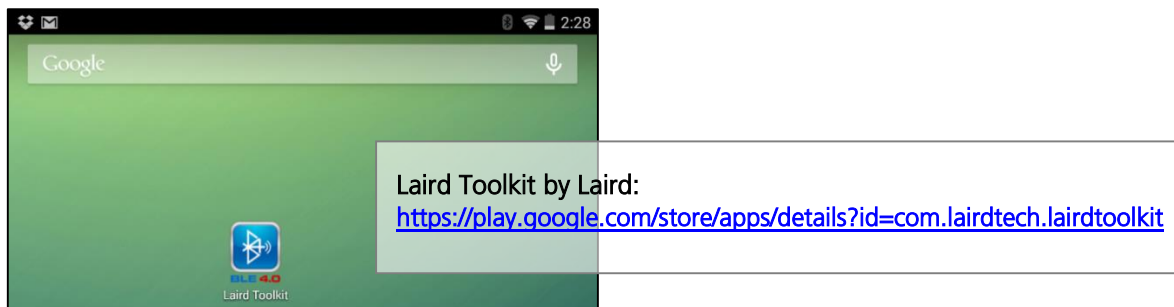


Figure 6: Laird Toolkit app installed

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- Once installed, run the Laird Toolkit application on your Android device.

Do the following:

- Select **OTA** (Figure 8).
- Click **Scan** (Figure 7).
- From the list of available devices, select a device that currently runs on VSP (Figure 10).
- Click **Select Download File** (Figure 9).

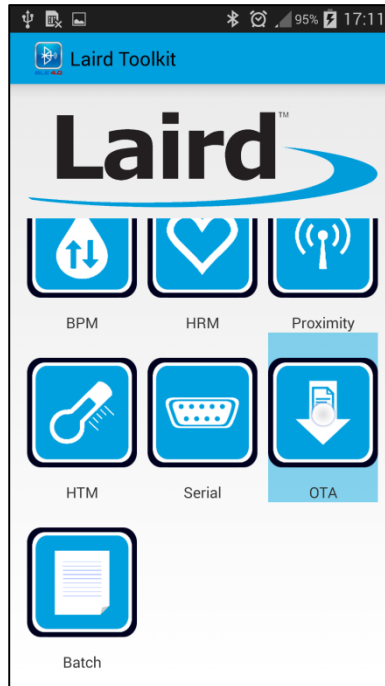


Figure 8: Select OTA

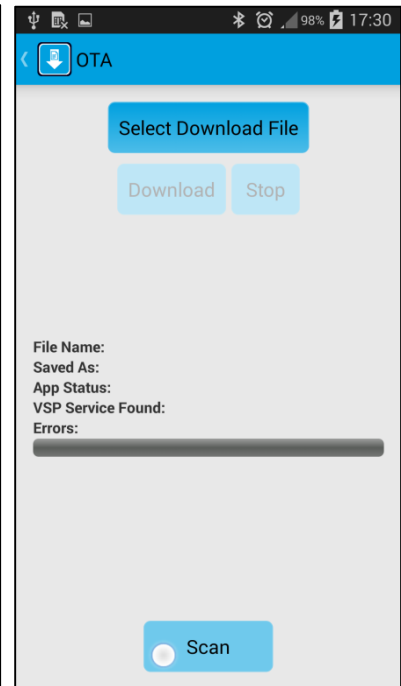


Figure 7: Click Scan

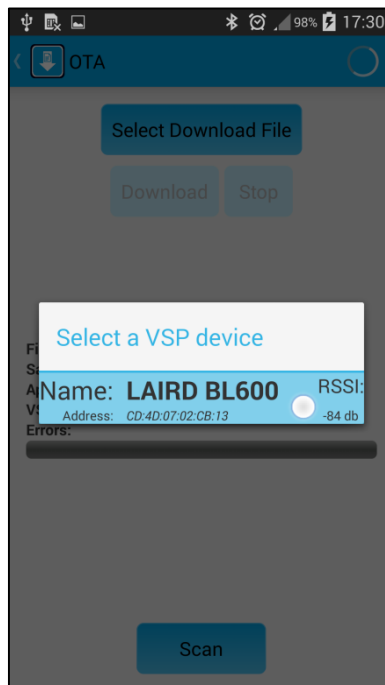


Figure 10: Select a device that runs on VSP

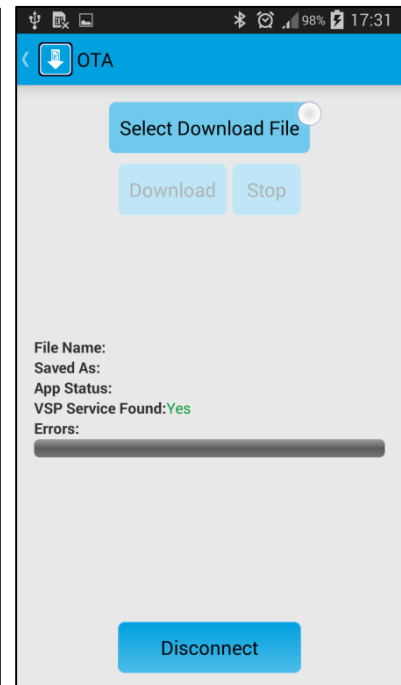


Figure 9: Click Select Download File

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- e. Choose a .uwc (a compiled *smartBASIC* application) (Figure 11).
- f. Click **Download** (Figure 12).

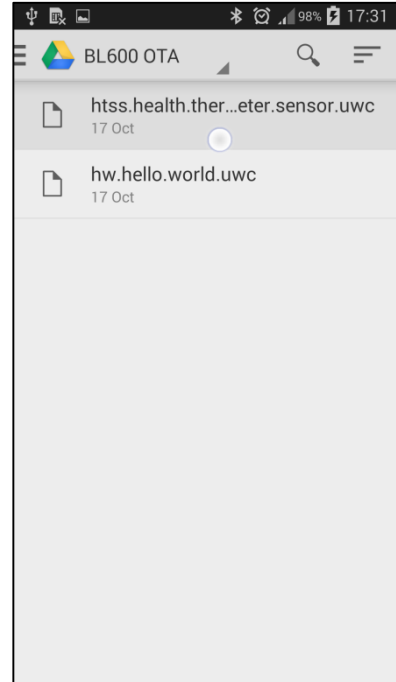


Figure 11: Choose a .uwc which is a compiled *smartBASIC* application

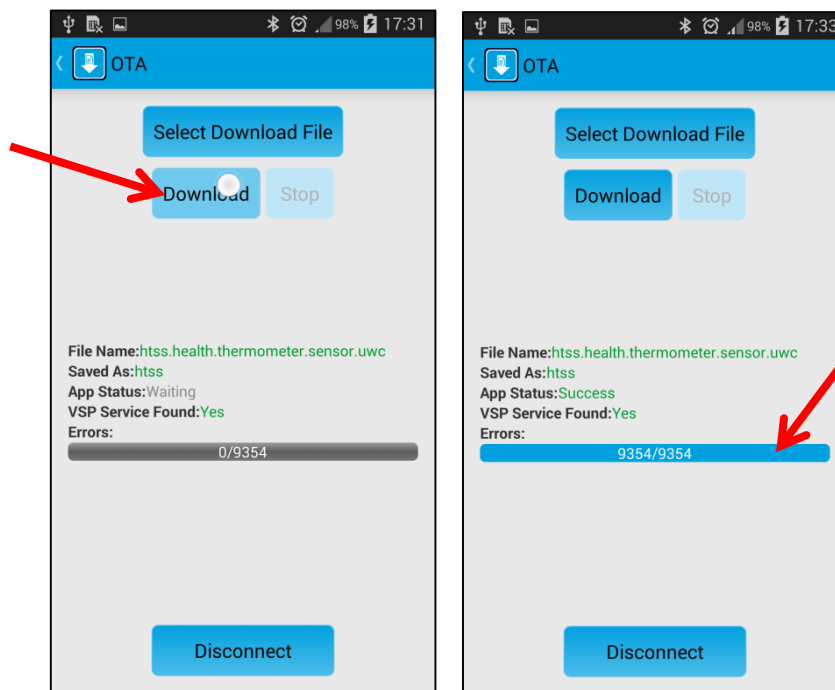


Figure 12: Click Download

*smartBASIC* application should now be installed in the module. You can use the AT command "at+dir" in the UwTerminal to see the applications that are installed in the current module

## REVISION HISTORY

Revision	Date	Description	Approved By
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### Application Note

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1.0	26 Nov 2014	Initial Release	Jonathan Kaye
1.1	22 Jan 2015	Updated new website links. Added Revision History	Sue White