

# Bliss Buzzer

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## **1. Quick Start**

- 1) In the Bliss Buzzer Android application, click Configuration > Devices > New Device. Select your Bluetooth device in the list, enter a Name for this device, and click Save.
- 2) In the Devices page, click on your device and then click Connect.
- 3) Once connected, return to the Home page (upper left corner) and click on View Data to see the data stream.

## **2. Full Setup**

- 1) Create a user account<sup>1</sup> on the website [bliss.calit2.net](http://bliss.calit2.net). Once you enter an email, username, and password, the website will send an email to you to confirm your registration.
- 2) In the Bliss Buzzer Android application, click Configuration > Users > New User and enter in the account information. Once finished, click Save and then navigate back to the Configuration page by clicking Configuration in the upper left corner.
- 3) Click Devices > New Device. Select your Bluetooth device in the list, enter a Name and Description for this device, select your User Account, and click Save. Then, click on your device and click Connect. Note that for the device to be visible to the application, the device and its Bluetooth must be turned on.
- 4) To edit the Sessions, Tags, or Tactile Feedback settings, click on the corresponding button in the Configuration page. For more information, see Sec. 3. Configuration.
- 5) Once the configuration is complete, navigate to the View Data page from either the Home page or the Configuration page. Start a session and view your data. For more information, see Sec. 4. Functions.
- 6) Once you are finished recording data, click Stop Session.
- 7) To see your legacy data, navigate to Home > History. Click on the session you just recorded. Under the Data Files header, click Upload. Optional: you may also edit your annotations here.
- 8) Login to [bliss.calit2.net](http://bliss.calit2.net) to see more detailed analysis about your session.

## **3. Configuration**

### **3.1 Users**

A new user should create a user account by entering username, email, and password on the website [bliss.calit2.net](http://bliss.calit2.net) to organize his/her sensing devices and data. The account is used to match the user with his/her data.

### **3.2 Tags**

In order to analyze the data, the user can create and place Tags to record the user's activity or feeling at a particular moment. This tag is stored and can be visualized together with the data in the website. This feature is very important to compare and analyze the physiological effects of certain activities, moods, and situations. Preloaded into the system are some tags that describe emotional state. There are two

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<sup>1</sup> A user account in [bliss.calit2.net](http://bliss.calit2.net) is required to view the online analysis, but it is not necessary to only use the Android application.

types of tags that the user can create: instantaneous and non-instantaneous. Non-instantaneous tags will allow the user to annotate an activity that occurred over a period of time (with a start and stop) and instantaneous tags will allow the user to note down an event that happened just for a moment. The user may add more types of tags by clicking “+ Add Tag Group” in the Configuration menu or by clicking on an existing tag group and adding tags to that group.

### **3.3 Devices**

Compatible devices include the Zephyr Bioharness 3, the Wimm One watch, and the Nonin Onyx II Fingerprint Oximeter. In the devices screen, the user may scan for new devices, refresh the Bluetooth to see available devices, and connect to devices. While adding a new device, it may be helpful to type the name of the user in the description field so the device and its corresponding user can be easily identified. Connecting to some devices may require pairing the devices beforehand through the Bluetooth Settings. If the device and its Bluetooth service is turned on but the application does not recognize it yet, it may be helpful to press the refresh button in the upper right corner. Also, un-pairing and pairing the device again may help too.

### **3.4 Sessions**

A session identifies a time interval in which the user is performing a specific activity, which is prolonged in time. Each session is marked with a session type, e.g., “At work”, “Yoga lesson”, or “Sleeping”. In general, a session identifies a long period, in the order of hours. This information is stored with the data, and can be visualized together with the data online. The user may add a new type of session by clicking “+ Add Session Type”. A session can be divided into subsessions, with the same logic. Under subsessions, the finest level of annotation is a Tag (explained in Sec. 3.2 Tags).

### **3.5 Tactile Feedback**

The user can also program through the Android application the tactile feedback, which is performed in the Android device or in the Wimm watch. Currently, this feature only functions with the Zephyr Bioharness 3 sensor. Every time the Android device tracks a variation in two consecutive R-R intervals which is bigger than a threshold  $D=50$  ms, the feedback device is gently vibrating. This variation is connected to a change in the activation of the parasympathetic nervous system.

It is possible to change the value of the threshold  $D$  and the duration of the vibration, by editing the corresponding value in the Tactile Feedback screen. Once the tactile feedback has been configured, the settings can be saved and the user can return to the previous screen by clicking Configuration in the upper left corner.

## **4. Functions**

### **4.1 View Data Stream**

Clicking on the View Data button, the graphs of the data received from the sensor will be displayed. The user can slide his/her finger across the graph in order to see other graphs. At the bottom of the screen, clicking Show will change the view of the screen from Annotations to Graphs mode and clicking Tag will change it back. In Annotations mode, the user can start or stop sessions and subsessions as well as record tags in real-time. In the graphs mode, the user can see three sets of graphs on the same screen.

## **4.2 Organize Sessions**

To start a new session, click on one of the sessions on the View Data screen. Once a session has been started, the user may stop the session, start/stop subsessions, or add annotations. In order to add more session types to choose from, go to the Configuration page. To begin an annotation, click on the New Button and then select the Annotation from the list of options. Clicking on the History button will allow the user to see previous Tags noted in the Session.

## **4.3 Manage Historical Data**

The History feature allows the user to edit the annotations on a previous Session and upload the data recorded to the server at [bliss.calit2.net](http://bliss.calit2.net), where the user can see more detailed information about his/her data. Note: this feature only maintains data that was recorded during a session. To retrieve all raw data, navigate to the Healthware directory in the file system.

## **5. Troubleshooting**

### **My device does not show up in the Device Scan Results**

- 1) Confirm that your Bluetooth device has not already been saved in the Devices page of the Bliss Buzzer application.
- 2) Confirm the device has Bluetooth enabled and is compatible with the Bliss Buzzer Application.
- 3) Unpair (if paired) and pair the Bluetooth device through the Bluetooth settings in the Android Settings application.
- 4) Scan for the device again.

### **My device's status is Available but the app does not connect to it**

- 1) Click Refresh in the Devices page.
- 2) Confirm that the device is not currently connected with the app on a different Android device.
- 3) Unpair (if paired) and pair the device through the Bluetooth settings in the Android Settings application.
- 4) Scan for the device again.

### **My device keeps disconnecting from the app**

This is likely a limitation caused by the Bluetooth on your Android device. Try to keep the Android device and the Bluetooth device at a close distance to each other.

Please direct any additional questions and concerns to [blissbuzzer@calit2.net](mailto:blissbuzzer@calit2.net)