# equivital

# EQVIEW MOBILE

User Guide

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# Table of Contents

# List of Abbreviations

| | | | |
|---|---|---|---|
| ECG | Electrocardiogram | SEM | Sensor Electronic Module |
| HTTP | Hypertext Transfer Protocol | UI | User Interface |
| MRI | Magnetic Resonance Imaging | URL | Uniform Resource Locator |
| PWI | Physiological Welfare Index | | |

# 1  Introduction

This User Guide will guide you through every aspect of the eqView Mobile application explaining in detail how you, the user, can utilise the full functionality of the application.

This guide is intended for users who have purchased Equivital™ Sensor Electronic Modules (SEMs) and who are familiar with cardio-respiratory monitoring terminology and practice.

NOTE: Screenshots may vary depending on your mobile device.

## 1.1  User Guide - latest version

Please note that this Equivital™ LifeMonitor User Guide is updated on a regular basis.

Please register on the Equivital Helpdesk for access to the latest version of this User Guide and other customer support:

https://support.equivital.com

## 1.2  Getting Help

If at any point during the installation, configuration and / or use of eqView Mobile you encounter problems, which you cannot resolve and are not addressed in this User Guide, please contact your local Equivital™ Sales Representative via one of the contact methods below:

Tel:      +44 (0) 1954 233430

Fax:      +44 (0) 1954 233431

Email:   support@equivital.co.uk

Monday to Friday 9am to 5pm (United Kingdom). If you require support outside of these hours, we can arrange a support call by appointment.

## 1.3  Warnings, Cautions and Information

The following symbols will appear throughout this User Guide to advise of any dangers or to provide information that may prove useful.

**Warnings** are provided where there is an immediate danger to Subjects (those wearing the Equivital LifeMonitor) and/or Users (those configuring, and using the data obtained from, the Equivital LifeMonitor).

**Cautions** are provided where there is danger of damaging equipment or associated devices.

**Information** Messages are provided to assist the User in the installation and use of the products.

## 1.4 eqView Mobile for Android: Minimum System Requirements

The eqView Mobile application is designed for use with Android and the device where it is installed must, as a minimum, meet the following system requirements.

- Android – v10.0 and above (Please check with Equivital for current security recommendations).
- eqView Mobile for Android is designed for smart phones and tablets.

# 2 eqView Mobile Overview

(!) The eqView Mobile application is not intended for use as a clinical application for patient monitoring or diagnosis. eqView Mobile should be used in conjunction with clinically validated software if the subject is deemed to be at risk.

(!) Under no circumstances should a subject undergo an MRI scan, if a Core Temperature Capsule has been swallowed and is still in the subject's digestive system.

(!) Under no circumstances should a subject undergo an MRI scan, if a Dermal Temperature Patch is still attached.

The eqView Mobile application allows you to connect a SEM to a mobile device using its built in Bluetooth or USB Tether. The real time physiological data is displayed locally as summary data on the device itself. If applicable, data may be streamed using the mobile device WiFi or 3G/4G capability to the Equivital Black Ghost web application.

## 2.1 eqView Mobile UI Overview

The new eqView mobile app has 4 main screens that are typically used:
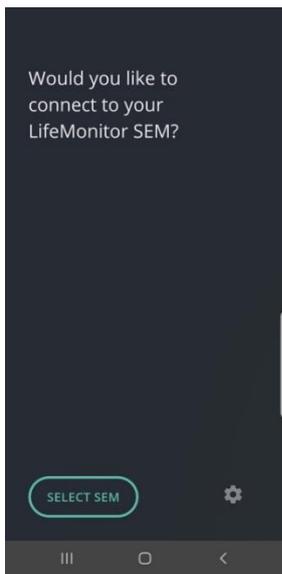


**Start Screen**

Guides you to connect to a SEM
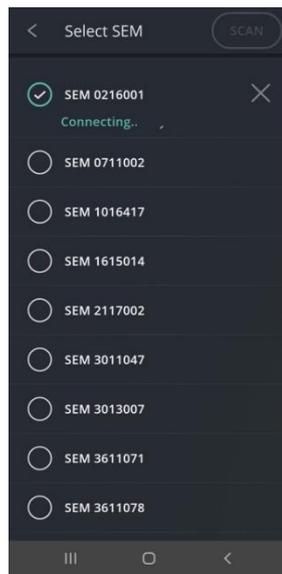
**Select SEM Screen**

Enables you to discover and connect to a SEM using Bluetooth

**Dashboard**

Shows real time physiological data from a connected SEM
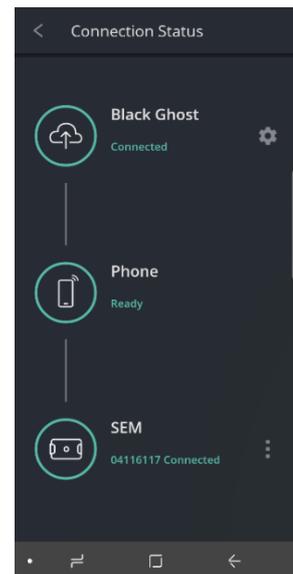
**Connection Status**

Shows connectivity status of the SEM, the Phone and Local Storage (or Black Ghost if enabled)

(?) The new Mobile A          tre          Pr          ou wish to continue u          do          ile A          d.

The following sections describes how to use eqView Mobile to get the most out of your Equivital™ System.

# 3 Installation and Launch

## 3.1 Uninstalling previous versions

Before installing eqView Mobile, it is essential that the previous versions of Application APK (eqView Mobile.APK) and ADS APK (EqView Connect.APK) Android packages are removed.

Uninstalling these apps will delete all settings and data. It is highly recommended that you make a note of your settings, particularly Black Ghost Server details.

Typical steps to uninstall these packages are below. Consult your Android phone guide for instructions specific to your phone.

1. Go to Settings > Apps on your mobile phone.
2. Search for the two packages: eqView Mobile and eqView Connect.
3. Select each package individually and from the Android menu, Uninstall each of them.

## 3.2 Installing eqView Mobile

The eqView Mobile application must be downloaded from an authorised Equivital™ representative. Contact your local representative for information on where the application can be downloaded.

You will receive one file, the Application APK (eqView Mobile.APK). We recommend the following method for installation. Your IT provider may ask you to use a different method.

1. Copy the .APK file to your Android device in a memorable location

   - In Android 10, you will need to use an Android-trusted storage medium such as Google Drive. You will need to enable 'allow installation of non-market apps' in Phone>Settings>Apps>Unknown sources

2. Follow the on-screen instructions to install eqView Mobile

## 3.3 Launching eqView Mobile

How eqView Mobile is launched will depend on the mobile device you have installed the application on. Please refer to the User Guide supplied with your Android device for detailed instructions on how to do this.

The eqView Mobile Icon

# 4  Connecting to a SEM

Before a summary of real time physiological data can be displayed, the following steps must be completed:

1. Ensure the SEM is turned on and has sufficient charge.

2. The SEM has been configured using either eqView Pro or eqView Qiosk. Refer to instructions in respective IFUs for further information

3. eqView Mobile APK has been installed (see Installing eqView Mobile)

## 4.1  Follow the steps below to connect to your SEM via Bluetooth

1. If you are connecting the phone to a SEM for the first time, choose 'Select SEM' option to navigate to the next screen which will discover and list all SEMs by Serial Number.

2. Select the serial number seen in the list which matches the number on the back of your SEM.
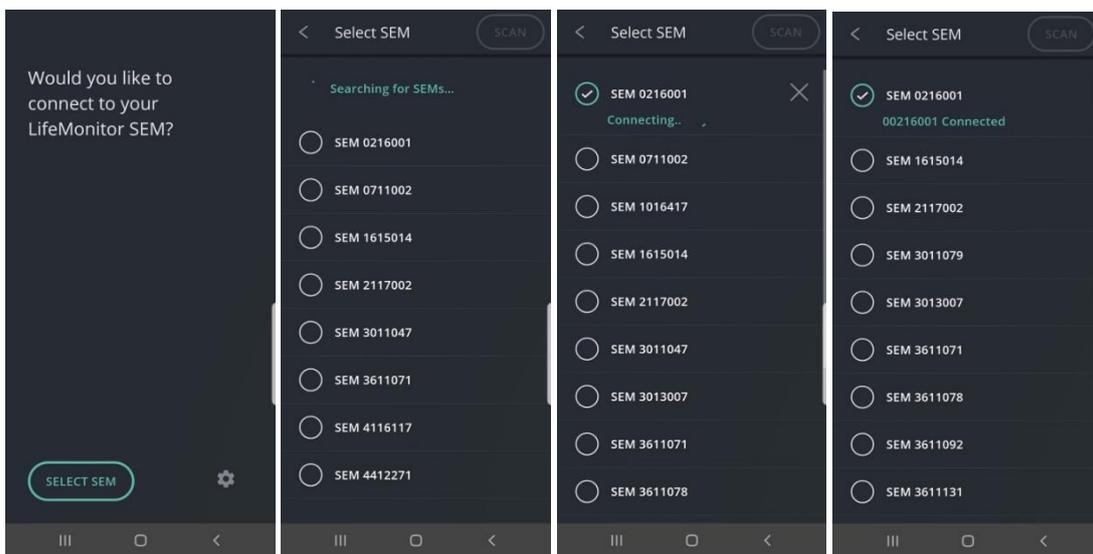


If you are in a team environment with lots of SEMs, sometimes you may need to repeat the Scan to find your SEM.

If your SEM is already connected to another Mobile Device, it will not appear on the screen. In this scenario, your team members will have to check the Status page to see if they are connected to your SEM and then disconnect from it. See Connection Status section for more information on how to find out the connected SEM number and disconnect.

3. Some SEMs may ask for a Bluetooth PIN as part of the pairing process. Enter the PIN provided by your Admin.

> The SEM Bluetooth PIN code can be changed in Bluetooth Connectivity of General Tab in Equivital Manager. The user is strongly advised to change the PIN from the factory default setting.

4. The app offers you a one-step approach to connecting to your last connected SEM. The SEM ID is displayed on the screen as shown below. Selecting 'Connect to SEM' will automatically connect to that SEM. Switch SEM option lets you discover and connect to another SEM.
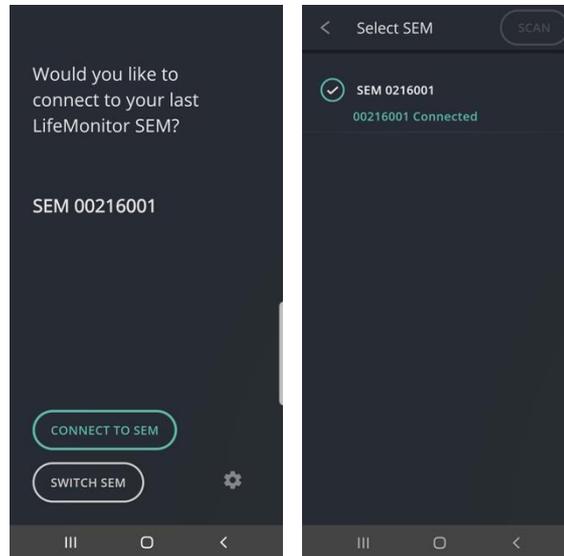


5. Once connected, the APP will automatically transition to the Connection Status page.

# 5 Viewing Connection Status information

A successful SEM connection brings up the Connectivity status screen automatically. It shows three components that make up the system. Status is indicated using colours and text along with suggestive text to help resolve any issues.

When all three components have a green status, the Connection status page automatically collapses to bring up the Dashboard with Physiology data. Alternatively, selecting the back button also brings up the Dashboard.
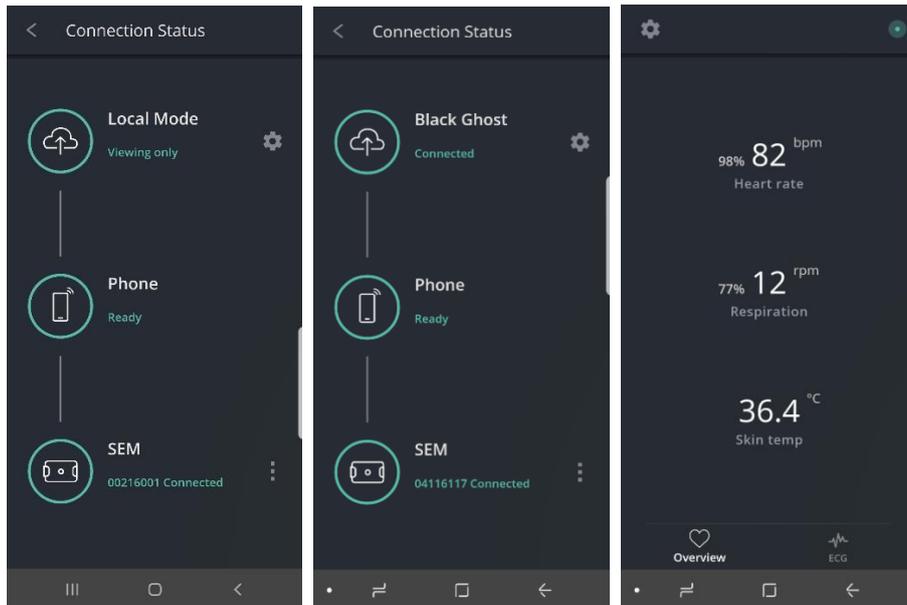
The screens below illustrate error messages in the connectivity status screen. A Table is available with various error messages and how to troubleshoot. For more information about Black Ghost, please refer to the 'Streaming data to Black Ghost' section in this document.
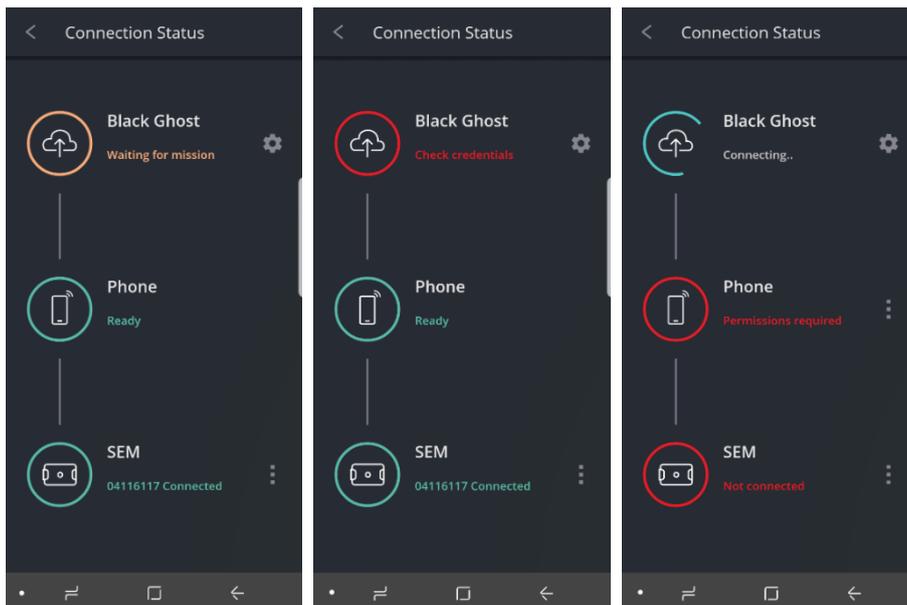
The connection status screen provides shortcuts to make modifications to the states including disconnecting a SEM.
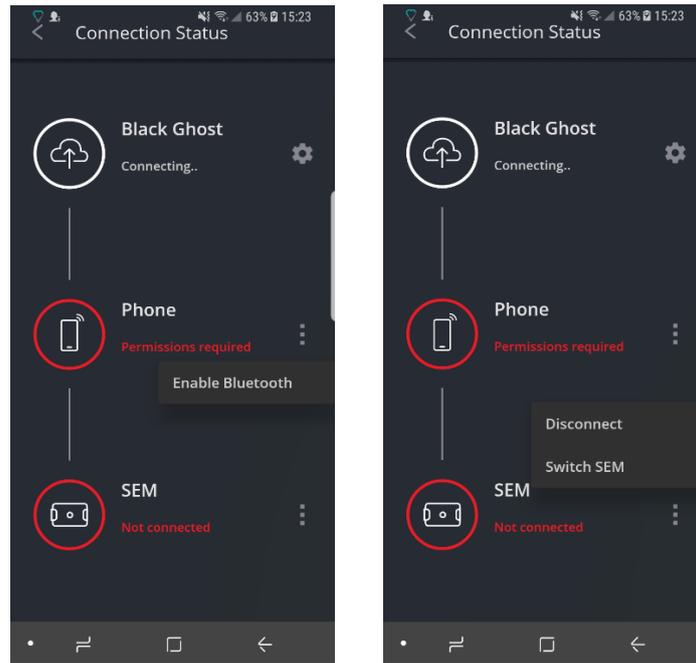


The following table lists connectivity status error states and possible actions to resolve them.

| Errors | Meaning | Action |
|---|---|---|
| SEM<br>Not connected | The connection to selected SEM has failed or disconnected | The app will attempt to reconnect to the SEM automatically. Select the menu shortcut icon on the right to Disconnect or Swap SEM |
| SEM<br>00216001 Connected<br>Connect SEM to belt | The SEM is not plugged correctly into the LifeMonitor Belt | Plug in or Unplug and Re-plug the SEM into the Belt |
| SEM<br>01615014 Connected<br>Check belt fit | The SEM believes the belt is not worn properly, not worn at all or the clasp not fastened | Check that the Belt is correctly fitted, clasp fastened and the Belt size is correct. Refer to the LifeMonitor instructions and the Mission Admin for further assistance |
| Black Ghost<br>Waiting for mission ⓘ | If Streaming to Black Ghost is enabled, the connected SEM Id is not in a Live Mission on the Black Ghost server or the Mission is yet to start | Clicking on the information icon brings up error message received by the APP.<br>Contact Mission Admin if it does not automatically resolve.<br>Pass on the information in the error message that comes up |
| Phone<br>Check network<br><br>Black Ghost<br>Check network | Network connection has not been established between the phone and Black Ghost. This could be due to your phone network connectivity or WiFi connectivity. | Check your phone network and WiFi connectivity status.<br><br>If Black Ghost is enabled and previously connected, any data collected will be de-buffered when connectivity is restored. |

| Errors | Meaning | Action |
|---|---|---|
| **Phone** <br> Permissions required | Location, data storage and Bluetooth has not been enabled and are required for the app to function. | Select the menu icon to enable the required permission. <br> In some cases these permissions can only be <br> enabled in the Android app permissions menu. <br> The phone should be configured to use 'High location accuracy' setting in Android menu for Black Ghost connections |
| **Black Ghost** <br> Disconnected | The APP is disconnected from the Black Ghost server most likely because it is not connected to a SEM | Connect the APP using the menu option next to the SEM. The APP should then try to reconnect to Black Ghost automatically |
| **Black Ghost** <br> Check configuration | Black Ghost server URL is not configured or incorrectly configured | Contact Mission Admin for the Black Ghost server URL and configure in settings via the shortcut (cog icon) |
| **Black Ghost** <br> Check credentials | The configured Data submitter credentials for Black Ghost server are not accepted | Contact Mission Admin for correct credentials <br> Check data submitter credentials in Black Ghost configuration |

# 6 Streaming data to Black Ghost

This functionality is available to Equivital Black Ghost customers only and not as part of the standard TnR Product range. For further details please contact Sales@equivital.com

To view the real time physiological data on Equivital Black Ghost, the application must be configured. Configuration requires the following information which your Mission Admin or System Admin should be able to provide.

- The Equivital Black Ghost Server URL.

- Black Ghost a Passcode (recommended) or a data submitter username and password.

Follow the appropriate instructions below.

## 6.1 If you have been given a passcode

Once you have the above information, follow the steps below to configure, enable and test Black Ghost connection.

- Access the Settings Screen from the Start page, from the Connection status page or the Dashboard page by selecting the Cog wheel icon.

- Turn on Send Data to Black Ghost which will bring up a short cut to configure the server.
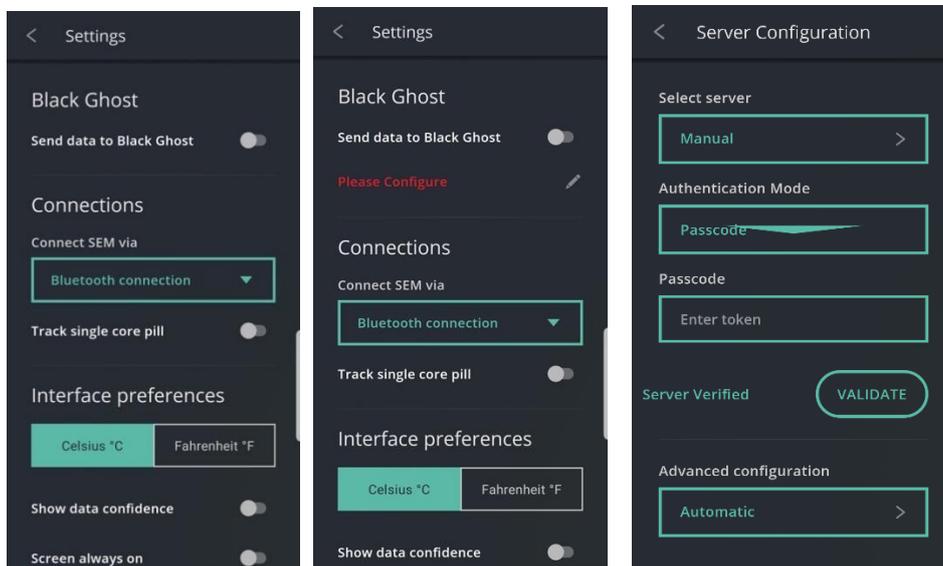


- Select the Server, either from the discovered list or by entering the server URL.

- Using the back button to come back to the previous screen, enter passcode, as provided to you by your administrator.

- Validate to confirm all entered information is correct. All entered information will be saved, valid or not.

## 6.2 If you are using a data submitter username and password

Once you have the above information, follow the steps below to configure, enable and test Black Ghost connection.

- Access the Settings Screen from the Start page, from the Connection status page or the Dashboard page by selecting the Cog wheel icon.

- Turn on Send Data to Black Ghost which will bring up a short cut to configure the server.
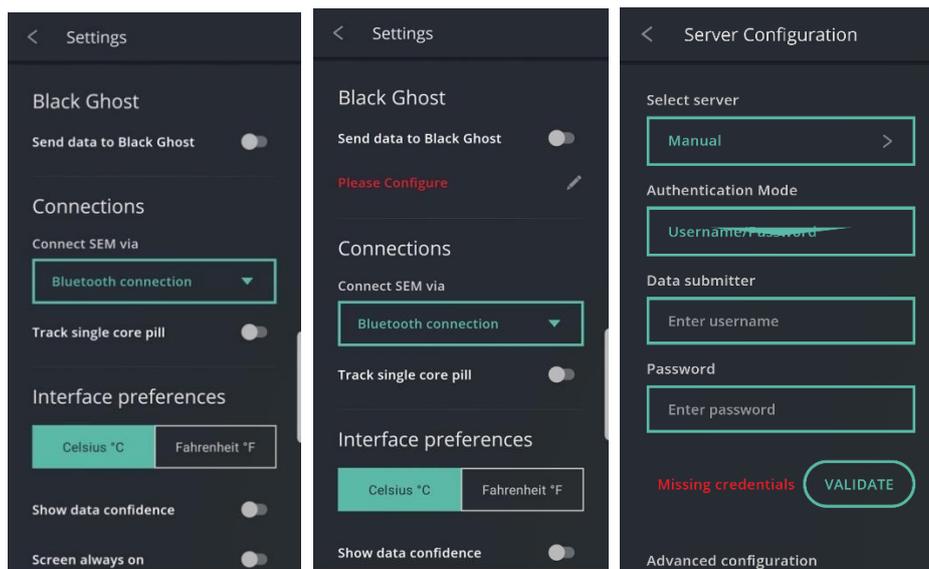


- Select the Server, either from the discovered list or by entering the server URL.

- Using the back button to come back to the previous screen, enter the username and password as provided to you by your administrator.

- Validate to confirm all entered information is correct. All entered information will be saved, valid or not.

- Once the server is verified, once again enable 'Send to Black Ghost' in the Settings page.

- eqView Mobile will now connect to the server. If your system requires that you confirm your identity, please wait for the confirm identity message to appear at the top of the screen

 Note: once configured the application will continue to stream data onwards even if the UI has been closed by the user.

- Click on the 'Subject Confirmation Needed' message
- Confirm your identity.
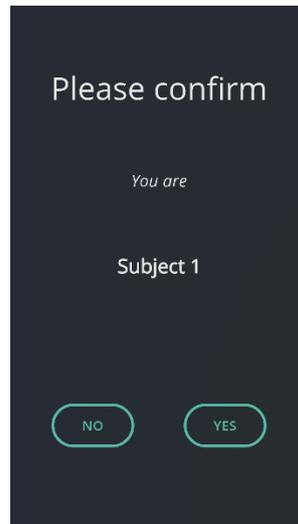


- The Connection Status page will also reflect the Black Ghost connection status.
- Black Ghost server settings can be edited at any time by following the same steps above.

# 7   Using eqView Mobile

## 7.1   Viewing Summary Data and Live Waveforms

Physiology data from a connected SEM can be seen in the Dashboard screen which loads up from the Connection Status page.

Select the back button on the top left-hand side of the connectivity status page to return to the Dashboard screen at any time.



**Status icon and Notifications**

> **i** Note:  waveform rendering is processor and display intensive. So, for the best experience, this functionality is only recommended in a high-end mobile device

> **!** WARNING - NOT CLINICAL: ECG waveforms are included in Mobile so that users can check that ECG data     quality is adequate for their study. Use the waveform view to check that a subject has a correctly fitted belt and a SEM which is working correctly.

The Dashboard screen uses a Notification icon along with Alert messages to show unexpected errors. Selecting the notification icon brings up the Connection status screen discussed previously.

The SEM battery low alert also shows up on the dashboard. The error messages prioritise the highest alert state among all the components.

**eqView Mobile in the Background**

The connection will always run in the background however you close the application. To return to the application, select the eqView Mobile application icon from the Android Home screen or from the Android's Notification Bar. The App will appear showing its live connection and subject status. To Terminate the APP, go to the Settings Page > APP Management and Force Stop the APP

Note: once configured the application will continue to stream data onwards even if the UI has been closed by the user.

**Locking the Mobile Device**

To lock the screen, follow the normal process for locking or hiding the screen on your mobile device. You will not need to leave Mobile to do this. It is not possible to allow eqView Mobile to lock the mobile device from within the application.

# 8  Environmental Data

Subjects can add information on location, clothing type and work time from a pre-populated drop down which can be set on Black Ghost by your system administrator.
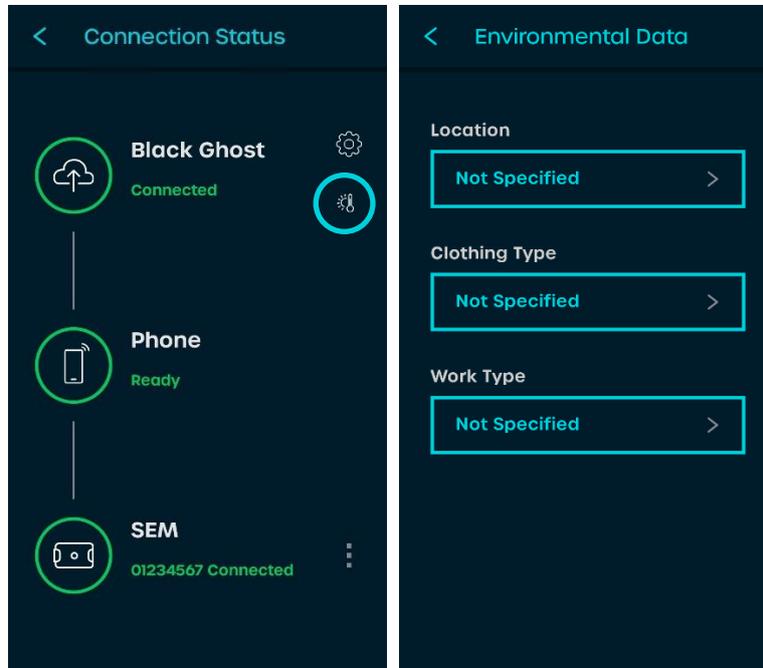


Click the environmental icon next to the Black Ghost icon.
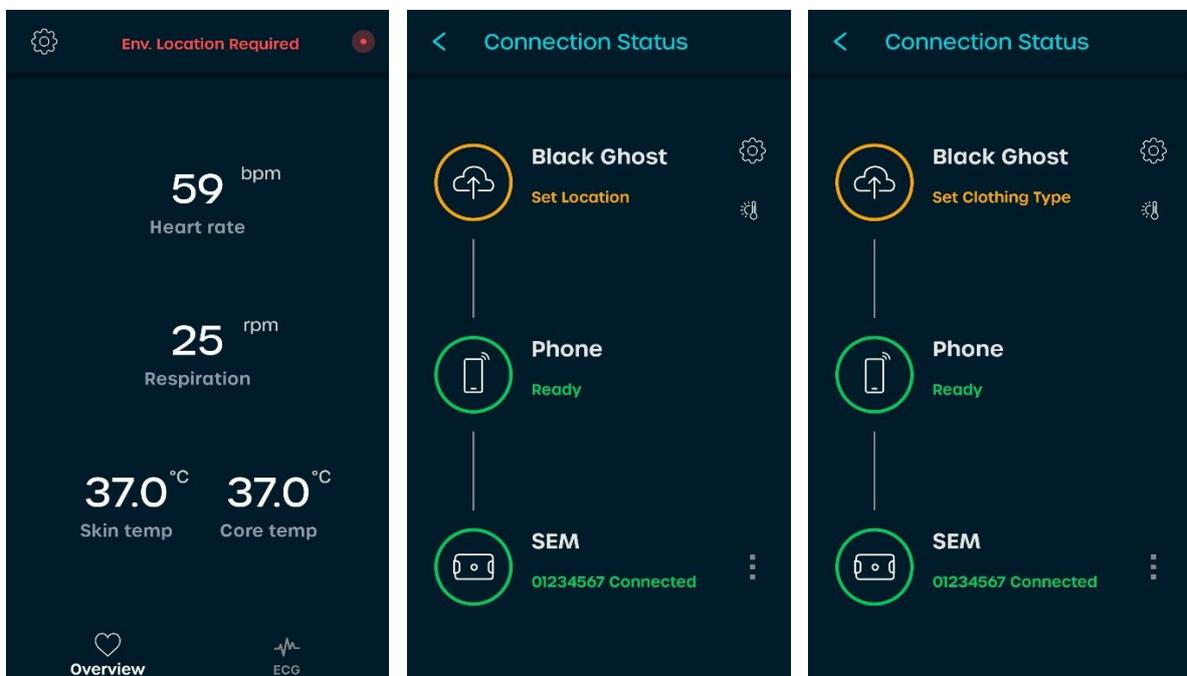


Prompts to fill missing environmental information will be shown as a connection status at the top of the screen or next to the Black Ghost icon.
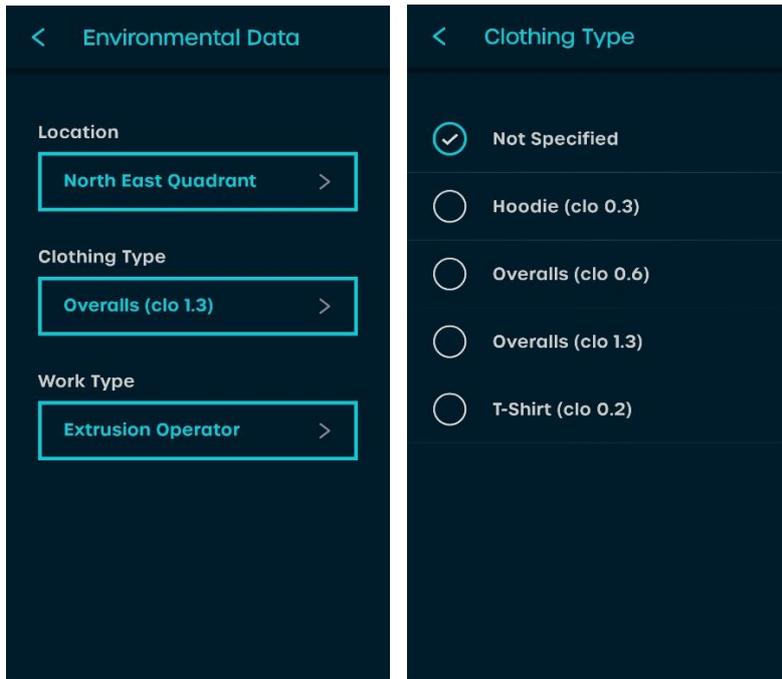
Location, clothing type and work type can be selected from a pre-set dropdown.
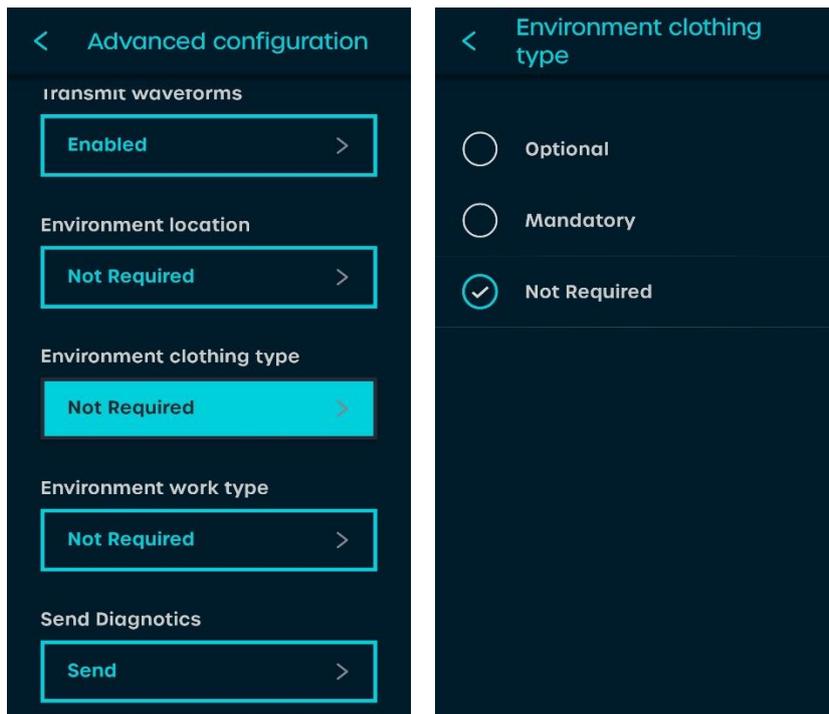
The advanced configuration screen is shown above.

We recommend using the automatic configuration which can be managed centrally by your system administrator, only use these options in consultation with Equivital support.

# 9 Other Settings, Miscellaneous information

## 9.1 Android Menu

The menu on an Android device is usually found at the bottom of the screen. The two examples below show how the buttons appear on most Android mobile devices; the icons from left to right are Back, Home and Menu.



Please refer to the User Guide supplied with your Android device for further information.

## 9.2 Service Discovery Errors

If your mobile device refuses to connect to the SEM or shows service discovery errors, we recommend the following procedure.

1. Turn off and re-boot the SEM.

2. If that does not solve the problem, shut down and re-start the mobile device.

## 9.3 Connecting to SEM using Tether

The SEM can be connected to the phone using a tether, but default settings are to use Bluetooth. Change the connection to tethered connection of Bluetooth connection settings using steps below.
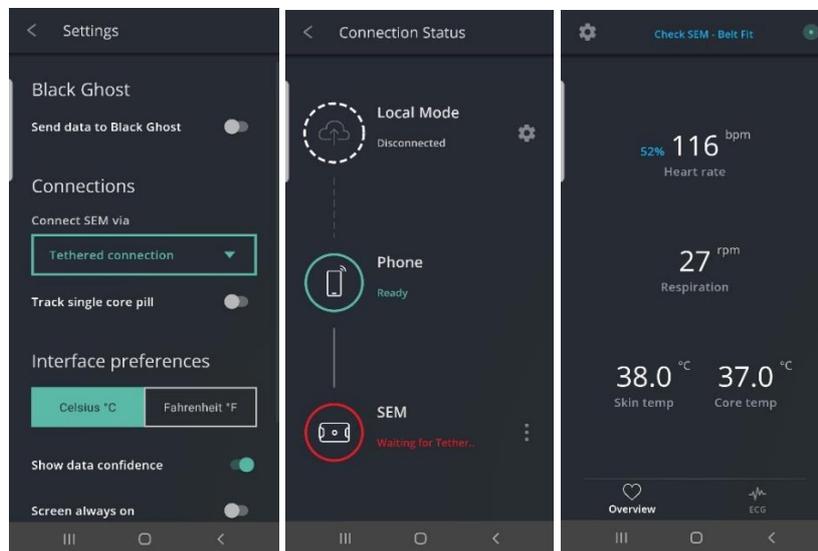


## 9.4 Core Pill Filtering

This option allows you to specify a core pill by entering its ID, as shown below. In this case, only temperature readings from the selected core pill will be displayed in the UI. Additionally, only data from the selected core pill will be streamed onwards to downstream applications.
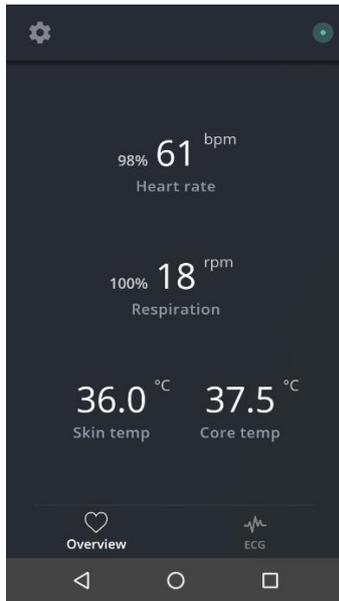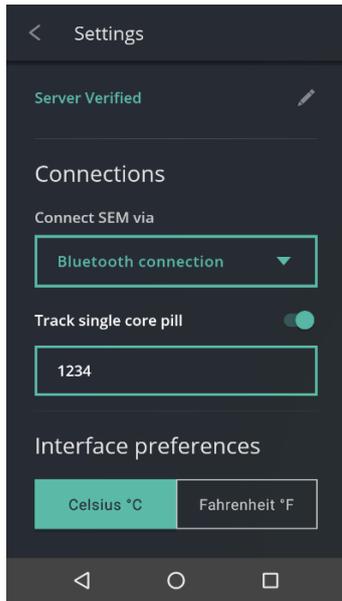
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