



# USER MANUAL

# **LIVE RAY**

GROUP 19

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## CONTENTS

1.	Introduction .....	3
1.1	Product Overview .....	3
1.2.	What's in the box .....	3
1.3.	Main Components .....	3
2.	User Instructions .....	4
2.1	Paramedic User Instructions .....	4
2.1.1.	Setting up the device .....	4
2.1.2.	Connecting to Wi-Fi .....	5
2.1.3.	User Instructions for the stand-alone device .....	5
2.1.4.	User Instructions for the mobile application .....	7
2.2.	Hospital User Instructions (for Desktop application) .....	8
2.3.	Admin User Instructions .....	11
3.	Troubleshooting and safety precautions .....	12
3.1.	Trouble shooting .....	12
3.2.	safety precautions .....	13
4.	System Specifications .....	13
4.1.	Technical Specification .....	13
4.2.	Device specifications .....	13
4.3.	Mobile application Specification: .....	14
4.4.	Desktop application Specification: .....	14

## 1. INTRODUCTION

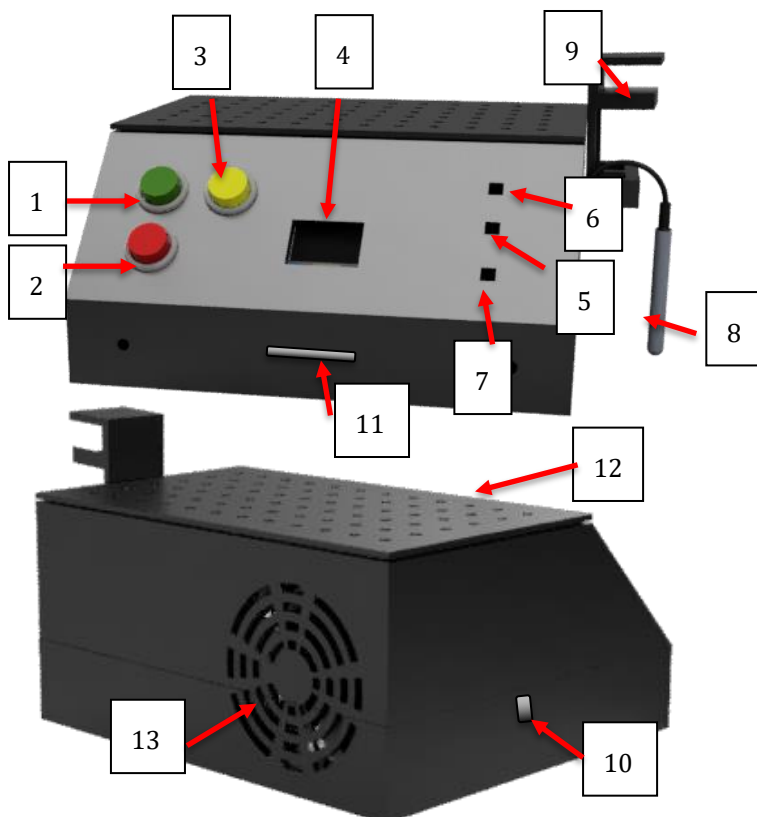
### 1.1 PRODUCT OVERVIEW

Introducing the '**LiveRay**' Patient monitoring and Ambulance Tracking device, a powerful, secure and user-friendly device that allows hospitals to easily monitor their patients while bringing them by ambulances. It consists of two wearable parts. namely, the finger clip and the temperature sensor tube. This device comes along with mobile and desktop applications that can be set up in minutes. Here, the device and the mobile application are for paramedics, and the desktop application is for hospital use.

### 1.2. WHAT'S IN THE BOX

- ✓ Live Ray Device
- ✓ Finger clip with heartrate sensor
- ✓ Temperature sensor
- ✓ Power cable
- ✓ User manual
- ✓ Design manual

### 1.3. MAIN COMPONENTS



- 1 – Cloud connectivity
- 2 – Start/ Stop Ride
- 3 – Change the internet connection
- 4 – Display
- 5 – Connection indicator (green)
- 6 – Active ride indicator (blue)
- 7 – Power indicator (red)
- 8 – Temperature sensor
- 9 – Finger clip with heartrate sensor
- 10 – micro-USB port
- 11 - Buzzer
- 12 – Removable lid
- 13 – fan

## 2. USER INSTRUCTIONS

### 2.1 PARAMEDIC USER INSTRUCTIONS

As a paramedic, you have to deal with the main device and mobile application in our system. Here we'll guide you on how to use the device as a stand-alone device to run the system and how to use the mobile applications to work more conveniently.

#### 2.1.1. SETTING UP THE DEVICE

- Check whether items listed under the "What's Inside the Box" section are present.
- Connect the device to a 5 V power supply using the USB cable (You can use the USB charge port in the ambulance) The device's status light (red) should turn on, indicating that it's powered on.
- Connect the device to the wifi router by clicking the yellow button (a). Once it is connected indicator 5 (blue) will turn on.

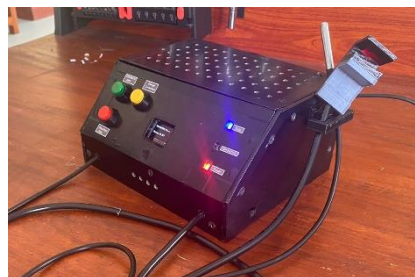


Figure 1 : Turning on the device

- Connect the device to the patient.
- Two wearable parts should be set up like this



Figure 2 :Inserting finger-clip



Figure 3: Holding temperature sensor

Note: when connecting the finger clip make sure it will fit into the patient's finger and be positioned correctly such that the fingertip touches the sensing part and instruct the patient not to press too hard and slightly move the finger frequently.



- ✓ **How to turn off the Device:** Before unplugging the power cable you may stop the current ride (Button 2) and disconnect from the cloud (Button 1)

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### 2.1.2. CONNECTING TO WI-FI

- First you need to register the two WIFI connections / mobile hotspots with their SSID and password to the device.
- If one gets disconnected, then the device will automatically connect with the other
- If you need to manually switch to the other connection, simply press the 'yellow button'

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### 2.1.3. USER INSTRUCTIONS FOR THE STAND-ALONE DEVICE

Even though this device comes along with a mobile application it also can be used as a stand-alone device.

Step 1: Before starting a ride check whether the red and green indicators are in ON status.

(if the second indicator's colour is very light, click on the green button to connect with the cloud and validate the device)

Step 2: Click on the start button (1) to start a new ride. You can hear a beep sound and the blue indicator will be ON. Now it first shows the directed hospital and then starts to show the patient's health parameters on the display.



Figure 2 : device is ready to start a ride



Figure 3 : After starting a ride

Step 3: We can't select the hospital we prefer. It automatically selects the nearest hospital to the current location. If the selected hospital transfers that patient to another hospital that will appear on the display with a beep sound.



Figure 4 : Display the destination hospital

Step 4: If there are any messages from the hospital side that also shows on the display with a notification sound. Note that you can only read them but cannot reply.



Figure 5 : Displaying newly received messages

Step 5 : After arriving at the hospital click on the stop ride button.



Figure 6 : After stopping the current ride

By login in to the mobile application with this device ID, you can get additional features like selecting hospitals, and chatting in a more convenient way.

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## 2.1.4. USER INSTRUCTIONS FOR THE MOBILE APPLICATION

First you have to install the mobile application. Click [here](#) to download.

Step1: Open the mobile application and sign in with the device ID and the password

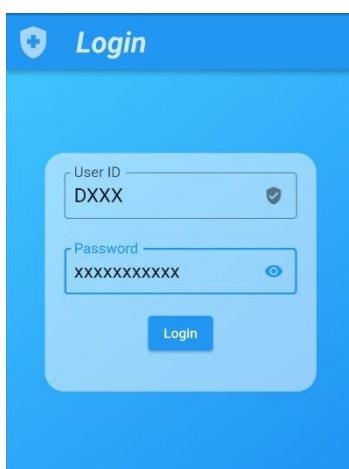


Figure 7 : login page

Step2: Here, you must enter the **device ID** again, and the **hospital** and click submit button. (other details can be submitted later only if needed)

Figure 8 : Page 2 Patient's data

The status will change from “offline” to “active” and the mean-time health parameters of the patient will start to update

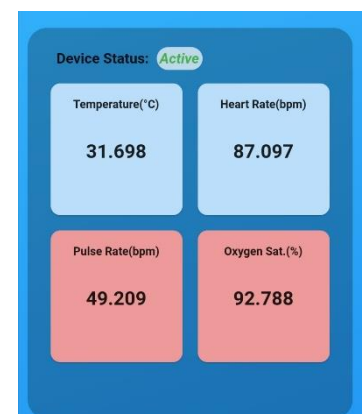


Figure 9 : Patient's health parameters

Note: You can select the preferred hospital if and only if you start the ride using the mobile app. In case you start the ride with the device and later login with the mobile app you can't change the hospital.

Step 3: To start a chat with the hospital click on the chat icon

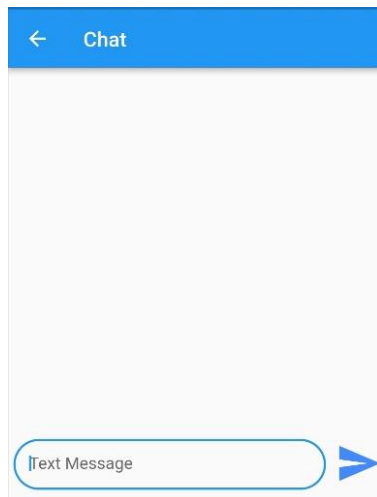


Figure 10 : chat page

Step 4: To stop the current ride click on the stop icon

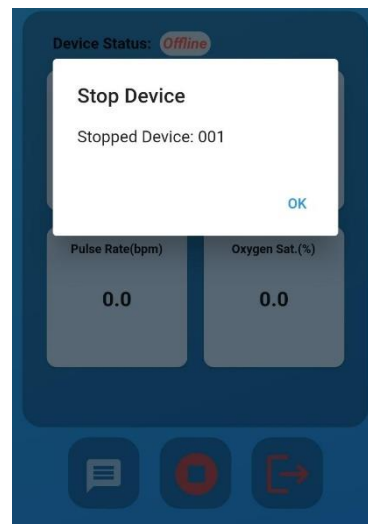
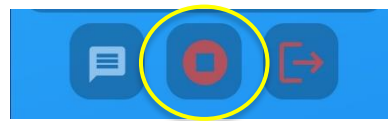


Figure 11 : After stopping

Step 5: To logout from the mobile app click on the logout icon

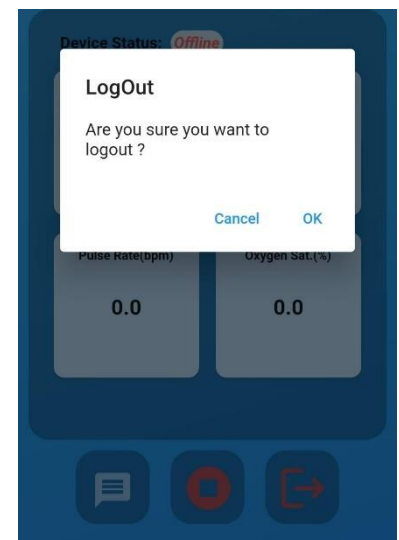


Figure 12 : Logout confirmation

## 2.2. HOSPITAL USER INSTRUCTIONS (FOR DESKTOP APPLICATION)

Step 1: Install the setup to the PC or a laptop .You can use this [download link](#)

Step 2: provide the correct hospital ID and password.

Step 3: Click on Connect button

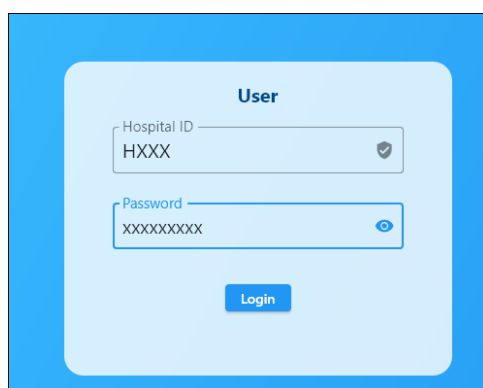


Figure 13 : Login page

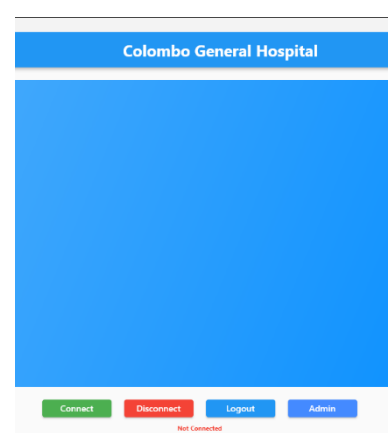


Figure 14 : Main dashboard



Step 3: This section contains patients direct to your hospital and those patient cards have standard colour code

Ride status		Patient's condition	
	Arriving		Normal
	Arrived		Critical
	Transferring		
	Transferred		

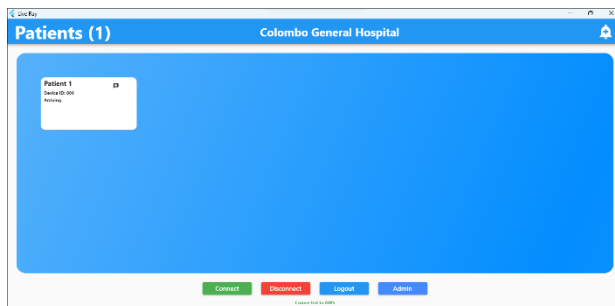


Figure 15 : Patient cards

Step 4: Click on a patient card to see details

#### ✓ Health parameter section

Once you hover the mouse on a several point on the graph it will show the numerical value.

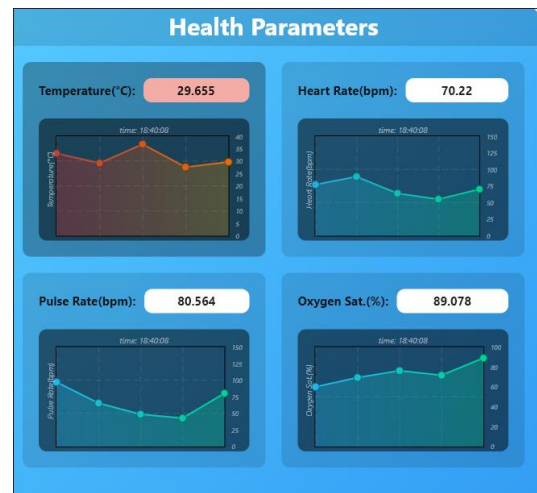


Figure 16 : Health parameters

- ✓ Ambulance current location and the patient's details

Figure 17 : Location and patient's details

- ✓ Chat section

Figure 18 : Chatting page

- ✓ To send a transfer request select the hospital and click the transfer

Figure 19 : Transfer patients

- ✓ To see the requests click on the bell icon (on main dashboard) and accept or reject them

Figure 20 : New patient requests

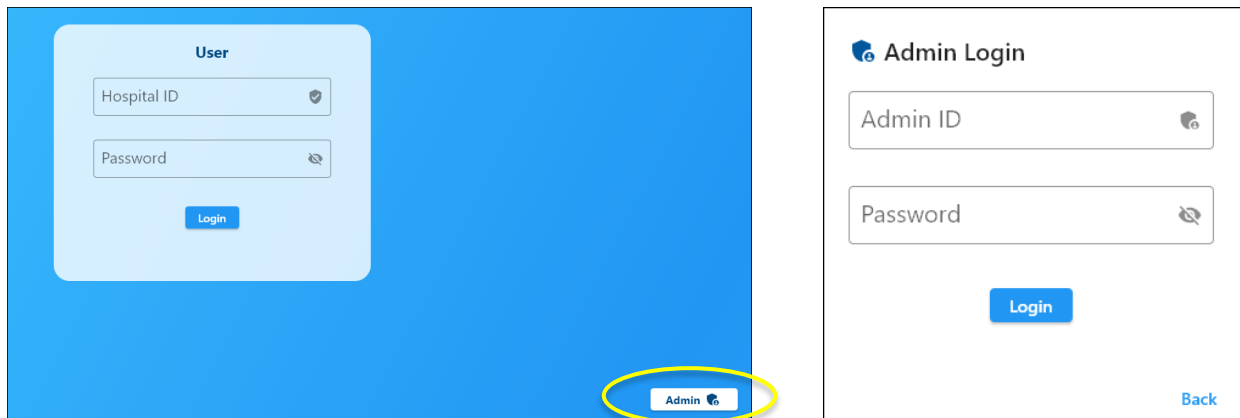
## Step 5 : Download the patient report

Temperature	Heart Rate	Pulse Rate	Oxy Sat.
35.7101	45.7442	87.6751	77.32

Figure 21 : Patient record

## 2.3. ADMIN USER INSTRUCTIONS

Step 1: You can log in to the admin section by clicking on this button.



The left screenshot shows a 'User' login form with 'Hospital ID' and 'Password' fields, a 'Login' button, and an 'Admin' button circled in yellow at the bottom right. The right screenshot shows the 'Admin Login' page with 'Admin ID' and 'Password' fields, a 'Login' button, and a 'Back' link at the bottom right.

Figure 22 : Admin login page

Step 2: As the admin, you have privileges to add devices, remove devices, add hospitals, and remove hospitals from the system database.



The left screenshot shows the 'Add New Hospital' form with fields for 'Hospital ID', 'Hospital Name', 'Contact No', 'Latitude', and 'Longitude', a 'Submit' button, and a 'Remove Hospital' section with a 'Hospital ID' field. The right screenshot shows the 'Add New User' form with fields for 'User ID' and 'Password', a 'Submit' button, and a 'Remove User' section with a 'User ID' field and a 'Remove' button.

Figure 25 : Add/remove hospital

Figure 26 : Add/remove user

Also you can see the details about all the hospitals in the system

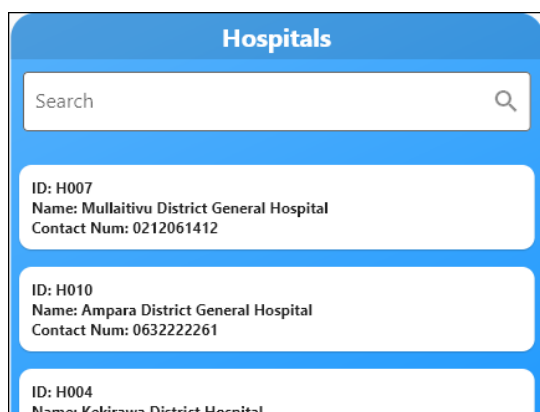


Figure 27 : Hospital list

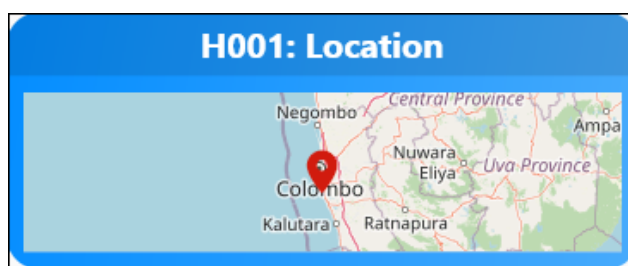


Figure 238 : Location of selected hospital

### 3. TROUBLESHOOTING AND SAFETY PRECAUTIONS

#### 3.1. TROUBLE SHOOTING

- ✓ If you encountered any network connection issue switch to the other network by simply clicking the 'yellow' button
- ✓ If you accidentally stop the current ride (by switching off the device), you must start a new ride again. Logging out from the mobile app or closing the app won't stop the current ride.
- ✓ Device not connecting to Wi-Fi: Make sure that the device is in range of the Wi-Fi network or simply press the yellow button and switch to the backup network connectivity. If it also doesn't work, try restarting the device and the router and connecting them again. (note: when restarting the device current ride will be discarded)
- ✓ Device not showing up in the desktop application: Check the green indicator. If it shows very light color. Press the green button and connect to cloud server again. Also, check that the device is added to the account in the mobile/desktop application.
- ✓ Device not responding to commands: Make sure that the device is turned on and connected to the internet. Also, try resetting the device and connecting it again to the mobile/desktop application.
- ✓ Device freezing or crashing: Try resetting the device and the mobile/desktop application, and make sure that they are updated to the latest version.
- ✓ For other technical issues contact us. <liveray19info@gmail.com>

### 3.2. SAFETY PRECAUTIONS

1. Keep the device on flat, dry and rough surface
2. Always use the recommended voltage of 5V as the power supply to prevent damage to the device
3. Do not attempt to disassemble or modify the device
4. Do not use the device near heat sources.
5. Keep the device cables and components always on the holder when it is not in use.
6. Before cleaning the device, unplug it from the power source and use a dry cloth to wipe it down.

## 4. SYSTEM SPECIFICATIONS

### 4.1. TECHNICAL SPECIFICATION

- ✓ Operating System: Compatible with Android 6 or later
- ✓ Operating Voltage: 3.3V
- ✓ Flash Memory: 4 MB
- ✓ SRAM: 64 KB
- ✓ WiFi Built-In : 802.11 b/g/n
- ✓ Power Supply: USB 5V
- ✓ Dimensions: 150 x 170 x 8 cm
- ✓ Additional sensors:
  - DS18B20 Temperature sensor
  - MAX30100 Heart rate sensor
  - NEO6MV2 GPS module

### 4.2. DEVICE SPECIFICATIONS

- ✓ Display: OLED 0.96"
- ✓ Power: USB 5V / External 3.7V Li-Po battery
- ✓ Connectivity: WiFi (802.11 b/g/n)
- ✓ Sensors:
  - DS18B20 Temperature sensor
  - MAX30100 Heart rate sensor
  - NEO6MV2 GPS module
- ✓ Dimensions: 170 x 150 x 80 mm
- ✓ Weight : 900g

#### 4.3. MOBILE APPLICATION SPECIFICATION:

- ✓ Compatible with Android
- ✓ Requires Android 6 or later
- ✓ At least 104 MB of storage space is required

##### Features:

- Start/ Stop a ride
- Send patient's details
- Select preferred hospital
- Chat with hospital
- Display patient's health parameter

#### 4.4. DESKTOP APPLICATION SPECIFICATION:

- ✓ Compatible with Windows
- ✓ At least 30 MB of storage space is required

##### Features:

- Display patients' real time health parameters
- Track the live location of an ambulance
- Chat with ambulances
- Transfer patients to other hospitals
- Get the patient records as pdfs
- Add/remove hospitals and devices to the system

\*\* This is a product designed for the project LiveRay. To get more information about the project, refer to this [link](#).