

USER MANUAL

FRONTIER X

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1. Setting up the Frontier X App on your Phone

- Install the Frontier X app on your device from either the [Google Play Store](#) or the [iOS App Store](#), depending on your device.
- Once installed, open the App & create a Fourth Frontier Account.



3. Once you submit the required details, you will receive a verification email. The app can only be used once you verify your email.

Note: If you do not receive the verification email, please reach out to us at support@fourthfrontier.com

2. Switching On & Connecting your Phone to the Frontier X

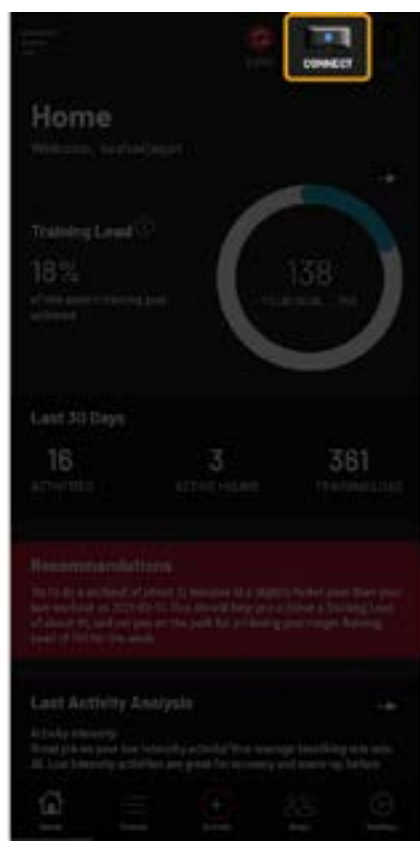
Video : [Getting Started with Frontier X](#)

1. When you unbox the Frontier X for the first time, you need to press down on the Red Button for 6 seconds, and then let go. You will now see the red, blue and green LEDs light up on top of the device, and then the screen will come on and show you the logo. Once the device has been activated for the first time, you only need to press the button once to start the device. After five minutes of inactivity, your Frontier X will go into sleep mode to save battery.
2. Charge your Frontier X up to at least 50%, if it's not charged already.
3. Once charged, disconnect the Frontier X from the charger.

Warning: Do not proceed with the steps below without following Step 2 & Step 3 as it will lead to a device malfunction.

Video : [Pair your Frontier X with your phone app](#)

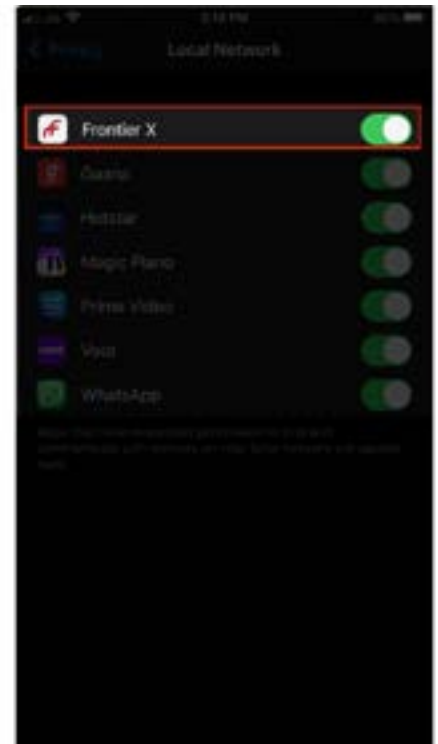
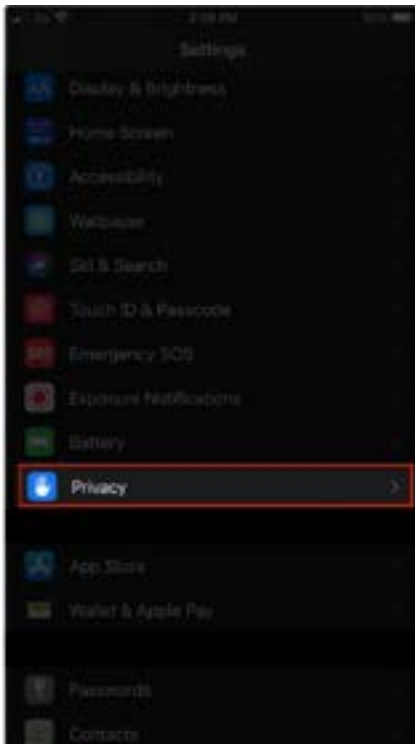
4. Press the red button on your Frontier X once, and the color display on the device will come on, and show you the current time, followed by a summary of your last Workout, and the device Mac ID, as well as battery and memory percentages.
5. After this, the display will go dark, and the device will show a blinking blue light for the next 5 mins. As long as the device is flashing blue, you can connect the device to the mobile app.
6. While the device is blinking blue, go to the Home Screen of the Frontier X app and click on "Connect" on the top-right corner of the app.
7. Select the device ID of your Frontier X to connect with it.



8. Once the device is connected, the blue blinking light will turn into a green blinking light. Now you can wear the device and use the app to start recording, generate an ECG report in pdf format, or live-stream your ECG on your mobile phone.*

Note: With the introduction of iOS 14, Apple devices now ask for the user's permission before connecting to a local network. In case your iPhone, iPad etc. uses iOS 14, please follow the steps below:

1. Go to Settings > Privacy > Local Network
2. Turn the switch for Frontier X on.



3. Wearing the Frontier X

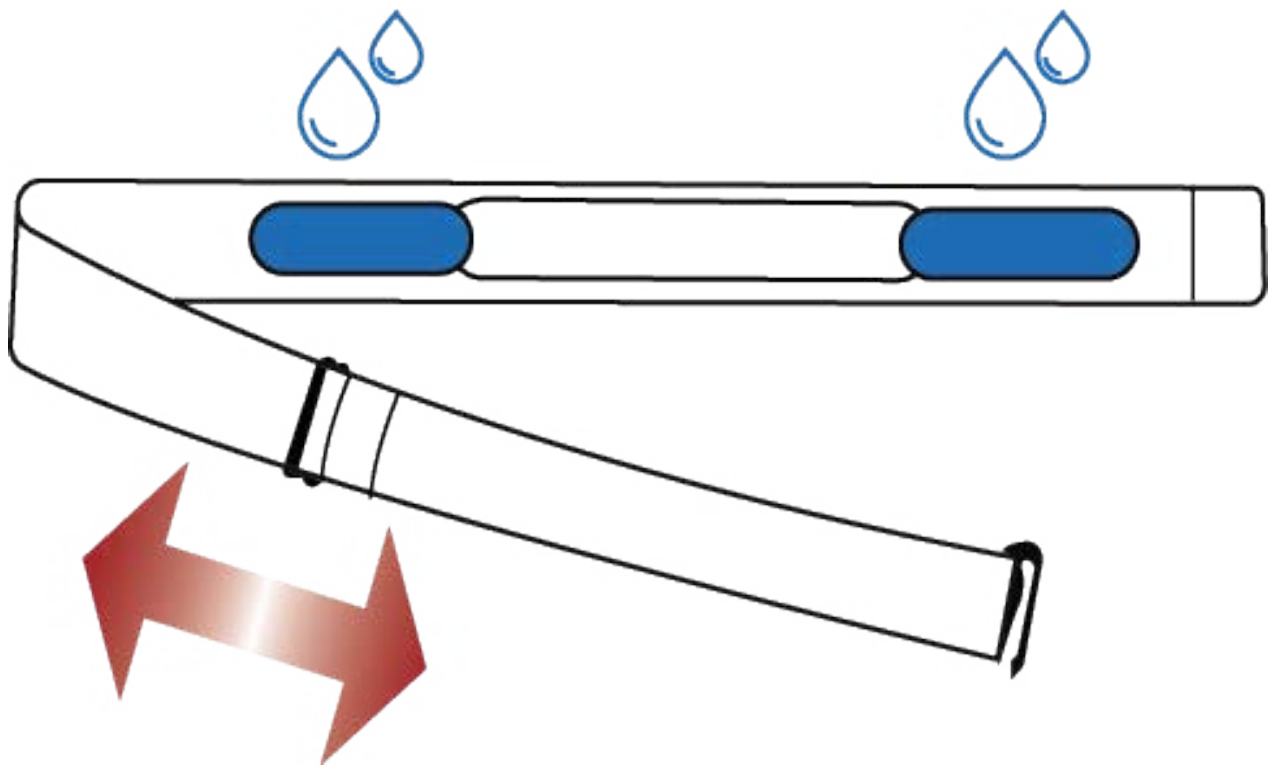
The steps to wear the Frontier X correctly are outlined below:

- Before using the Frontier X for the first time, locate the black plastic protective inserts inside the metallic electrode socket on the Frontier X strap. You will need to remove these inserts for optimal performance. If the inserts are not present, please proceed to Step 3.
- To remove these inserts, use a sharp tool like a safety pin to carefully pry out the insert on both sides.

You can view the video below to understand this process better:

Video : [Preparing your Frontier X Strap](#)

3. Next, align the electrodes on the Frontier X with the sockets on the strap and firmly press together until you hear a click.
4. Apply some water on your skin and the shiny electrode patches on the strap, to ensure good signal quality during your workout



5. Now wear the strap while ensuring that the button of the device is facing down, and the device is located right in the middle of your chest. When worn on the chest, the strap should feel tight, but not uncomfortable. Make sure that the shiny electrode patches on the undersurface of the strap are in contact with your skin.
6. If the weather is cold and dry, and if you are wearing a shirt not made of cotton, please spray some anti-static on the strap and on the inside of your shirt, after you are wearing your Frontier X.
7. Test the signal quality before you start your workout, by live-streaming the ECG on our mobile application. The ECG quality should look something like this:



8. Once you have verified the signal quality, start your recording from the app, or by double-clicking the red button on the Frontier X.

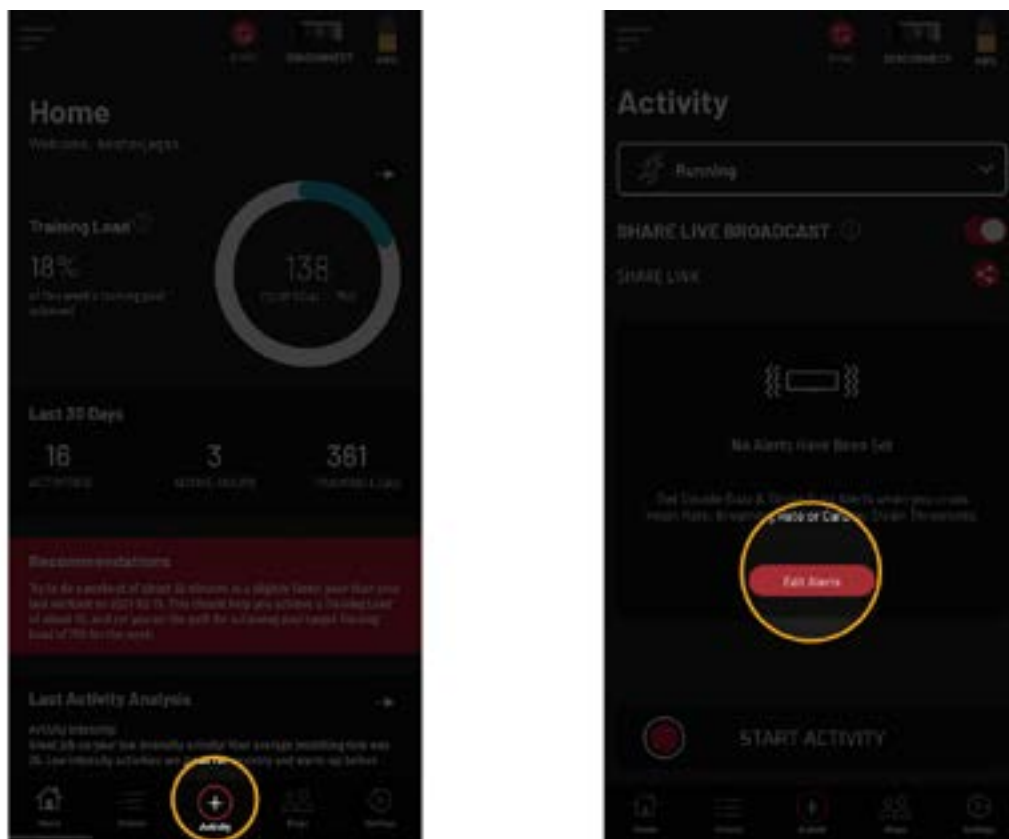
You can also view the video below to understand the process better:

Video : [How to Wear the Frontier X](#)

4. Setting your Alert levels

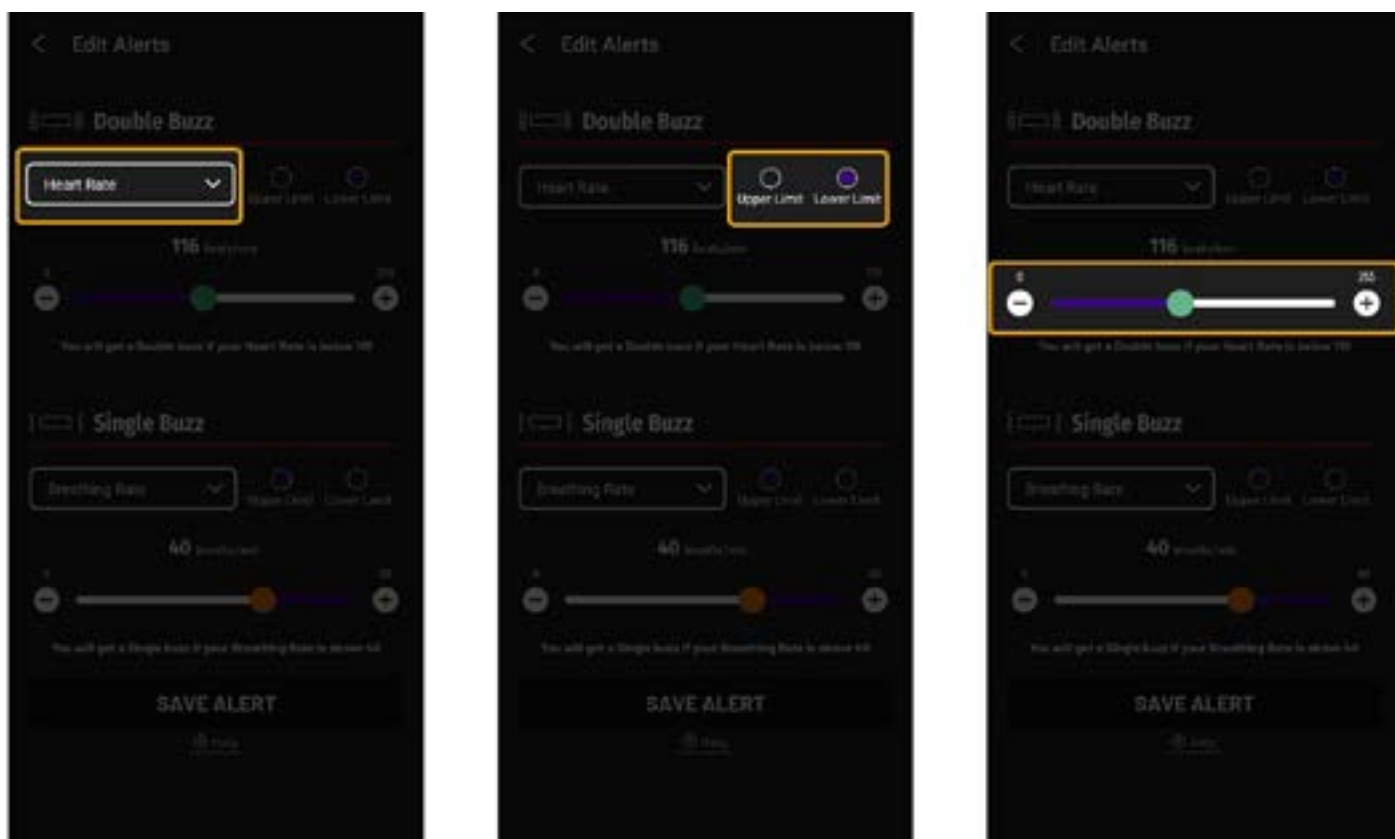
Video : [Setting your Alert Levels](#)

1. Once you are wearing the Frontier X, and it is connected to the mobile application (blinking green), select the “Activity” button on the tab at the bottom of your Home screen
2. To edit your alert settings, click on the red “Edit Alerts” button. You can use the vibration alerts (single buzz & double buzz) to help you train within a zone.

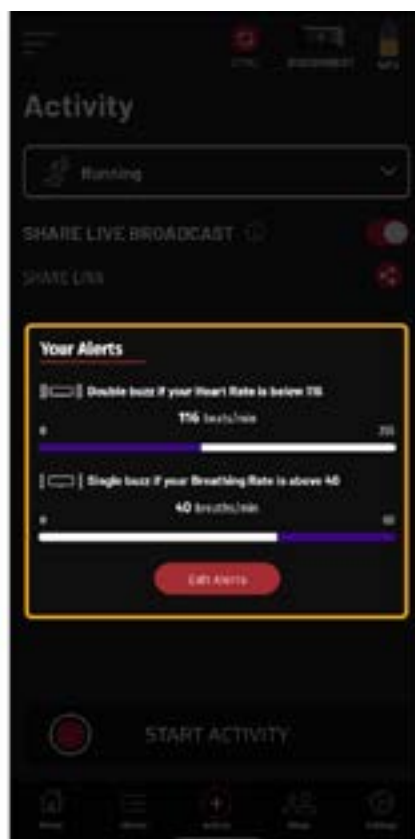


3. For both Double & Single Buzz, you can set up the following:
 - Choose a parameter for which you would like to receive the respective alert. You can now choose between Heart Rate, Breathing Rate or Cardiac Strain.
 - Decide whether you would like this limit to be an upper or lower limit.
 - By choosing an upper limit you will get a buzz every 20 secs when you are above the upper limit threshold

- By choosing a lower limit you will get a buzz every 20 secs when you are below the lower limit threshold
- Specify the threshold value with the slider, above or below which you will receive a vibration alert.
- Repeat the steps for the other alert. You can also choose to set one alert or none at all.



4. “Save Alert” once you are happy with your alert settings.
5. On the “Activity” screen you will see a quick view of the alert settings



Note: Each individual should determine their optimal alert settings by training with the device. Refer to <https://fourthfrontier.com/pages/zoning> for example alert settings that could help you get started.

5. Recording a workout

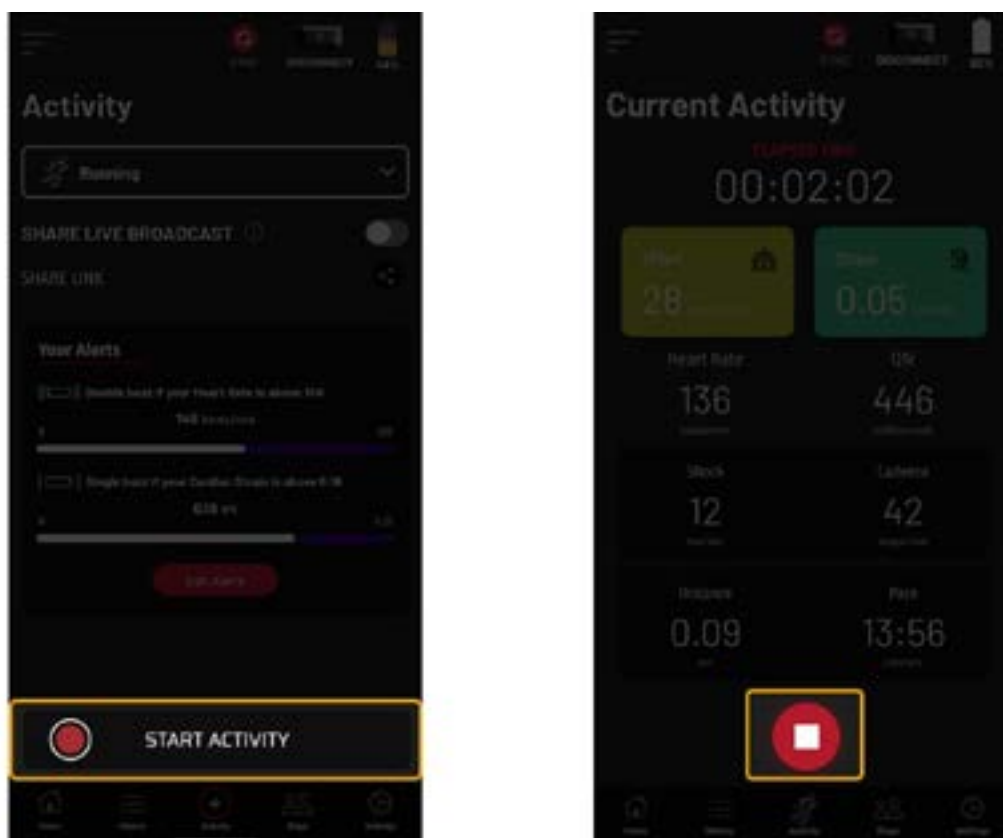
If you are working out without your smartphone or smartwatch, follow the steps below to record a workout:

Note: Carrying your Smartphone while the Frontier X app is connected to the device will allow you to view your Frontier X data in real-time, as well as collect GPS data during outdoor activities.

1. Simply double-press the red button on your Frontier X device to start. You will feel a buzz, then the display on your Frontier X will read “Recording Started.” Your Frontier X will blink red when it is recording.
2. To stop recording, double press the red button and you will feel another buzz. The display will show the words “Recording Ended”. The red blinking light will now stop.

If you are working out with your smartphone or smartwatch, you can also start a recording on the external device:

1. Connect your Frontier X to the app on your smartphone or smartwatch. A successful connection will be indicated by a blinking green light on the device.
2. In the Fourth Frontier app, navigate to the “Activity” page and press the “Start Workout” button. The device will buzz you to confirm that the recording has started.
3. To stop the recording, go to the “Current Workout” page, and click on the red “Stop” button. The device will buzz you to confirm that the recording has stopped, and the LED on top of the Frontier X will stop blinking red, and start blinking green instead.



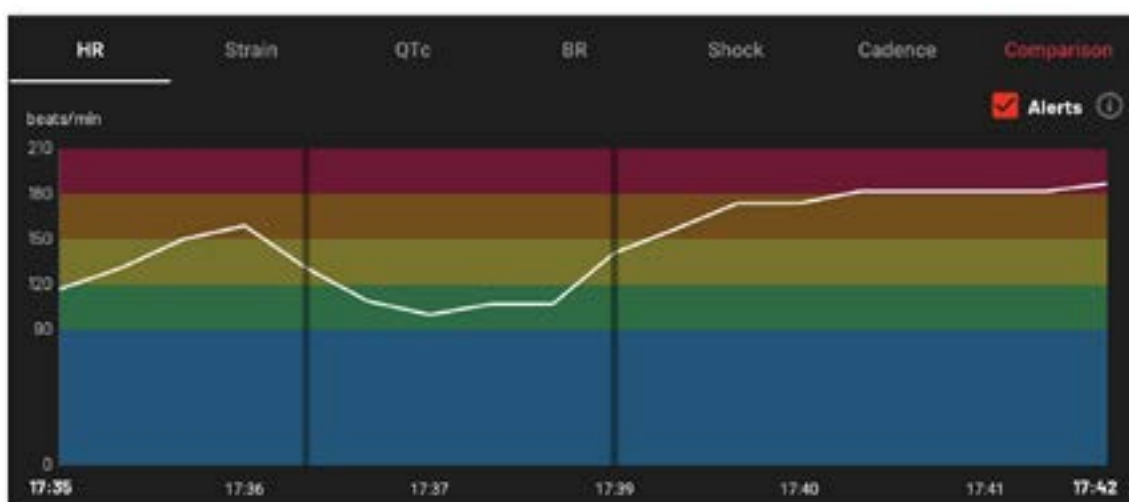
To quick start your activity recording on the Frontier X:

1. Simply double-press the red button on your Frontier X device. You will feel a buzz, then the display on your Frontier X will read “Recording Started.” Your Frontier X will blink red when it is recording. Your activity type and alert settings will be exactly the same as that of your previous workout.

Note: You can record a session on the Frontier X with or without transferring the data on it to the mobile app or the cloud as long as the memory on your Frontier X is not full. However, to view workout summaries on the app or to view the detailed web report, you would need to transfer the data on your device.

6. Marking an event during your workout

1. The purpose of recording events on your Frontier X is to bookmark specific moments in your workout when you were starting or stopping laps, or when you felt significant exertion or an unusual amount of strain on your heart.
2. To mark an event during your exercise session, press the red button on your Frontier X device one time.
3. The recording will continue, but later you will be able to see the events you marked on the Fourth Frontier app, on your Activity Summary Graphs, in the form of vertical black lines. (More information can be found in Article 8: “Viewing the Activity Summary & Graphs on the Mobile App”.)



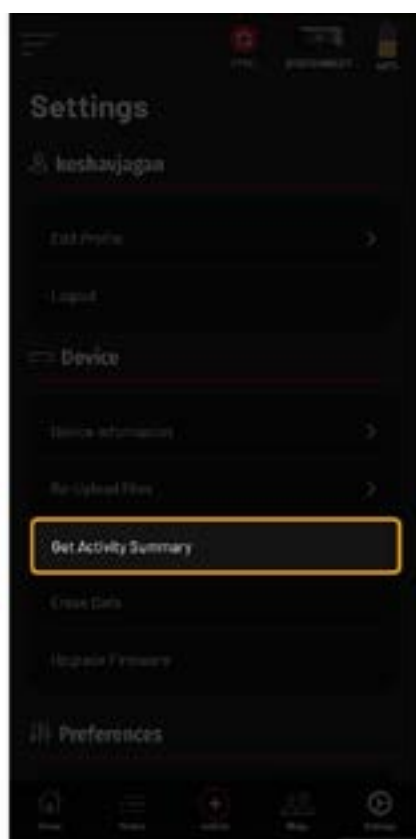
7. Viewing real-time data of your workout

1. To view data during your workout, connect your app to Frontier X, and then navigate to the Current Activity screen, by selecting the “Activity” button on the Home tab.
2. If the device is already recording when you connect your app, it will automatically navigate to the Current Activity screen, and you will be able to see your values updating every 20 seconds.

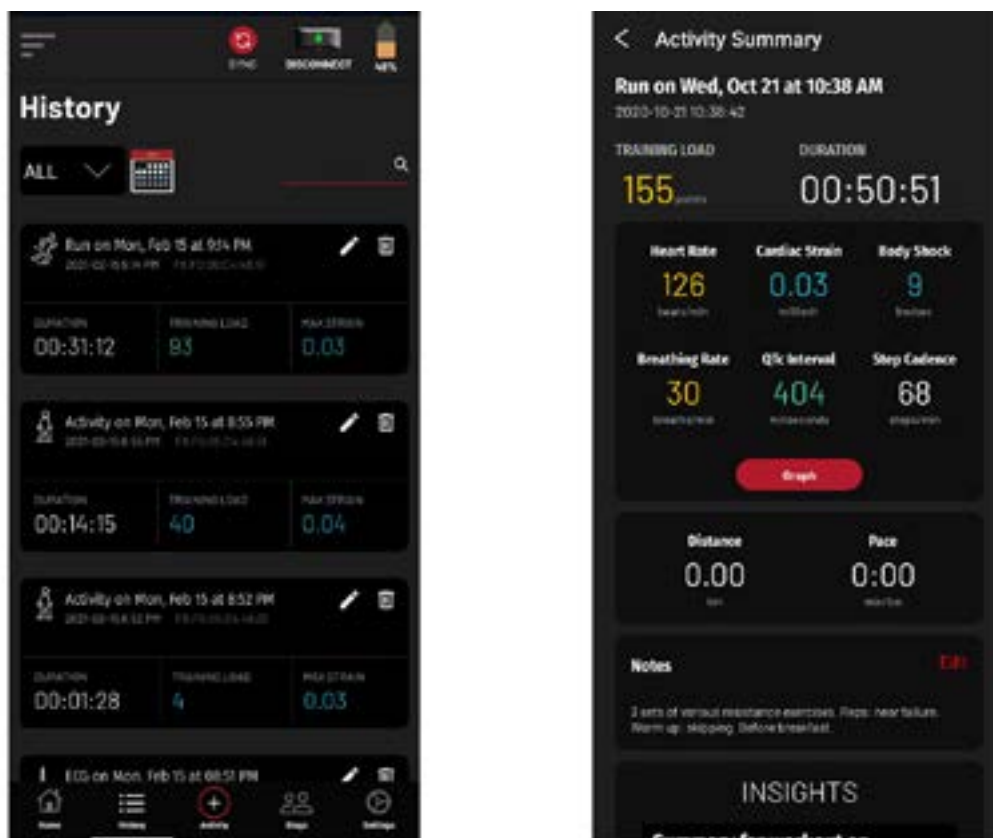


8. Viewing the Activity Summary & Graphs on the Mobile App

1. After your workout, when you connect the Frontier X device to your mobile app, it will automatically prompt you to sync the data to the phone. If this automatic prompt does not appear, go to “Settings” in the right-bottom corner of the app and select “Get Activity Summary”.



2. Once the syncing process starts, you will need to wait 10 to 15 seconds for data to be saved onto your phone. Once the sync is complete, you will be redirected to the History page.
3. On the History page, you will be able to view summaries of all of your recorded workouts.
4. When you click on a particular workout, it will show you the “Activity Summary” of that particular workout.



Note: The section labelled “insights” may be empty if you haven’t synced your data from the Frontier X to the Cloud. To sync your data, refer to [Syncing Data from the Frontier X to the Cloud](#).

- To view the timeline graph, click on the red “Graph” button below the average values of the physiological metrics. This will open up the detailed graph of your workout, where you can switch between tabs to see how the different parameters varied over time, or compare them in the “Comparison” view.



6. Enable the alerts checkbox in the top right corner to view the alerts you received during your workout. Click on the “info” icon in the top right corner to learn about the different types of alerts.



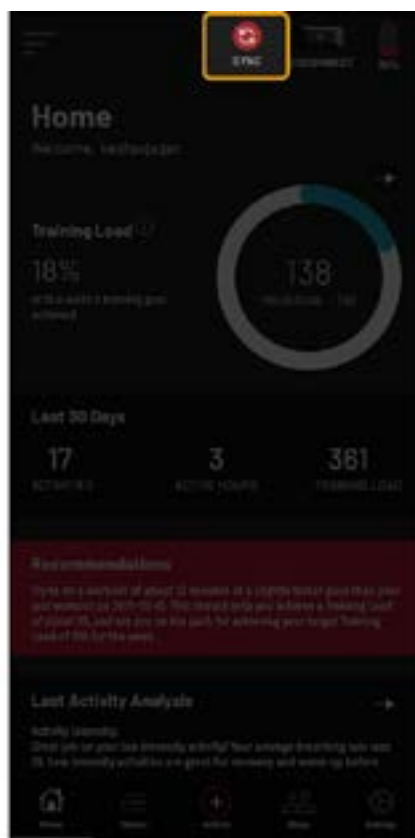
9. Syncing Data from the Frontier X to the Cloud

To view the complete ECG data and receive insights of a workout recorded on your Frontier X, you need to sync the data on your Frontier X to the cloud.* To do so:

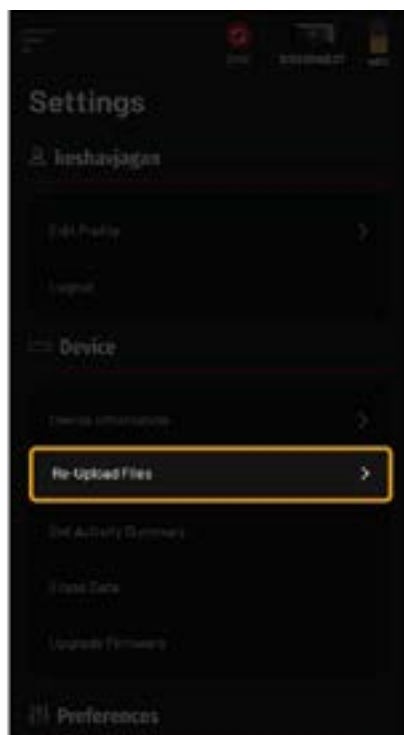
1. Ensure that your Frontier X is charged up to at least 20% before initiating a Cloud transfer and downloading your data over Bluetooth.
2. Connect the Frontier X to the phone app.
3. Go to “Settings” on the Frontier X app.
4. Under the “Device” section, click on “Sync via Bluetooth”
5. Your data will sync successfully.
6. Once done, you shall receive an email and a push notification on your phone informing you about a successful data sync. Post this email/notification, visit your web dashboard and all your data should be visible.

Alternatively, you could also follow the steps below to initiate a Data Sync over WiFi:

1. Ensure that your Frontier X is charged up to at least 20% before initiating a Cloud transfer, and downloading your raw data over WiFi, otherwise plug your device into charging before commencing the WiFi sync process.
2. To download raw ECG data recorded during a workout from your Frontier X, select the “Sync” button in the top right corner of the home screen, next to “Disconnect”.*



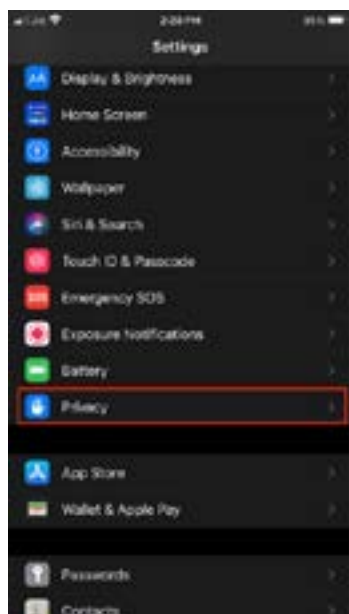
3. The app will now prompt you to connect to an access point starting with “4FAP”. Select OK to connect to this access point.
4. After you select “OK”, the file will be fetched over WiFi and stored in your phone’s file system. The file will next be uploaded automatically to the Server, and you will receive an email indicating that your detailed report is available at app.fourthfrontier.com in 3-4 mins.
5. If the file did not get uploaded due to network issues, you can select “Re-upload Files” under “Settings” at any point later, and click on the upload icon next to the file name that you would like to upload. The file names are stored in the format YYYYMMDDHHMMSS_email.bin, where the date and time correspond to the time at which you initiated Sync Data.



Note: Please turn off your VPN before proceeding with the WiFi sync.

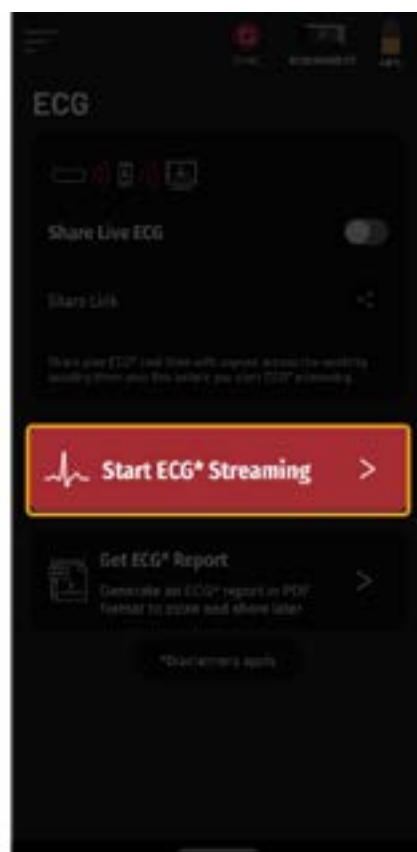
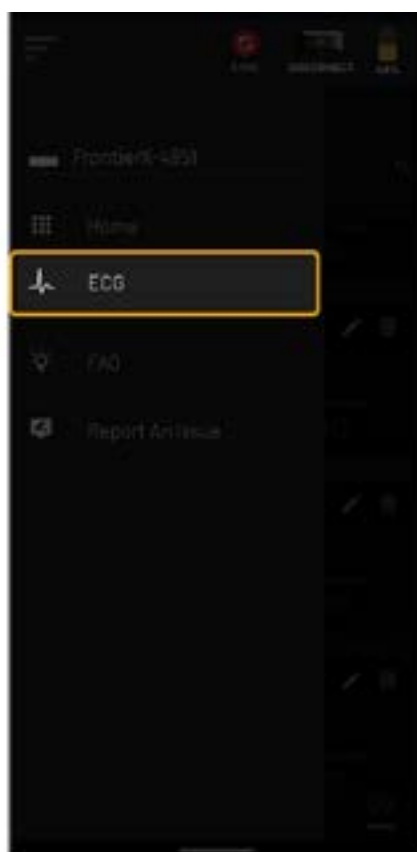
Note: With the introduction of iOS 14, Apple devices now ask for the user's permission before connecting to a local network. In case your iPhone, iPad etc. uses iOS 14, please follow the steps below:

1. Go to Settings > Privacy > Local Network
2. Turn the switch for Frontier X on.

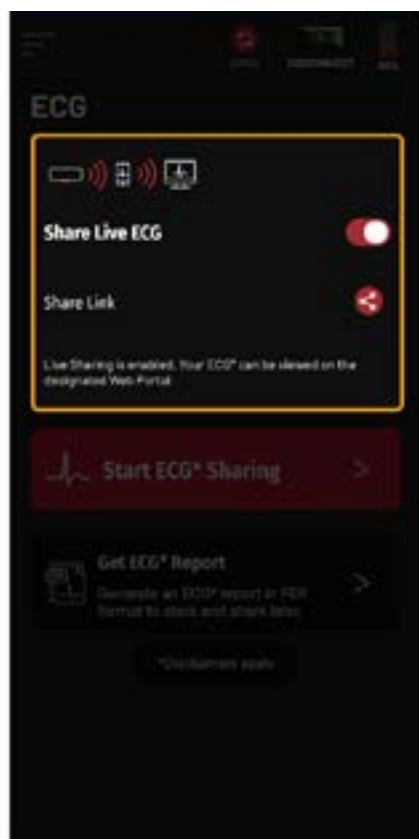


10. Live-streaming your ECG

1. To live-stream your ECG to your mobile phone, select the Menu sidebar. Click on “ECG”.
2. If you would like to stream your ECG to view yourself, click on “Start ECG Streaming”. You can exit ECG streaming by selecting Back.*



3. If you would like to share your ECG in real-time with anyone across the world, enable “Share Live ECG” and share the link with an expert or family member via email or any other means. Now, when you select “Start ECG Sharing”, your ECG would be streamed to any part of the world and can be viewed at the URL you shared.

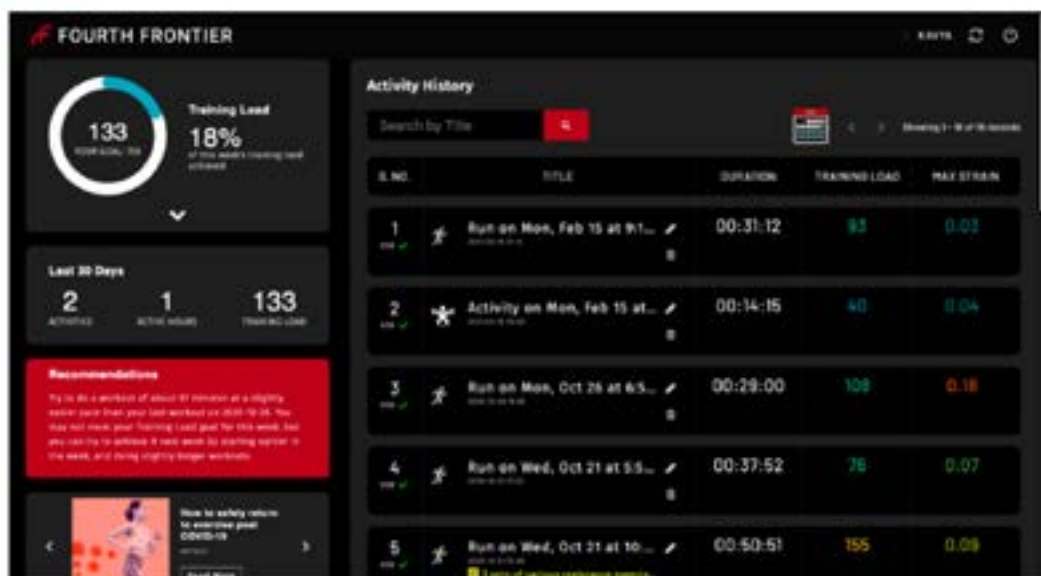


11. Generating an ECG Report

1. To generate an ECG report in PDF format, in your Fourth Frontier app go to the Menu sidebar and select ECG. Then select “Get ECG Report”. It will take 20 seconds to generate your ECG report.*
2. You can choose to export your ECG report by selecting “Share PDF”.

12. Viewing your data on the Web Application

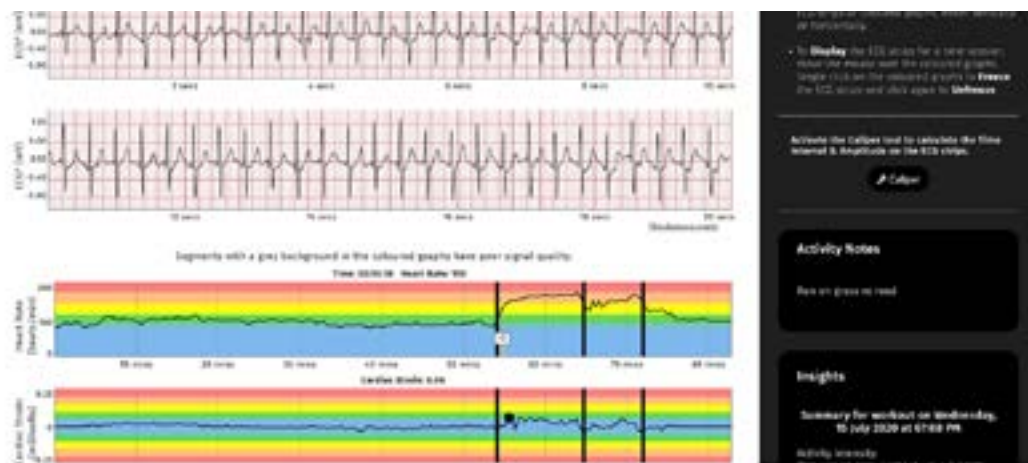
1. Within a few minutes of uploading your data, you will receive an email with a link to your Activity Summary on the Web Application. Click on the link, and then log into your account. You will be redirected to a page like this:



2. From the “Activity History” table on the right, select the workout that you would like to see.
3. On the Activity Summary page, you can scroll through your entire workout data. At the top, you will see all your summary metrics and you can switch between the Average, Maximum and Minimum values of each.



4. As you scroll the cursor over the coloured graphs, you will see the values of HR, Strain, QTc and BR, along with the ECG strip corresponding to the 20-secs worth of data for which the derived values have been computed.* Below you will also see graphs of your Body Shock and Step Cadence.



5. If you have your phone with you while exercising, your workout will contain GPS data as well. You will then see graphs of your speed and altitude as well as a route map, which if you hover over at any point, will tell you the speed, distance and altitude at any point.



6. The WebApp also allows you to measure the time interval between any two points on the ECG graph using the “Caliper” tool. Enable this feature, on the right of the ECG strips, and follow the on-screen instructions.

Learn all about the Frontier X Web Application and making sense of your data from this video:

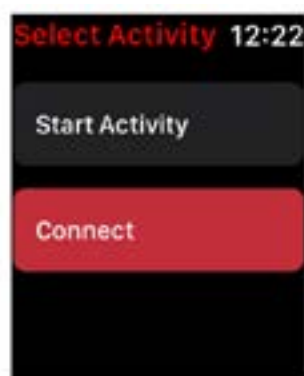
Video : [Frontier X - Making Sense of your Data](#)

13. Connecting your Mobile App to a different Frontier X

1. To connect to another device on your Fourth Frontier app, you will first need to unpair with the device that you had been using. In your app, select the “Disconnect” button on the top-right corner. If your Frontier X has not been used for some time, it may have disconnected automatically.
2. Once you have disconnected from the previous device, you can connect with a new device by selecting Connect. Follow the directions for how to connect your device to your Fourth Frontier app. When a new device is connected, it should blink green.

14. Connecting the Frontier X to an Apple Watch

1. Make sure you have downloaded the Fourth Frontier app from the app store. In your iPhone, go into Watch Settings go to Frontier X, and select the option for “Show app on the Watch”
2. Press the red button on your Frontier X once and make sure it is blinking blue. If Frontier X is connected to your smartphone application, you will need to disconnect from your phone first
3. Now launch the Frontier X app on your Apple watch by clicking on the icon on the Home screen, and then selecting the Fourth Fronti



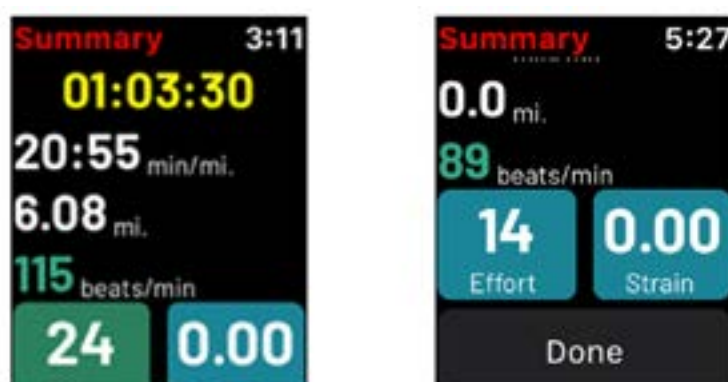
4. Once Frontier X is blinking blue, scroll down on the ‘Select Activity’ page and click on ‘Connect’.
5. You should now see your device ID. Click on your device ID that you’d like to connect to, and you should soon see a notification saying “Device connected”.



6. To start a recording, click on “Start Activity” from the main menu. Your Frontier X should now buzz you and start blinking red to indicate that it is recording. Your values will be updated on the watch screen once every 20 seconds.
7. To stop the recording, you can scroll to the right from the current run screen, and click on the Stop button, or double-press the red button on the device.



8. The current workout screen will now show “Summary” on top, and the timer will stop. You can now scroll down a little and click on “Done” to go back to the main screen and disconnect or start another workout.
9. Disconnect Frontier X from your watch, and sync with your phone to view your data.



15. Connecting the Frontier X to a Garmin

Video : [Using the Frontier X with a Garmin Watch](#)

Update: The heart rate will now update on the Garmin every 2 seconds.

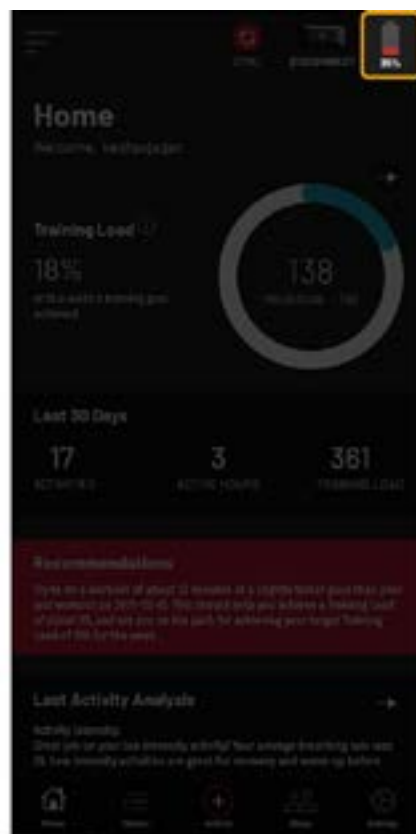
1. Click the button on your Frontier X to wake it from sleep. You will see a blue light blinking on top of the Frontier X if it is ready to pair. If a green light is blinking, disconnect the Frontier X from the device it is paired with to connect with your Garmin.
2. Click and hold the “Up” button on your Garmin watch to go to Settings.
3. Scroll down within the settings menu until “Sensors & Accessories” and select it.
4. Within “Sensors & Accessories”, choose the “Add New” option.
5. Scroll through the options until you find “External Heart Rate Monitor” and select it.
6. Your Garmin will search for the Frontier X. At this point, please check for the blue light on your Frontier X to ensure it is ready to pair.
7. Select your Frontier X on the screen once it appears. Your Frontier X will blink green once it is connected.

How to start an activity using your Frontier X as an external heart rate monitor for your Garmin Watch:

1. To start an activity first make sure your frontier X is paired with your Garmin Watch
2. Double-click the red button on the Frontier X to start the recording on the Frontier X. After this, you will see that it blinks red every few seconds.
3. Then start an activity on your Garmin Watch to record the heart rate from your Frontier X.

16. Charging the device

1. Connect the device to any regular micro-USB charger, using the micro-USB port located on the device. Your device should charge fully in about 3 hours.
2. You can view the battery level on the device screen while the device is charging. Once the battery level crosses 95%, the device is sufficiently charged, and you can disconnect from the charger.
3. Ensure that your Frontier X is charged up to at least 20 percent before downloading your raw data over WiFi. Other functions can be used until the battery level reaches 10 percent.
4. We also recommend connecting your device to a charger when you perform a Cloud Transfer over Wifi, since this process consumes a lot of power.
5. When the Frontier X is paired with the mobile, your Frontier X's battery level appears in the top right of the home screen. When you press the red button on the Frontier X once, the third screen will show you the battery level on the left, and the total memory consumption of the device on the right.



17. Live-stream your Physiological Parameters

You can now broadcast your physiological parameters live during any kind of workout, using the Frontier X device and app.

1. To enable your friends and family to view your live data during any workout, please go to the Activity page of the app and enable the “Share Live Broadcast” option.
2. Share the unique URL with your friends and family which they can open on any web browser.
3. Now you just need to connect your phone to the Frontier X before starting your workout and carry the phone on your workout. Every 20 secs, when your parameters (Effort, Strain, HR, Cadence) are updated on your phone, they will also be sent to a web server, where anyone with your secure link can view your data instantly.



18. Firmware Upgrade

You can now broadcast your physiological parameters live during any kind of workout, using the Frontier X device and app.

1. Firmware is the software that runs on your Frontier X device. If there is a new version of the Firmware available on our server, your device Firmware will automatically be updated when you connect your device to the app, assuming that no recording is taking place at that time.
2. Wait for the progress bar to complete. After this, the device will reset, indicated by a succession of solid blue, red, green, and blue lights, followed by a small vibration.

Note: The device reset may occur 10-30 seconds after the progress bar has completed.

3. Your Frontier X should reset and reconnect automatically to the Fourth Frontier app.

19. Sanitization Procedure

The Frontier X device and strap can be easily and effectively sanitized by using a mild soap solution. This is the preferred method:

1. Sanitize your hands first prior to handling the device
2. Add 3 drops of liquid soap (hand wash soap that is commonly available) to 500 ml of room temperature or cold water, and create a frothy solution
3. Soak the device for 20 seconds, rub the device thoroughly in the soap solution; remove the device, rinse with clean water, wipe with a soft cloth, and shake dry.
4. Soak the strap for 2-3 minutes, rub the strap thoroughly and gently in the soap solution
5. Remove the strap from the soap solution; soak and rub the strap gently for about 20 seconds in clean water to remove the soapy residue, then hang to dry.

If soap is not available at your location, use an alcohol-based sanitizer, such as commonly available hand sanitizer, that contains at least 70% isopropyl alcohol:

1. Sanitize your hands first prior to handling the device
2. Dispense 1 drop of sanitizer on either side of the device; dispense 1 drop into the USB port opening as well; rub device surface thoroughly and gently for about 20-30 seconds with a soft cloth.
3. Set device aside to dry for 2 minutes, then wipe with a clean soft cloth
4. Dispense 5-6 drops into a soft cloth, rub both surfaces of the strap gently and thoroughly for at least 20 seconds to spread the sanitizer throughout the fabric.
5. Set the strap aside for 2 minutes, then wipe with a clean soft cloth.

WARNING:

1. Do not use other chemicals or wipes (that are not soap or Isopropyl Alcohol based)
2. Do not use a washing machine to clean the strap or the device.
3. Do not use abrasive materials (that are not soft lint or cloth) to wipe the device and strap.
4. Do not wring the strap while washing.
5. Do not soak the device for any longer than 30 seconds.
6. Do not soak the strap for any longer than 3 minutes.