

Bittium

HolterPlus™

Patient Instructions
3 Channel Recording Using
5 Electrodes

Table of Contents

1	Delivery Contents	4
2	Starting the Mobile Device	5
3	Starting the Recording	6
3.1	Instructions for 3 channel recording	6
4	During the Recording	11
4.1	Making Diary entries.....	11
4.1.1	Adding symptoms	12
4.1.2	Adding activity time	14
4.1.3	Marking sleep & wake up time.....	18
4.1.4	Viewing diary history.....	21
4.2	Going out	22
4.3	Having a shower	22
4.4	Charging the recorder.....	22
4.5	Charging the mobile device	26
4.6	Checking the electrodes and the cabling	27
4.6.1	Replacing electrodes	28
4.7	Viewing the mobile device instructions	28
4.8	Viewing the battery level or network status	29
5	After the Recording.....	30
6	Troubleshooting.....	31
6.1	Troubleshooting information via mobile device instructions.....	31
6.2	Recorder	32
6.2.1	Recorder does not start, why?	32

Bittium

6.2.2	No signal	32
6.3	Mobile device	32
6.3.1	Battery does not get charged.....	32
6.3.2	Battery drains fast.....	33
6.3.3	Mobile device does not start.....	33
6.3.4	Mobile device does not respond.....	33

1 DELIVERY CONTENTS

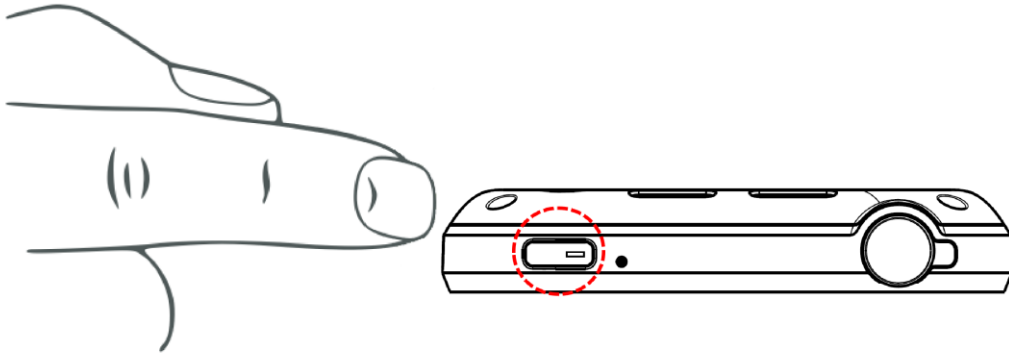
Bittium HolterPlus™ carry case contains the following items:

- Bittium Faros™ ECG recorder
 - USB cable for charging the recorder
- Bittium MedicalSuite™ mobile device
 - Desktop stand for mobile device
- Dual port USB charger
- Electrode cable set for recording
- Electrodes
- Cleaning wipes
- Patient Instructions

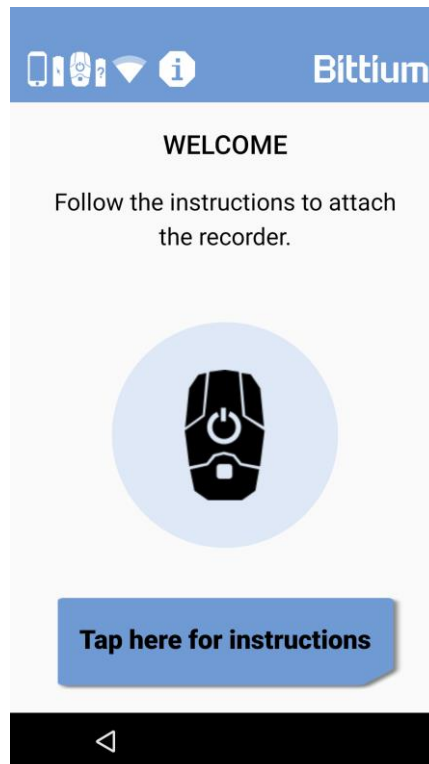
2 STARTING THE MOBILE DEVICE

Start the mobile device before attaching the recorder and the electrodes.

1. Press the power button.



2. Wait for the mobile device to start.
3. Following screen will open:



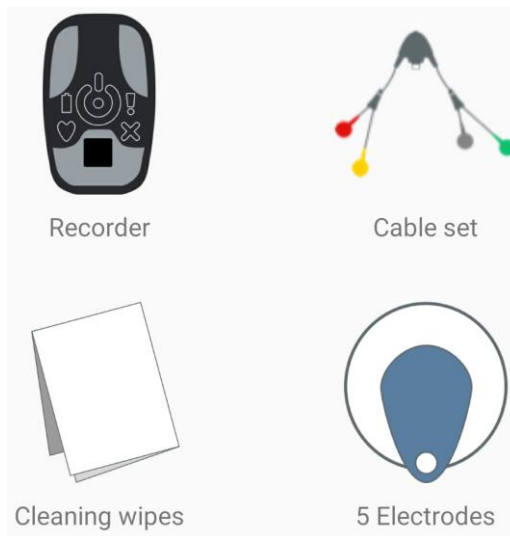
4. Attach the recorder next.

3 STARTING THE RECORDING

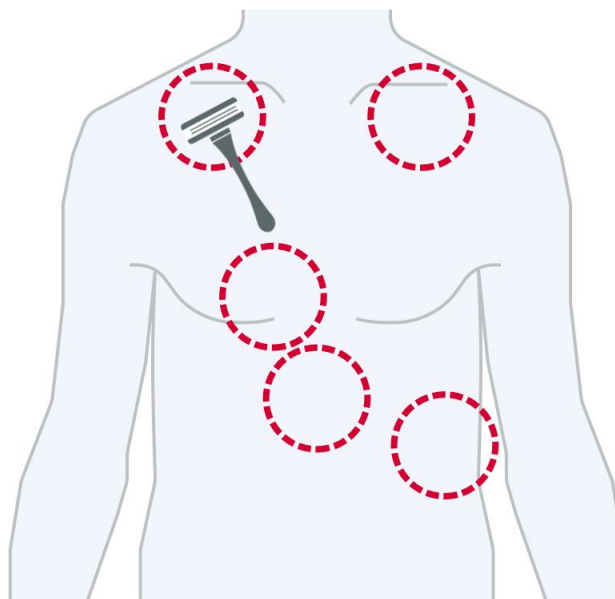
3.1 Instructions for 3 channel recording

This tutorial will give you step-by-step instructions to set up the recording.

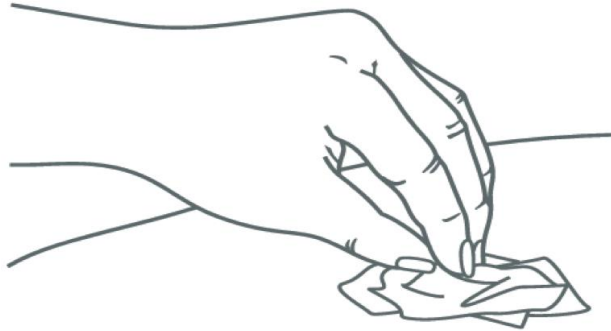
1. Check that you have all the things you need:



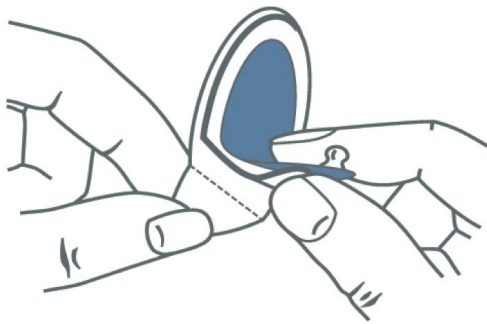
2. If necessary, shave and remove any hairs from the areas shown. Do not use lotions.



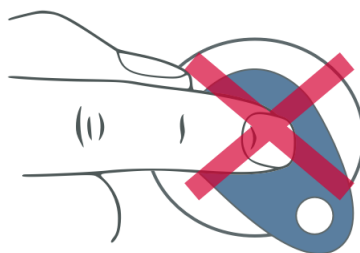
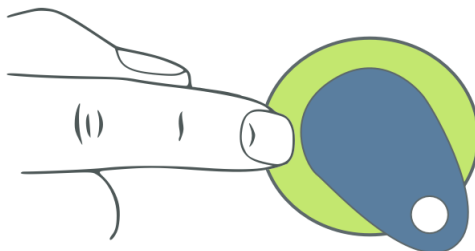
3. Clean these areas with cleaning wipes.



4. Peel of electrode sticker.

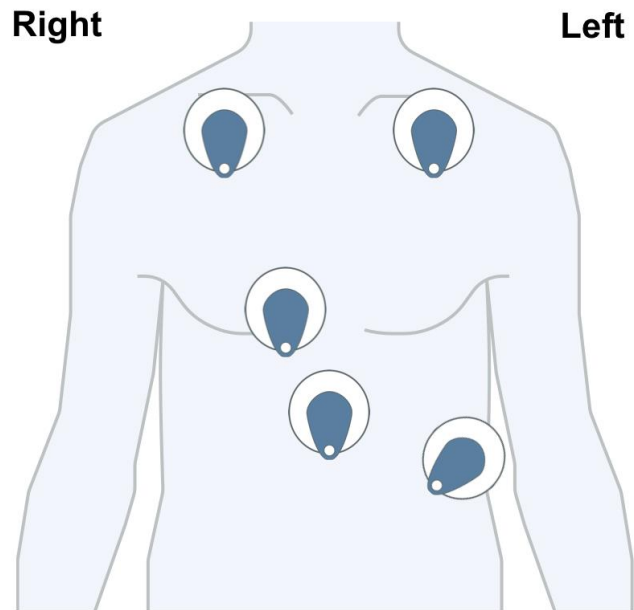


5. When placing the electrode, press all around the sides to attach it properly.

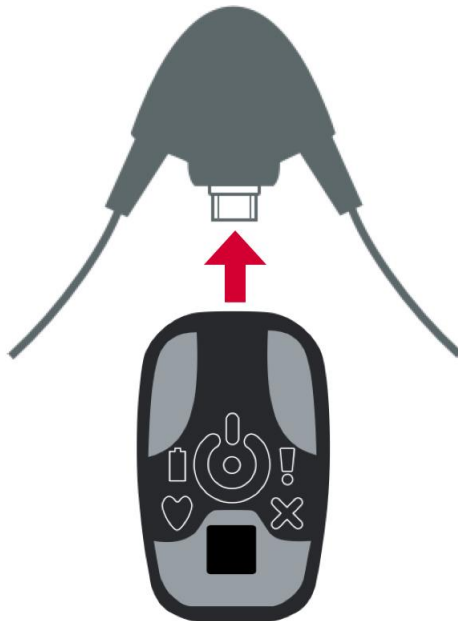


6. Place the electrodes in the areas shown.

Bittium

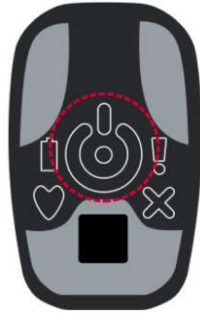


7. Attach the recorder to the cable set.

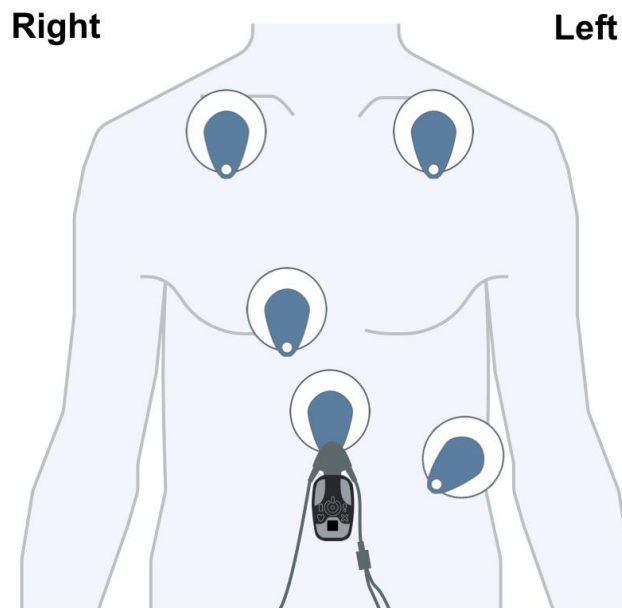


8. Press the Recorder button. A light will blink.

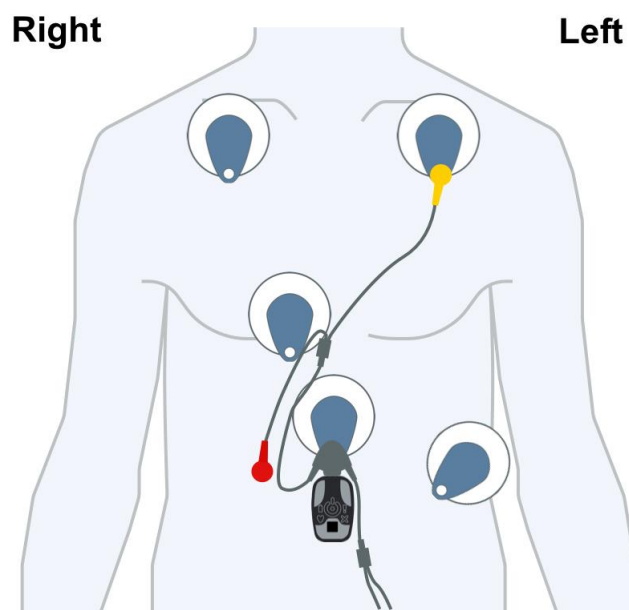
Bittium



9. Attach recorder lead first to the electrode shown.



10. Connect the yellow connector to the electrode shown.

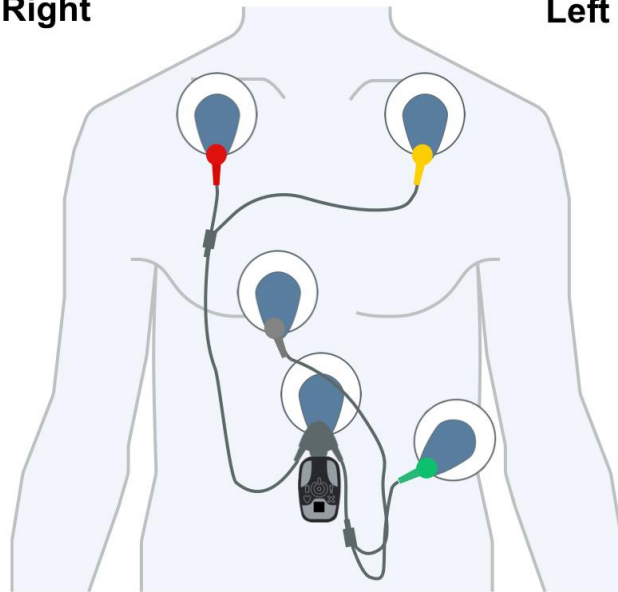


11. Connect the green, grey and red electrodes as shown.

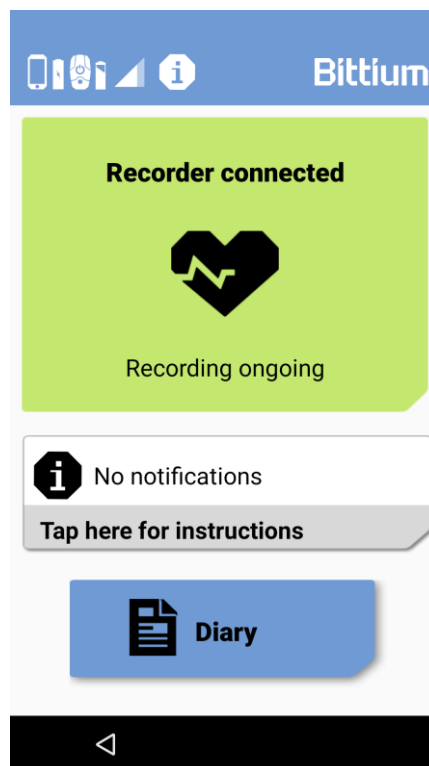
Bittium

Right

Left



Leads are now in place. All done! Wait for the recording to begin. You will see this screen once the recording is ongoing.



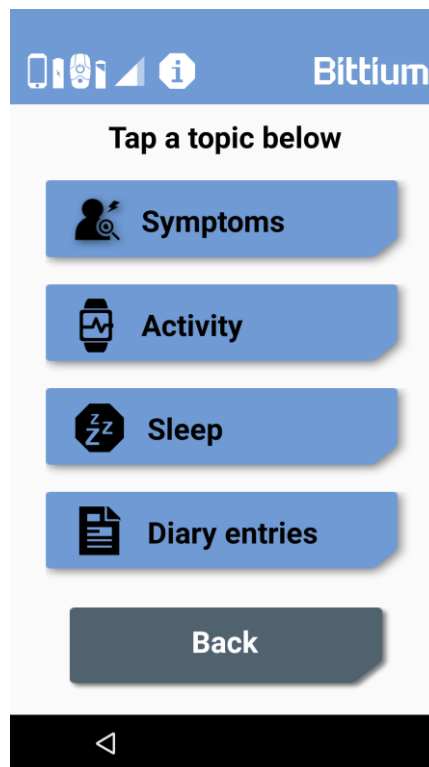
4 DURING THE RECORDING

4.1 Making Diary entries

During the recording you should enter diary markings by tapping the Diary button. These are important for the doctor when he/she analyzes your recording data.

Note that diary entries cannot be deleted, so in case of a wrong entry you can create a new one.

Following screen is shown:

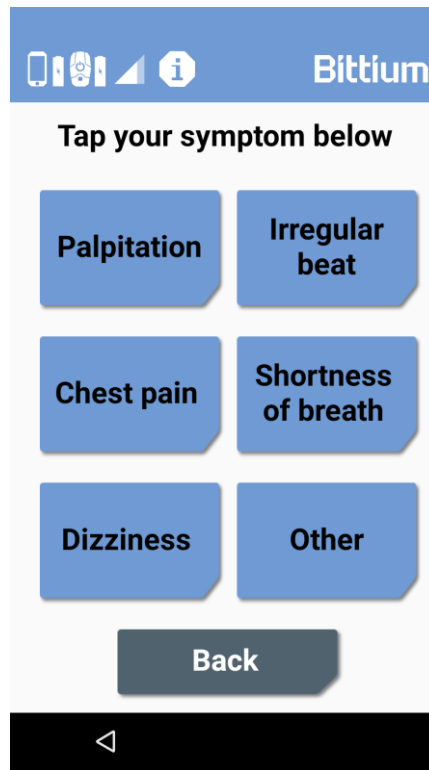


Diary entries are divided to four categories:

- Symptoms, for adding symptoms either by selecting a symptom or describing a symptom yourself
- Activity, for marking times of physical activity
- Sleep, for marking times of sleep
- Diary entries, for viewing diary history

4.1.1 Adding symptoms

To add a symptom, tap the Symptoms button. Following screen is shown:



1. Select your symptom from the list by tapping it. For other type of symptom, tap Other.
2. Enter the date and time when the symptom occurred.

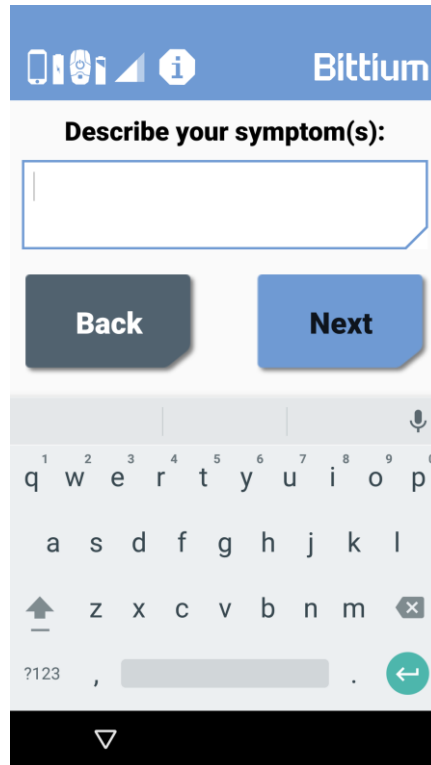
The screenshot shows the Bittium mobile application interface. At the top, there is a blue header with the Bittium logo on the right and standard mobile status icons (signal, battery, notification) on the left. Below the header, the text "Change date and time if necessary" is centered. Underneath, there are two input fields: "Date" with the value "11.3.2020" and "Start" with the value "08:52". At the bottom of the screen, there are two buttons: "Back" (dark grey) and "Save" (blue). A black navigation bar at the very bottom contains a white back arrow icon.

Current time is shown by default, but you can change the date and time by tapping on the date and time to match the start of the symptom.

3. Tap Next. Symptom is now added.

In case you want to add a symptom other than those listed, tap Other.

Bittium

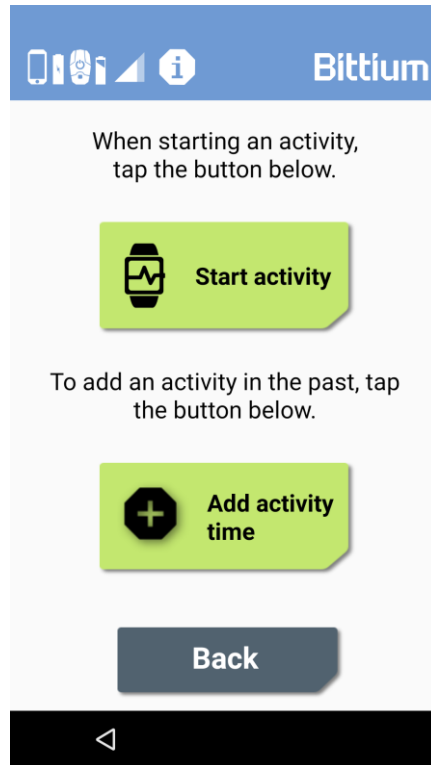


Write what your symptom was and tap Save. Enter then the time and date when the symptom occurred.

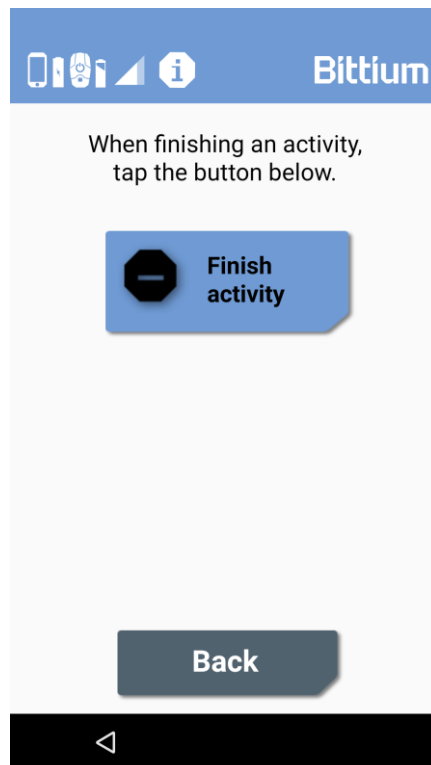
4.1.2 Adding activity time

To add activity time, tap the Activity button. Activity can be any physical exercise like walking, for example.

1. If you are starting the activity, tap the Start activity button.



2. When finishing the activity, tap the Tap here to stop button on the main view or go to Diary -> Activity and tap Finish activity.



3. Confirm or adjust the activity time.

Bittium

Confirm or adjust activity time

Date

28.1.2020

Start

10:46

End

11:50

Back Next

4. Write an optional comment.

Bittium

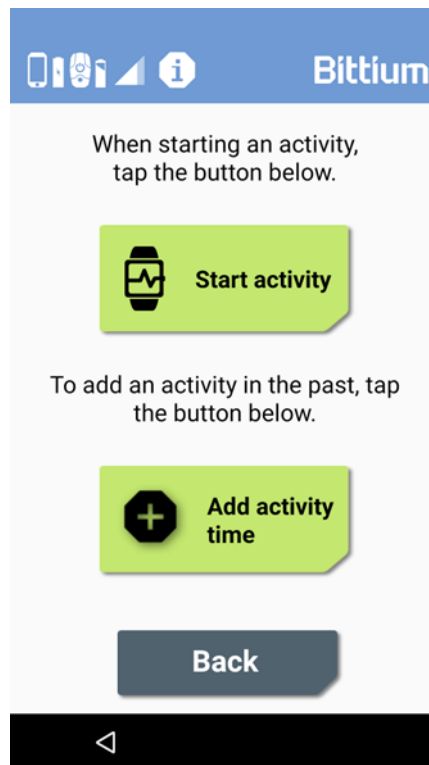
Comment 0 / 50

Optional

Back Save

5. Tap the Save button. A confirmation dialog opens asking you to confirm the information you have entered.
6. Tap OK button. Diary entry is automatically created.

Alternatively, you can enter the activity time in the past afterwards by tapping Diary -> Activity and then tapping the Add activity time button:

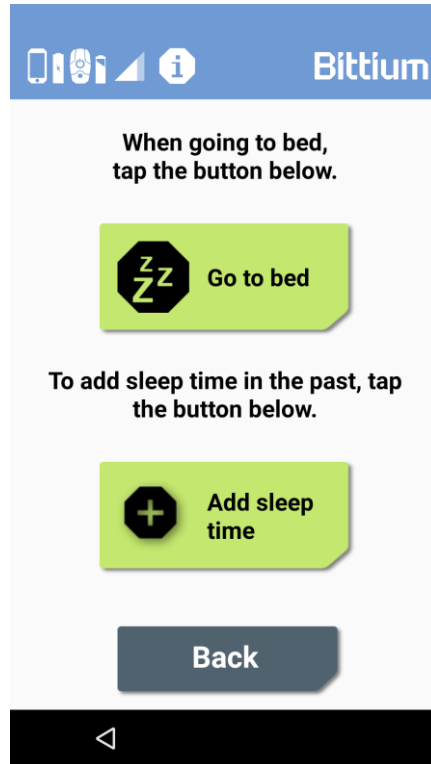


1. Enter the start date as well as the start and end times.
2. Write an optional comment.
3. Tap the Save button. A confirmation dialog opens asking you to confirm the information you have entered.
4. Tap OK button. Diary entry is automatically created.

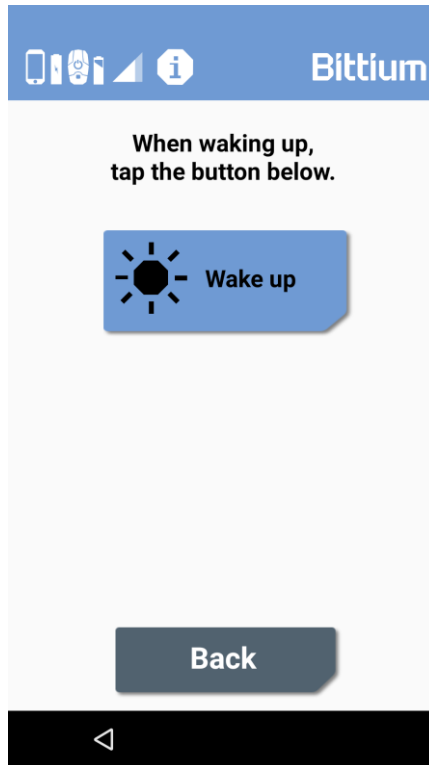
4.1.3 Marking sleep & wake up time

To add sleep and wake up time tap the **Sleep** button.

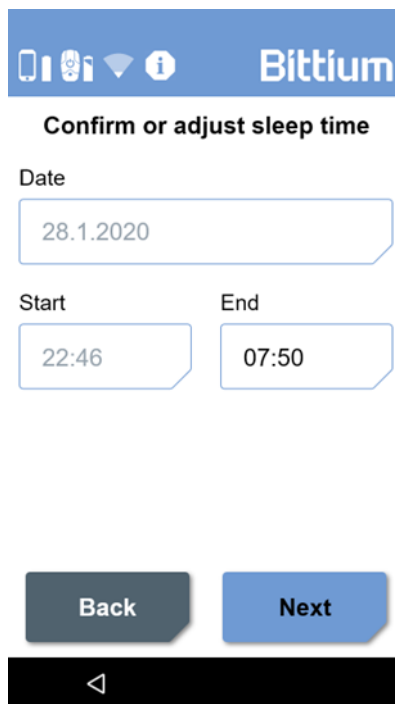
1. If you are going to sleep, tap Go to bed.



2. When you wake up, tap the Tap here to stop button on the main view or go to Diary and tap Wake up.

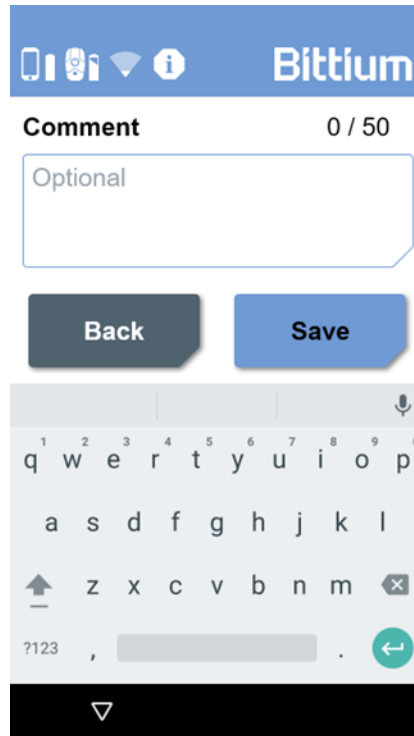


3. Enter the end time.



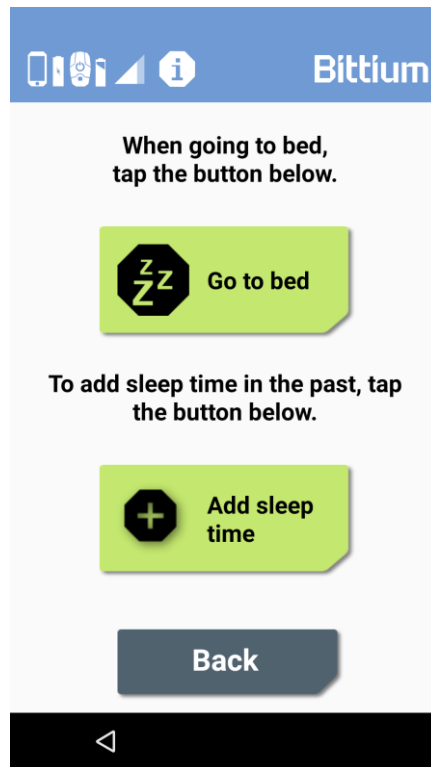
4. Write an optional comment.

Bittium



5. Tap the Save button. A confirmation dialog opens asking you to confirm the information you have entered.
6. Tap OK button. Diary entry is automatically created.

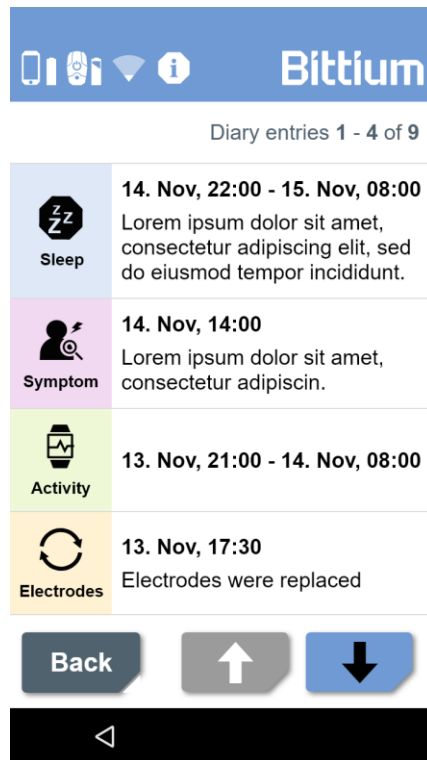
Alternatively, you can enter the sleep time in the past afterwards via Diary -> Sleep and tapping the Add sleep time button.



1. Enter the start date as well as the start and end times.
2. Write an optional comment.
3. Tap the Save button. A confirmation dialog opens asking you to confirm the information you have entered.
4. Tap OK button. Diary entry is automatically created.

4.1.4 Viewing diary history

Tap **Diary entries** for viewing diary history. See an example below.



You can use the Up and Down buttons to scroll the list. Tap Back button to return to previous screen.

4.2 Going out

Remember to keep the mobile device with you when leaving home in order to be able to make Diary entries, if necessary. If you are going for a longer time remember to take the desktop stand with you.

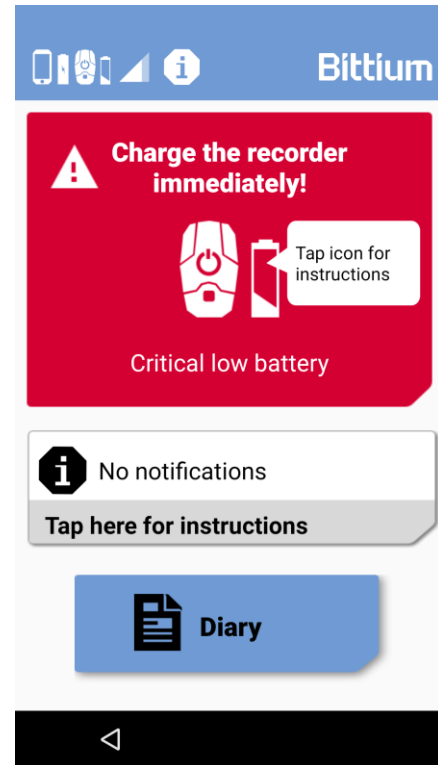
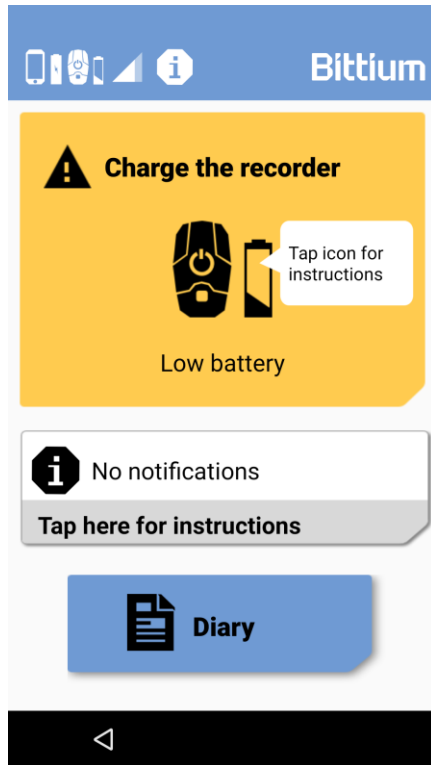
4.3 Having a shower

You can have a shower normally while using the recorder. You cannot go to sauna, however. Note: Do not take the mobile device to shower!

4.4 Charging the recorder

The mobile device will notify you when to charge the recorder. See an example below. When the recorder battery level is extremely low the recorder will start emitting an alert sound.

Bittium



To charge the recorder, follow the steps below.

1. Remove recorder from the electrode.



2. Plug in the charger.

Bittium

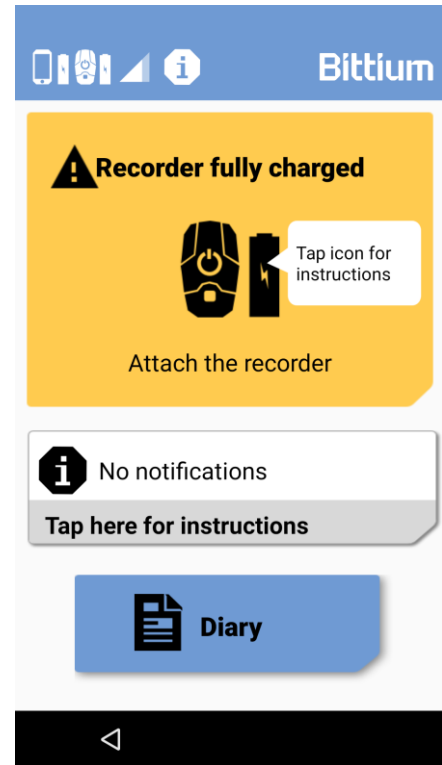
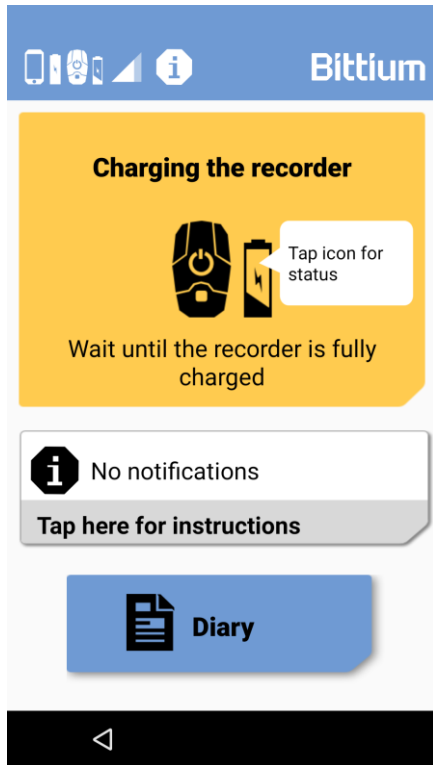


3. Press the recorder button.



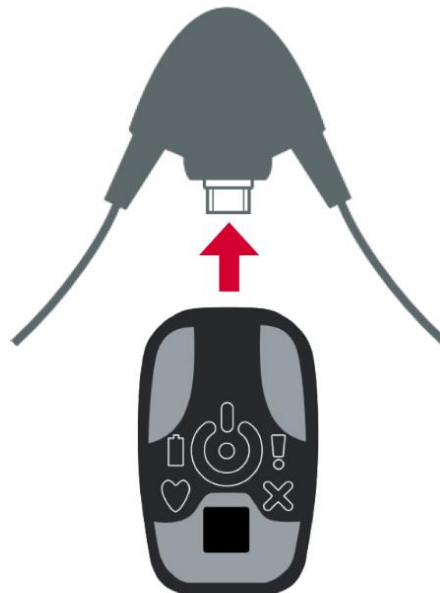
4. Wait until mobile device indicates “recorder fully charged”. The charging takes approximately two (2) hours. Charging progress is shown on the mobile device screen.

Bittium



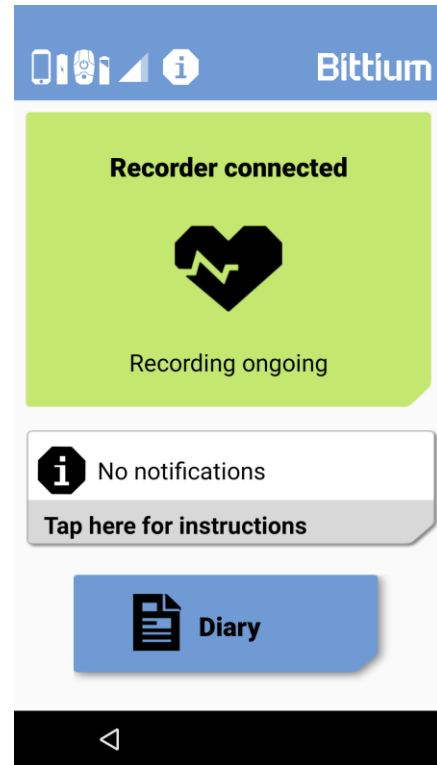
To attach the recorder after charging follow the steps below.

5. Attach the recorder back to the cable set.



6. Press the recorder button. Recording will continue automatically.

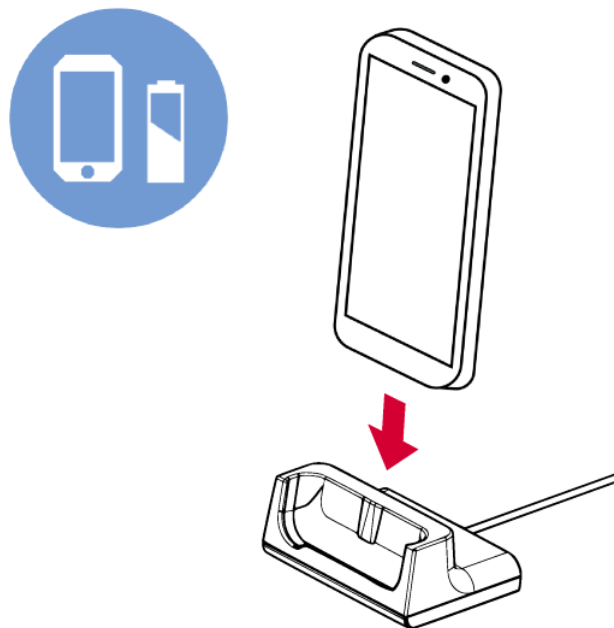
Bittium



4.5 Charging the mobile device

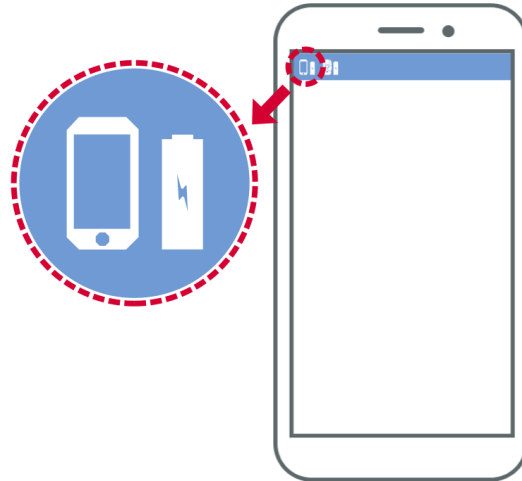
The mobile device will notify you when to charge it.

1. Set the mobile device to the desktop stand. Battery icon appears as half full.



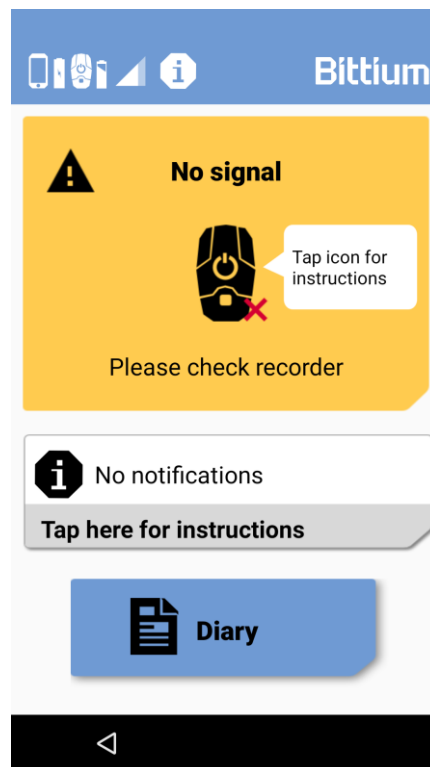
Mobile device is charged when the battery symbol is full on the device display.

Bittium

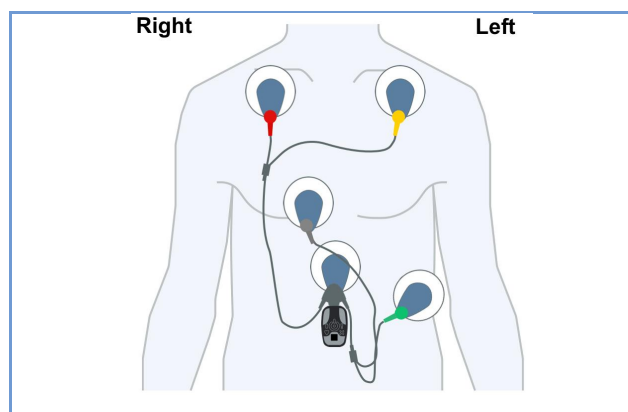


4.6 Checking the electrodes and the cabling

If mobile device shows a 'No signal' warning: Check that the electrodes and cables are properly attached and that the recorder light is blinking. Make sure the recorder is connected properly and press recorder button.



3 channel recording




4.6.1 Replacing electrodes

Mobile device will let you know when to replace the electrodes. Follow the on-screen instructions.

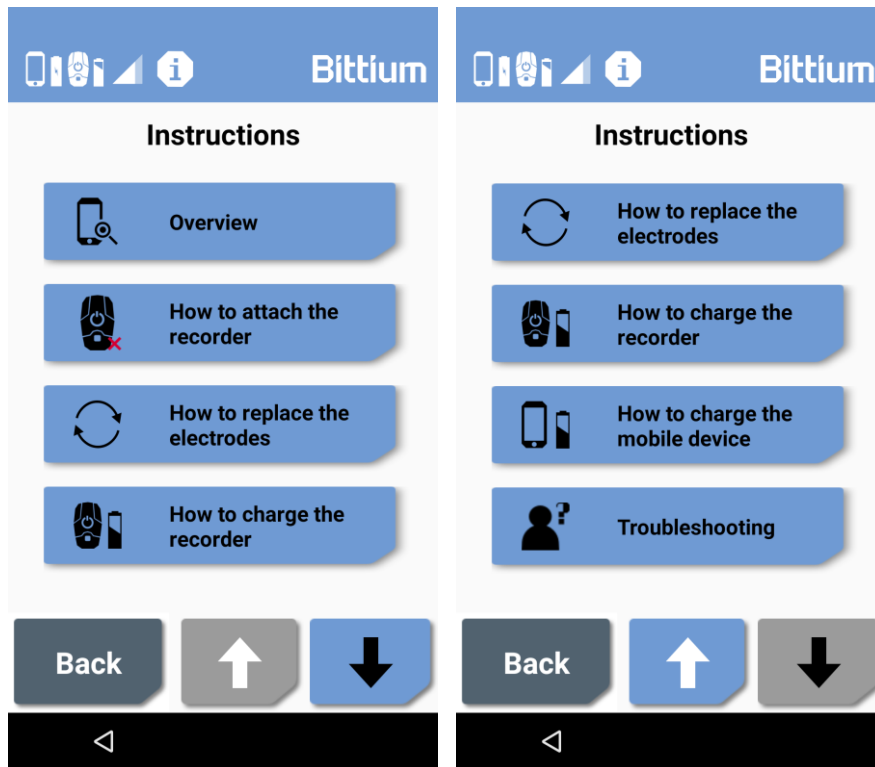
In case an electrode becomes loose or is not properly attached it needs to be replaced. Mobile device has instructions on how to replace the electrodes also under the Info icon. See 4.7. Generally the electrodes should be replaced after 3 days of recording.

4.7 Viewing the mobile device instructions

The mobile device includes also instructions to assist in the daily activities during a recording. The instructions can be accessed by tapping the  icon at the top of mobile device screen.

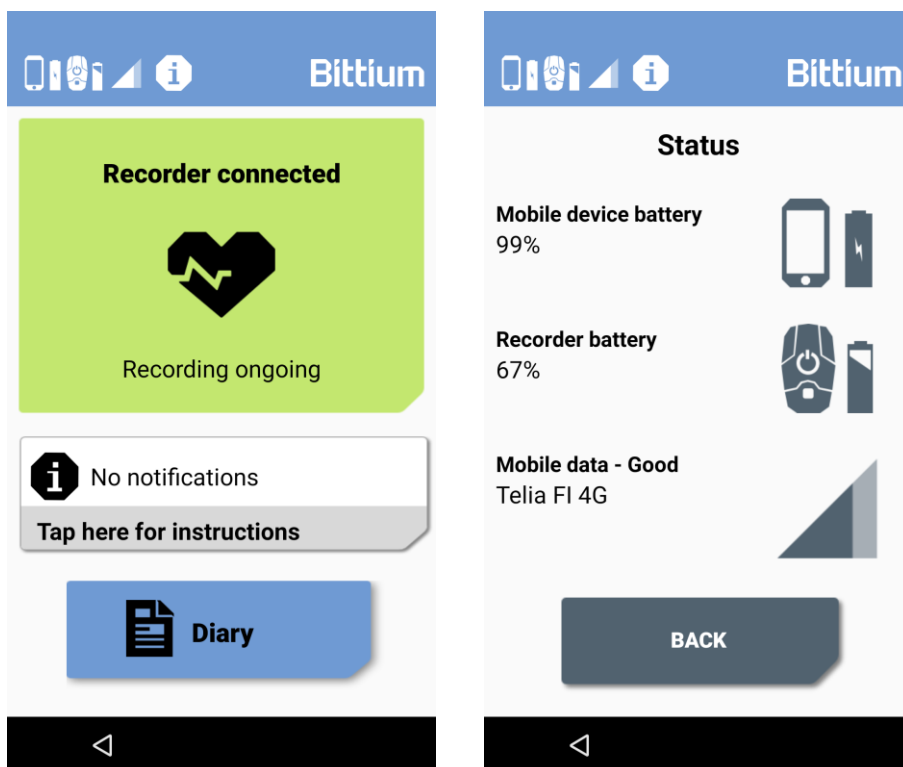
Available information includes instructions for attaching the recorder, replacing the electrodes, charging the recorder/mobile device as well as troubleshooting instructions. See 6.1.

Bittium



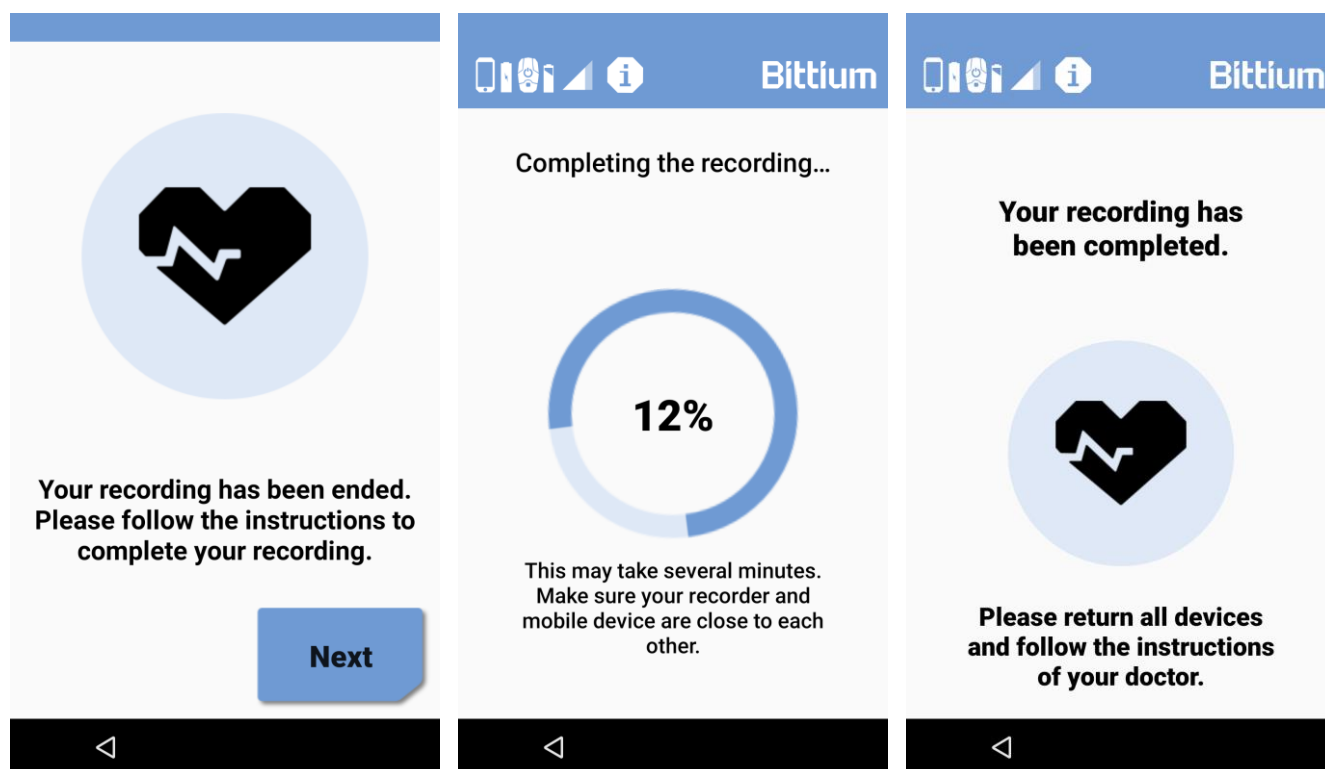
4.8 Viewing the battery level or network status

The mobile device and recorder battery levels as well as the cellular connection or Wi-Fi status can be checked by tapping the icons on the top left-hand corner of the screen:



5 AFTER THE RECORDING

When the recording is ended you will get a notification on the mobile device. Follow the instructions from mobile device to complete the recording.




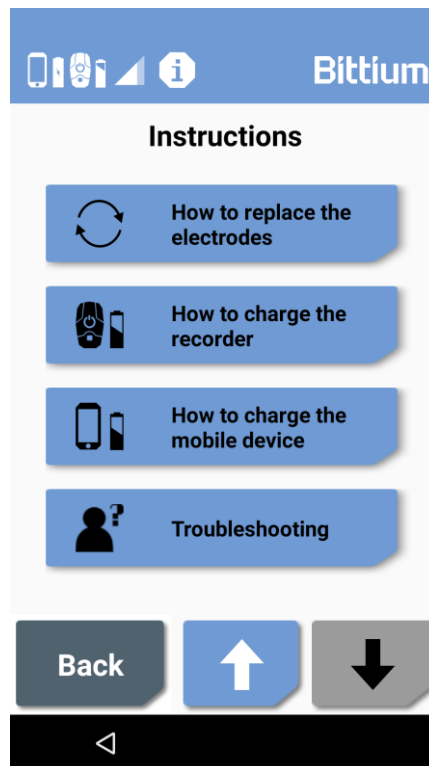
After the recording has been completed follow the steps below.

1. Detach the recorder.
2. Detach the connectors from the electrodes. DO NOT PULL FROM THE CABLES.
3. Remove the electrodes and discard them.
4. Return the carry case together with the devices to the clinic. If the clinic has provided you with instructions, follow them.

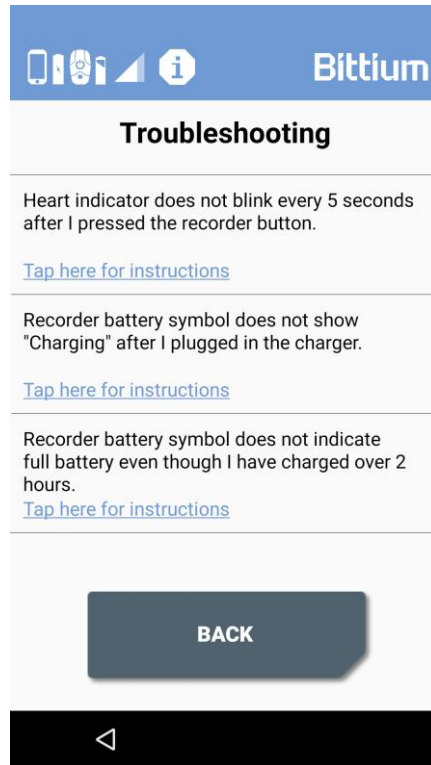
6 TROUBLESHOOTING

6.1 Troubleshooting information via mobile device instructions

Mobile device has a troubleshooting section under Instructions that provides help for some common events that may occur during the recording. You can access this Troubleshooting section by tapping the  icon at the top of mobile device screen. Scroll down the list using the arrow button and tap Troubleshooting.



Following view will open.



Here you can view instructions in case you have any charging-related problems, for example. You can access the detailed information by tapping ‘Tap here for instructions’. Follow then the on-screen instructions.

6.2 Recorder

6.2.1 Recorder does not start, why?

Most likely the battery is empty. Remember to recharge the recorder when the charge recorder notification is displayed.

6.2.2 No signal

See chapter 4.6 Checking the electrodes and the cabling for instructions.

6.3 Mobile device

6.3.1 Battery does not get charged

Inspect the desktop stand for any visual damage. If there is damage do not use it!

Try changing the desktop stand to another one.

Battery may be completely drained. In this case allow a few hours of charging and then try switching the mobile device on.

If the above does not help, ask to replace the mobile device.

6.3.2 Battery drains fast

Keep the mobile device on the desktop stand to charge it continuously.

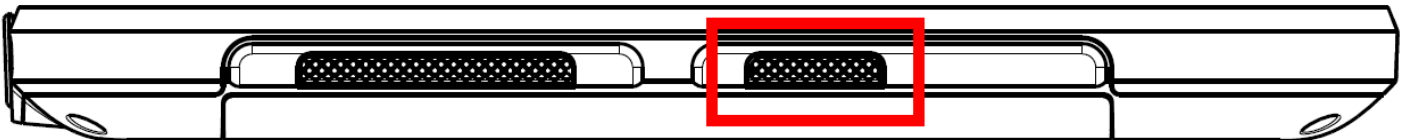
6.3.3 Mobile device does not start

Has the battery been completely drained? If so, recharge the battery. Note that if the battery is drained it may take some time before mobile device can be started.

If the battery is fully charged, but the mobile device does not start the battery may be faulty. Try replacing the mobile device.

6.3.4 Mobile device does not respond

Try waking up the mobile device by pressing the button.



If this does not help, try switching the power off and then on again.



Published by:

Bittium Biosignals Ltd.

Pioneerinkatu 6

70800 Kuopio

Finland

Phone: +358 40 344 2000

www.bittium.com

5800605A03