

Heartwave Use Cases

Use case 1: Configure Heart Wave Device

Actors: Heart Wave device user

Primary Case: Heart Wave device user

Level: User goal

Precondition: The Heart Wave device user wants to configure the Heart Wave device for therapy.

Postcondition: The Heart Wave device user has completed the proper configurations on the Heart Wave device for the user's desired therapy.

Main Success Scenario:

1. The Heart Wave device user turns on the Heart Wave device by pressing the power button, displaying the main menu of the device on the display.
2. The Heart Wave device user selects the "Start New Session" option and presses the OK button, displaying a list of treatment programs on the display.
3. The Heart Wave device user presses the down arrow button to select the desired treatment program and then press the OK button.

Extensions:

- 1a. The Heart Wave device does not turn on due to the battery level being at zero, and will therefore need to be recharged.
- 1b. The Heart Wave device is broken and does not work as expected.

Variations:

- 3a. At any time during this step, the Heart Wave device user can also press the up arrow button while selecting the desired treatment program.

Alternatives:

- The Heart Wave device can fail to work as expected or break at any step of the above use case. This issue must be resolved before receiving the treatment program or else the treatment is paused and will not be continued.
- The Heart Wave device user can return to the previous menu at any step of the above use case by pressing the back button.

- The Heart Wave device user can return to the main menu at any step of the above use case by pressing the return to main menu button.
- Instead of steps 2 and 3, the Heart Wave device user can select the “Frequency” option in the Setting Option by pressing the down arrow button (after pressing the return to main menu button if the user is not already on the main menu), and press the OK button, which in turn displays a list of available frequencies on the display. The Heart Wave device user can then press the down arrow button and the up arrow button to select the desired frequency, and press the OK button to confirm the therapy.

Use case 2: Receive data to Heart Wave Therapy Device

Actors: Heart Wave device user, inbuilt Electroid

Primary Case: Heart Wave device user

Level: User goal

Precondition: The Heart Wave device user has properly configured the Heart Wave device for their desired therapy and is ready to receive it on the Heart Wave device.

Postcondition: The Heart Wave device user receives the therapy that they selected.

Main Success Scenario:

1. The Heart Wave device user places the Heart Wave device’s inbuilt electrode on the surface of the user’s skin tissue and the treatment program begins once the device detects that the electrodes are placed on reactive tissue (skin on), displaying the count down of the time of therapy on the display.
2. The Heart Wave device user continues to receive the treatment (skin on) until the time of therapy reaches zero, where the user will then remove the device from the surface of their skin (skin off).

Extensions:

- 1a. The therapy does not start due to the power level being at 0.
- 2a. The therapy pauses due to the power level being at 0.

Variations:

1. At any time during this step, the Heart Wave device user can press the right arrow button to increase the power level or press the down arrow button to decrease the power level of the selected treatment program.
- 2a. At any time during this step, the Heart Wave device user can press the right arrow button to increase the power level or press the down arrow button to decrease the power level of the selected treatment program.

2b. At any time during this step, the Heart Wave device user can remove the device from the surface of their skin, pausing the time of therapy.

Alternatives:

- The Heart Wave device can fail to work as expected or break at any step of the above use case. This issue must be resolved before receiving the treatment program or else the treatment is paused and will not be continued.
- The Heart Wave device user can return to the previous menu at any step of the above use case by pressing the back button.
- The Heart Wave device user can return to the main menu at any step of the above use case by pressing the return to main menu button.
- The Heart Wave device can display a low battery warning and turn off at any step of the above use case due to low battery level, which is less than or equal to 15%. Exit the low battery warning page by pressing the OK button or the back button.
- With regards to the time of therapy, steps 1-2 can be different if the Heart Wave device user chooses the frequency option. The time of therapy would start at 00:00 and increase accordingly during skin on.

Use case 3: Record Data for the Heart Wave Device

Actors: Heart Wave device user,

Primary Case: Heart Wave device user

Level: User goal

Precondition: The Heart Wave device user wants to record their most recently received therapy by adding it to the history of treatment on the Heart Wave device.

Postcondition: The chosen therapy is properly saved to the device's history of treatment.

Main Success Scenario:

1. The Heart Wave device user presses the back button, resulting in the "Record Therapy" pop-up option to be displayed on the device's display.
2. The Heart Wave device user selects the <<Yes>> option (by pressing the right arrow button if the selection is on the <<No>> option) and presses the OK button to save the most recent therapy, returning to the previous menu display afterwards.
3. The Heart Wave device user returns to the main menu by pressing the return to main menu button.

Variations:

2a. The Heart Wave device user selects the No option (by pressing the left arrow button if the selection is on the Yes option) and presses the OK button, returning to the previous menu display afterwards.

2b. The Heart Wave device user returns to the main menu by pressing the return to main menu button (or by pressing the back button), selects the History option by pressing the down arrow button and then presses the OK button, displaying a list of options under History on the display. The Heart Wave device user selects the View option and presses the OK button, displaying the history of treatment list.

2c. The Heart Wave device user returns to the main menu by pressing the return to main menu button (or by pressing the back button), selects the History option by pressing the down arrow button and then presses the OK button, displaying a list of options under History on the display. The Heart Wave device user selects the Clear option and presses the OK button, clearing the history of treatment list.

Alternatives:

- The Heart Wave device can fail to work as expected or break at any step of the above use case. This issue must be resolved before receiving the therapy or else the therapy is paused and will not be continued.
- The Heart Wave device user can return to the previous menu at any step of the above use case by pressing the back button.
- The Heart Wave device user can return to the main menu at any step of the above use case by pressing the return to main menu button.
- The Heart Wave device can display a low battery warning at any step of the above use case due to low battery level. Exit the low battery warning page by pressing the OK button or the back button.

Use case 4: Using the Heart Wave Device

Actors: Heart Wave device user,

Primary Case: Heart Wave device user

Level: User goal

Precondition: The Heart Wave device user wants to use the Heart Wave device for therapy.

Postcondition: The Heart Wave device user receives the proper therapy that they selected, and the device is turned off.

Main Success Scenario:

1. Include *Configure Heart Wave Device Therapy* use case.
2. Include *Receive Heart Wave Device Therapy* use case.
3. The Heart Wave device user turns off the Heart Wave device once received the treatment by pressing the power button and turning off completely.

Extensions

2a. During or after step 2, the Heart Wave device user chooses to record their current received therapy by adding it to the history of treatment on the Heart Wave device. Include *Record Heart Wave Device Therapy* abstract use case.

Alternatives:

- The Heart Wave device can fail to work as expected or break at any step of the above use case. This issue must be resolved before receiving the therapy or else the therapy is paused and will not be continued.
- The Heart Wave device user can return to the previous menu at any step of the above use case by pressing the back button.
- The Heart Wave device user can return to the main menu at any step of the above use case by pressing the return to main menu button.



