

Use Case 1:

Use Case Name: Basic Use Case

Primary Actors: User, HeartWave Device

Other actors: Battery, Display

Goal: HRV device powers on and is able to read user input, display output and log history,

Precondition: HRV device is powered off

Main success scenario:

1. User presses power button to initialize the device
2. Display outputs a list a menu of potential commands
3. User connects device to their skin
4. User selects "start new session" command
5. User completes session
6. Display outputs all necessary data, as well as the LED to which coherence matches
7. HRV Program saves session data under "log"
8. User presses power button to power off the device

Postcondition: The user has turned on device, began a session, and turned off device

Extensions:

- 1a. If battery is at 0, then the device must be fully recharged and restart the process
- 2a. If battery is at 0, then the device must be fully recharged and restart the process
- 2b. If battery drops below 15% at any point, display will alert the user via a warning message
- 4a. The user starts the session and the Hr Contact sensor is not connected
 - The device will take the user back to the menu and can not begin session until sensor is connected again
- 4b. If user selects "Settings" then refer to Use Case 2
- 4c. If user selects "Log History" then refer to Use Case 4

Use Case 2:

Use Case Name: User selects Settings from menu and Alters Breath Pacer Settings

Primary Actors: User, HeartWave Device

Other actors: Battery, Display

Goal: User is able to set the desired breathe pacer settings

Precondition: HRV device is powered on, User selected "Settings"

Main success scenario:

1. Display outputs setting command of "Breath Pacer Settings"
2. User selects "Breathe Pace Settings"
3. Display outputs options from 1-30 seconds
4. User uses directional buttons to navigate between options and selects the desired Breathe Pacer setting. Timing between breath intervals adjusts accordingly
5. User presses "back" button to return to menu
6. Back at Basic Use Case step 2

Postcondition: User has selected their preferred Breath Pacer level

Extensions:

- 1a. If battery is at 0, then the device must be fully recharged and restart the Basic Use Case
- 1b. If battery drops below 15% at any point, display will alert the user via a warning message
- 1c. If user presses power off button, device will power off and display will stop, restart the Basic Use Case
- 2a. If battery is at 0, then the device must be fully recharged and restart the Basic Use Case
- 2b. If user selects "Breath Pacer Settings" refer to Use Case 2
- 4a. If user does not want to alter current Breathe Pacer setting, then press back button to return to menu

Use Case 3:

Use Case Name: User selects Log History from menu

Primary Actors: User, HRV Program

Other actors: Battery, Display

Goal: User is able to set view log history and log data.

Precondition: HRV device is powered on, User started and logged at least one session and selects the Log History menu option

Main success scenario:

1. Display outputs session data from previous sessions
2. User uses directional buttons to navigate between logs to view them and selects desired log to view specific data
3. User presses “back” button to return to menu
4. Back at Basic Use Case step 2

Postcondition: User has viewed log history and it's resulting data

Extensions:

- 1a. If battery is at 0, then the device must be fully recharged and restart the Basic Use Case
- 1b. If battery drops below 15% at any point, display will alert the user via a warning message
- 1c. If user presses power off button, device will power off and display will stop, restart the Basic Use Case
- 2a. If battery is at 0, then the device must be fully recharged and restart the Basic Use Case
- 2b. If user wants to delete the log for that session, they press the center button and are given the option to

Use Case 4:

Use Case Name: User clears Log History

Primary Actors: User, HRV Program

Other actors: Battery, Display

Goal: User is able to set clear history

Precondition: HRV device is powered on, User started and logged at least one session

Main success scenario:

1. User selects the Log History menu option from the main menu, after beginning at minimum one session
2. User uses directional buttons to navigate between the menu options and selects the "Clear" menu option
3. The device will double check with the user if they want to clear menu options
4. The user will be returned to the main menu

Postcondition: All the log data will be cleared from the device and the user will not be able to view it

Extensions:

- 3a. If the user changes their mind, they will select no and will be returned back to previous menu option

Use Case 5:

Use Case Name: Shutdown Use Case

Primary Actors: User, HRV Program

Other actors: Battery, Display

Goal: User is able to Power off the device

Precondition: HRV device is powered on

Main success scenario:

1. User presses the power button
2. All current functions are halted
3. Display and Device power off

Postcondition: The device is turned off and can no longer be used

Extensions:

- 1a. If battery is at 0, then the device must be fully recharged and restart the Basic Use Case
- 1b. If battery drops below 15% at any point, display will alert the user via a warning message
- 1c. If user presses power off button, device will power off and display will stop, restart the Basic Use Case
- 2a. If battery is at 0, then the device must be fully recharged and restart the Basic Use Case

