

KardiaMobile EKG Monitor Proposal



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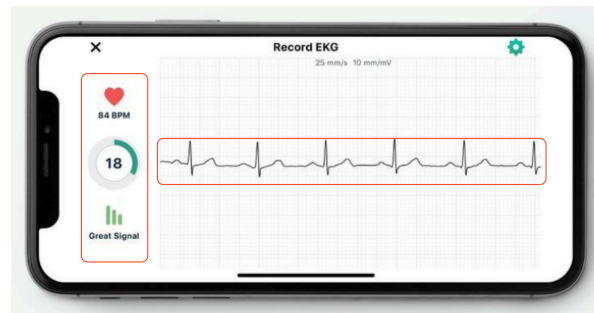
Overview of Device

Kardia is a handheld electrocardiogram recorder, of comparable quality to clinical EKGs. Kardia enables users to record an EKG whenever they need, without having to wait to see a medical professional. Kardia consists of Kardia Mobile (handheld electrocardiogram recorder), the Kardia mobile app, and a mobile phone/tablet device. Users utilize a mobile phone or tablet device, along with the Kardia mobile app to record an EKG and add notes/symptoms to the analysis report to share with their physician. ¹The \$79 version is single-lead, requires no wi-fi, has audio connection and a replaceable battery. ²

UI Design Features Enhancing UX

1. *Aesthetic and Minimalist Design for Kardia mobile app*

- a. Since many Kardia users may be unfamiliar with using medical technology, it is important to ensure the user experience is simple, approachable, and not overwhelming. While recording an EKG, there are only three main displays on the screen aside from the waveforms. Values for the user's BPM, time left in the EKG recording, and signal strength are displayed along with icons. Keeping this screen aesthetic and minimalist enhances the user's experience because it makes it less overwhelming for the user.



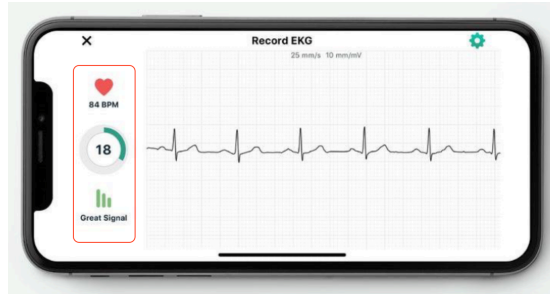
[Figure 1]

2. *Visibility of System Status for Kardia mobile app*

- a. On the “Recording EKG screen” the user interface design provides real-time feedback to the user about how the device is working. The user can see how much time is left in their EKG recording, what their BPM is, and how strong their signal is. The visibility from these user interface design features keeps the user updated and informed about the status of the system.

¹ “User Manual for KardiaMobile by AliveCor.” *AliveCor, Inc.*, AliveCor, Inc., <https://files.bbystatic.com/FATfv7j41JTltVgPxo9HJA%3D%3D/90529568-58a5-4395-8dbc-4321d45f5b0e.pdf> Accessed 13 Feb. 2024.

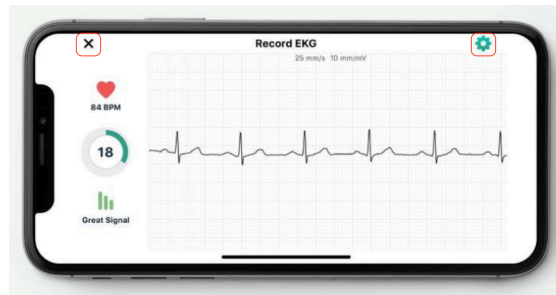
² “Kardiamobile EKG Monitor - Instant Ekg on Your Phone: Alivecor.” *AliveCor, Inc.*, AliveCor, Inc., store.kardia.com/products/kardiamobile. Accessed 13 Feb. 2024.



[Figure 2]

3. Consistency and Standards for Kardia mobile app

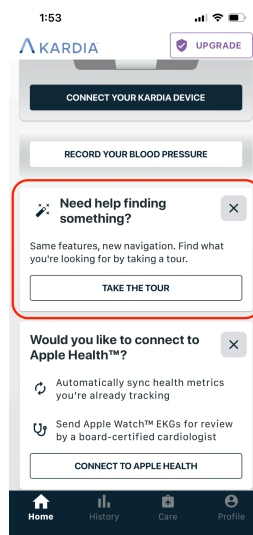
- a. The user interface design for the “Recording EKG” screen follows a standard layout that is consistent with most mobile app screens. The “X” button is displayed in the top left corner, while the “Settings” icon is displayed in the top right corner. Following consistency and standards enhances the user’s experience by making the standard controls recognizable and easy to navigate.



[Figure 3]

4. Help and Documentation for Kardia mobile app

- a. Upon entering the Kardia mobile app, there is a “Need help finding something” box that gives users the option to find what they need within the app. This help center assists users with any confusion they may have about Kardia, and is displayed prominently on the home page of the mobile app for easy access.



[Figure 4]

5. *Recognition Rather Than Recall for Kardia device*

- a. Since the design of the Kardia design is so simple, it is easy for users to recognize how to use the two electrodes without having to recall any information or press any buttons to navigate through the set-up process.

6. *User Control and Freedom for Kardia device*

- a. Users can select which type of EKG they want to record (Standard EKG, Resting Heart Rate, Guest EKG). ³Users can choose if they want to use their mobile phone or a tablet device, and from there choose how to place or connect the Kardia device. Users can also choose how long they want their recording to be, ranging from the default of 30 seconds to the maximum of 5 minutes. These choices give users a sense of control and freedom, enhancing the user's experience by allowing them to choose options that best fit their needs and capabilities.

7. *Aesthetic and Minimalist Design for Kardia device*

- a. The Kardia device is incredibly minimalist, with only the two electrodes (and the Kardia logo displayed). This simple product design enhances the user's experience because it only includes essential controls.



[Figure 5]

8. *Low barriers to Adoption and Usage for Kardia device*

- a. Since Kardia is compatible with mobile phones and tablets, the user does not have to go and buy additional products to set up and use the device. There are no wires, patches, or gels required to use, making Kardia easily adoptable for a new user.

9. *Convenience and Mobility for Kardia device*

- a. The small size and lightweight of the Kardia device makes it incredibly convenient to use and take on-the-go, making it a reliable medical device with limited set-up that users can bring with them anywhere and store easily.

10. *Sleek and Elegant Finishes for Kardia device*

- a. Medical devices can carry a negative connotation, associated with pain, frustration, and a sense of confusion. The sleek and elegant design touches on the Kardia device, such as the rounded/fileted edges, the pop of the white electrodes

³ "Alivecor KardiaMobile Personal EKG Monitor Black AC-009-UA-C." *Best Buy*, BEST BUY, bestbuy.com/kardiamobile. Accessed 13 Feb. 2024.

against the black backdrop, and the textured finish of the electrodes makes Kardia look like it was inspired by an iPhone or kitchen appliance rather than a medical device.



[Figure 6]

UI Design Features Detracting from UX

1. Lack of Labeling on Kardia Device

- a. Kardia is intended to be used with the user's left hand on one electrode and the right hand on the other electrode. Including labels to show the user where to correctly place their fingers would make it easier for the user to understand how to correctly record an EKG without any errors or confusion.

2. Lack of Visibility of System Status for Kardia Device

- a. The Kardia device does not offer the user sufficient feedback to indicate if the device is working properly or that the EKG recording has started. While this feedback is indicated on the Kardia mobile app, the user's experience using the Kardia device would improve if there was increased feedback to indicate that the device is working properly.

3. Lack of Match Between System and Real World for Kardia Device

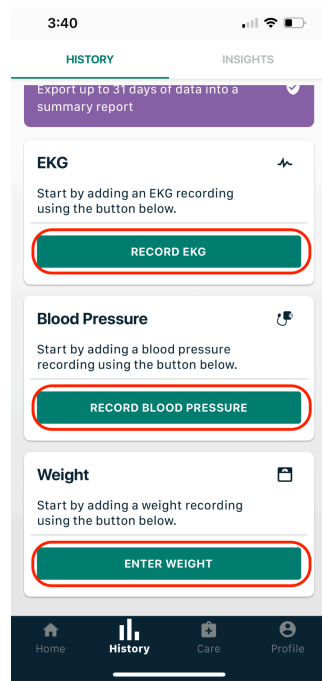
- a. The physical appearance of the electrodes should be redesigned to match the system to similar real world scenarios that users will be familiar with where they need to press and hold their fingers in place, such as the process to enable touch ID on an iPhone or to get fingerprinted.

4. Lack of Help and Documentation for Kardia Device

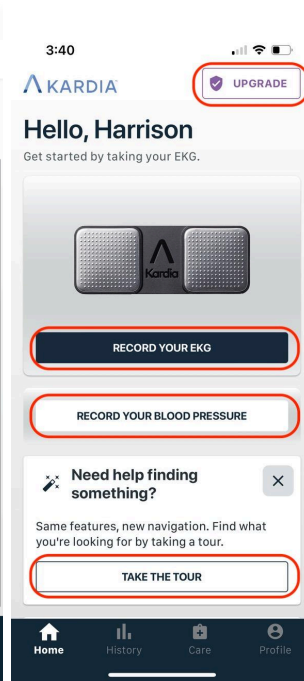
- a. While the Kardia mobile app has help and documentation features built-in, there could be improved help and documentation from the Kardia device to assist new users setting up the device and becoming comfortable operating it. For example, the user may forget how far away the Kardia device can be placed from their mobile phone/tablet device.

5. Lack of Minimalist Design for Kardia mobile app buttons

- a. On the Kardia mobile app, some clickable buttons are navy blue, white, green, gray, etc. The mobile app should focus on a more limited color scheme, and use different colors to signify different types of actions.



[Figure 7]



[Figure 8]

Recommendations for Improvement

1. *Incorporating Auditory Feedback for Kardia device*
 - a. Auditory feedback could be implemented to improve the visibility of system status. For example, the audio feedback could emit to remind the user that the Kardia device was placed too far away from the mobile phone/tablet device.
2. *Incorporating Visual Feedback for Kardia device*
 - a. Visual feedback could be implemented to indicate if the device is working properly. For example, subtle green or red lights could flash under the rim of the electrodes to indicate if the finger placement is correct before starting to record an EKG.



[Figure 9]

3. *Finger Indents for Kardia device electrodes*

- a. Some Kardia users may be elderly adults who are skeptical of how to use the device upon first glance. There could be finger indents to visually aid users with where their fingers should be placed on the Kardia device.



[Figure 10]

4. *Adding Ergonomic Supports for Kardia device*

- a. There is the potential that some users' hands/arms may be in an uncomfortable position while recording an EKG, especially if recording a 5 minute EKG. Optional ergonomic supports, or cushions could be added to allow users to comfortably rest their hands while holding their fingers in place on the electrodes.

5. *Improving Design System Features for Kardia mobile app*

- a. Changing the design system to make the colors of each button more consistent with their functions, and removing any unnecessary colors in the Kardia mobile app will make it less distracting and easier for users to navigate through.

References

“Alivecor KardiaMobile Personal EKG Monitor Black AC-009-UA-C.” *Best Buy*, BEST BUY, bestbuy.com/kardiamobile. Accessed 13 Feb. 2024.

“Kardiamobile EKG Monitor - Instant Ekg on Your Phone: AliveCor.” *AliveCor, Inc.*, AliveCor, Inc., store.kardia.com/products/kardiamobile. Accessed 13 Feb. 2024.

“User Manual for KardiaMobile by AliveCor.” *AliveCor, Inc.*, AliveCor, Inc., <https://files.bbystatic.com/FATfv7j41JTltVgPxo9HJA%3D%3D/90529568-58a5-4395-8dbc-4321d45f5b0e.pdf>. Accessed 13 Feb. 2024.

Appendix

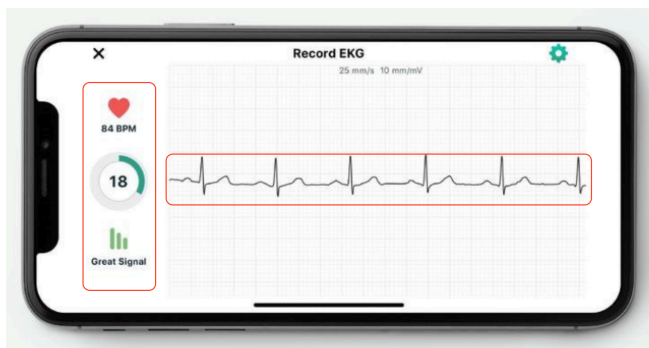


Figure 1: Illustrating the 3 displays and waveforms (Image taken from Canvas)

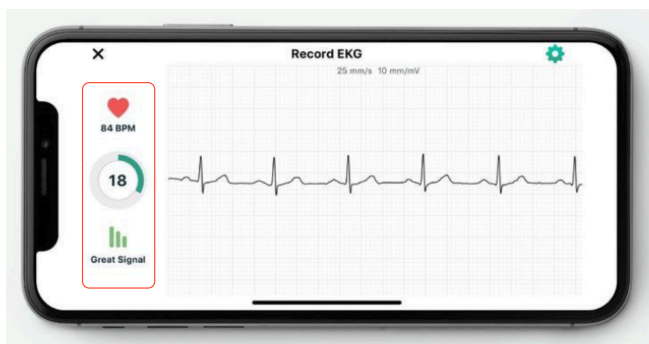


Figure 2: Illustrating 3 displays (Image taken from Canvas)

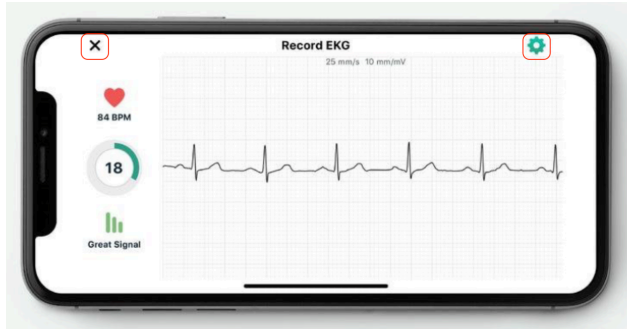


Figure 3: Highlighting “X” button and “Settings” icon (Image taken from Canvas)

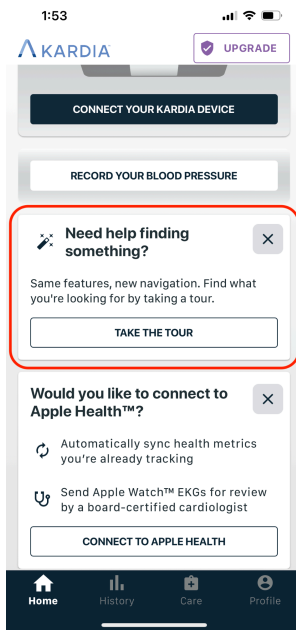


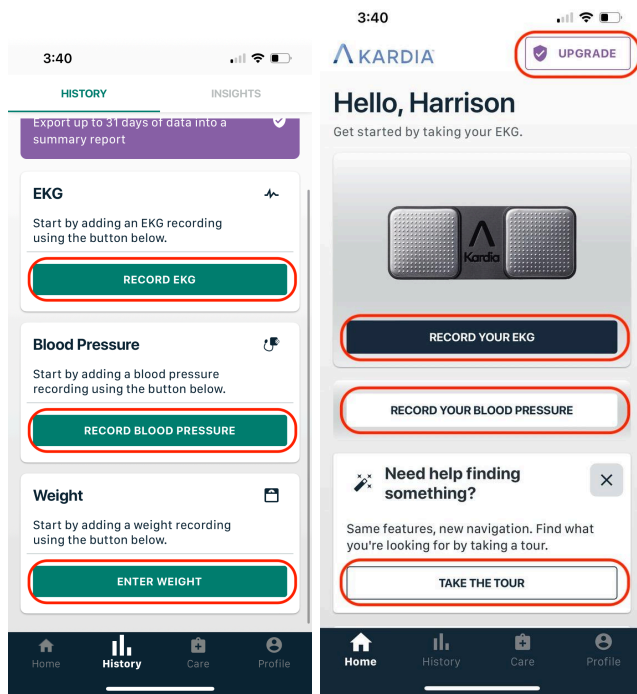
Figure 4: Highlighting help & documentation center (Image taken from Kardia mobile app)



Figure 5: Illustrating simple design of Kardia device (Image taken from Best Buy)



Figure 6: Illustrating design features of Kardia device (Image taken from Best Buy)



Figures 7 & 8: Illustrating button colors (Images taken from Kardia mobile app)



Figure 9: Illustrating potential addition of visual feedback in the form of green lighting (Image taken from Best Buy)