

## Overall Test Plan

Our test plan will encompass all the various features of our device individually and how they interface with each other. We will also test the overall useability of the device to assure that ease of use is acceptable for the target demographic. We'll test both normal and abnormal cases for our features to assure that the device responds appropriately. Once we assure that each feature is operating appropriately individually and between one another, we can test it at a more system level. That will look like assessing how the device operates in a production environment.

## Test Case Descriptions

Text Recognition

Voice Recognition

Wifi Connectivity

Remind User at appropriate time

Tell User Drug Information

Store and display Pill Bottle Image

Remind user when to refill Prescription

### CS1.1 **Text Recognition**

CS1.2 This test will assure that the text recognition feature is working accurately

CS1.3 The tester will need to prompt the device to scan a prescription label. Then the tester will scan the pill bottle, following the device's prompts on how to position the device. Once scanned, the tester will check to see if the recognized text matches the text on the bottle, for the fields of :

Medicine Name, Quantity, Refill Date, Refills left, Date Filled

CS1.4 Pill Bottle Scanned

CS1.5 Medicine Name, Quantity, Refill Date, Refills left, Date Filled

CS1.6 Normal

CS1.7 Blackbox

CS1.8 Functional

CS1.9 Unit

### CS2.1 **Voice Recognition**

CS2.2 This test will assure that the voice recognition feature is working accurately

CS2.3 The tester will need to prompt the device the device via their voice to do a command (tell them about their medicine, ask if they've taken their meds yet, ask the date / time / weather etc). Then the tester will listen to the device to assure that it provides a clear, accurate and appropriate response to the question / command given.

CS2.4 Testers Voice, commanding device. Input examples ("have I taken my medicine yet today", "What's the date today". "Tell me about Lisinopril")

CS2.5 Depends on input, but if must be clear, accurate and appropriate to the questions asked / command given

CS2.6 Normal

CS2.7 Blackbox

CS2.8 Functional

CS2.9 Unit

### CS3.1 **Wifi Connectivity**

CS3.2 This test will assure that the device can connect to wifi reliably

CS3.3 The tester will be prompted to provide a wifi network name/ select from the available networks. They may also need to provide a password. This will be done via the on screen keyboard. When given the device information, the device should be able to connect to the wifi network and let the user know that it connected successfully.

CS3.4 Wifi network name, password to network (if needed)

CS3.5 Let user know that device connected successfully(assure wifi is appropriately connected)

CS3.6 Normal

CS3.7 Blackbox

CS3.8 Functional

CS3.9 Unit

### CS4.1 **Reminder alert Feature**

CS4.2 This test will assure that the device can remind the user when to take their medicine

CS4.3 The tester will need to set a reminder on the device to remind them to take their medicine at a specific time. Then when the time comes, the user should be alerted that it is time to take their Meds( via audio and on screen alert)

CS4.4 Reminder Time for specific medicine

CS4.5 Alert sound and message on screen, displaying its time to take a specific medicine

CS4.6 Normal

CS4.7 Blackbox

CS4.8 Functional

CS4.9 Unit

### CS5.1 **Medicine administration Feature**

CS5.2 This test will assure that the device can confirm with the user when they take their medicine or not

CS5.3 The device will prompt the user, asking if they have taken their medicine or not. The tester can respond back via a yes / no box on the screen or via their voice

CS5.4 Yes / No box on screen or via voice

CS5.5 Thank you message. Store result in DB to access later

CS5.6 Normal

CS5.7 Blackbox

CS5.8 Functional

CS5.9 Unit

#### **CS6.1 Drug information Feature**

CS6.2 This test will assure that the device can tell the user information about the medicine their taking

CS6.3 When the user asks for information on a drug, the device will give a short synopsis and ask if they want specific information about warnings, side effects etc. It will also show a picture of the user's bottle of that specific medication.

CS6.4 Voice command asking for drug information. Later specifying for further info

CS6.5 Reads out loud drug information to user.

CS6.6 Normal

CS6.7 Blackbox

CS6.8 Functional

CS6.9 Unit

#### **CS7.1 Store and Display Pill Bottle Image**

CS7.2 This test will assure that the device can display the captured image of the user's pill bottle

CS7.3 When the user is prompted to take their medicine or if the user asks for information on their medicine, the device should display an image of the user's pill bottle on the screen, taken from when the bottle was initially scanned

CS7.4 Drug information is asked or user information is reminded to take medicine

CS7.5 Pill bottle image is displayed on screen

CS7.6 Normal

CS7.7 Blackbox

CS7.8 Functional

CS7.9 Unit

#### **CS8.1 Prescription Refill reminder**

CS8.2 This test will assure that the device can remind the user when to refill their prescription

CS8.3 When the user scans their bottle initially, the device should store when they need to refill their prescription. Then when the day comes, the device should prompt the user that they need to refill their prescription.

CS8.4 User scans pill bottle initially

CS8.5 Device reminds user at the appropriate date to refill their prescription

CS8.6 Normal

CS8.7 Blackbox

CS8.8 Functional

CS8.9 Unit

#### **CS9.1 Report: "Have I taken my medicine" check**

CS9.2 This test will assure the report that tracks how often the user checks with the device if they've taken their medicine or not is functioning appropriately.

CS9.3 When asked, the device will let the user know whether or not they have taken their medicine or not. The device will gather metrics on when and how many times the user asks across time. Also, how often they ask after / before they have taken it

CS9.4 User uses device regularly  
 CS9.5 Device reports to family / physician on results  
 CS9.6 Normal  
 CS9.7 Blackbox  
 CS9.8 Functional  
 CS9.9 Unit

**CS10.1 Report: Taking Medicine rating**

CS10.2 This test will assure the report that tracks how often the user appropriately takes their medicine  
 CS10.3 As the user utilizes the device each day, the device will gather metrics on the user regarding if they take their medication on the appropriate time each day / if they miss taking their medicine  
 CS10.4 User uses device regularly  
 CS10.5 Device reports to family / physician on results  
 CS10.6 Normal  
 CS10.7 Blackbox  
 CS10.8 Functional  
 CS10.9 Unit

Test Case Matrix

	Normal/ Abnormal	Blackbox/ Whitebox	Functional/ Performance	Unit/ Integration
CS1	Normal	Blackbox	Functional	Unit
CS2	Normal	Blackbox	Functional	Unit
CS3	Normal	Blackbox	Functional	Unit
CS4	Normal	Blackbox	Functional	Unit
CS5	Normal	Blackbox	Functional	Unit

CS6	Normal	Blackbox	Functional	Unit
CS7	Normal	Blackbox	Functional	Unit
CS8	Normal	Blackbox	Functional	Unit
CS9	Normal	Blackbox	Functional	Unit
CS10	Normal	Blackbox	Functional	Unit

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Results of tests:

All Passed to at elst some degree

**Text Recognition:** Worked for extracted values to 80% accuracy for medicine name

**Voice Recognition:** When speaking clearly, the device was able to detect words up to 95% of the time

**Wifi Connectivity:** connecting when given proper parameters 100% of time

**Reminder alert Feature** alerts user at consistent time based on whats read from bottle

**Medicine administration Feature** able to track if user has taken medicine based on input

**Drug information Feature** able to consistently read drugs.com for info

**Store and Display Pill Bottle Image** stores and displays bottle image from scan when reminding user to take meds

**Prescription Refill reminder** able to compute refill reminder date from bottle metrics and remind user at appropriate time prior to running out that it is time for the user to get their refill

**Report: "Have I taken my medicine" check** able to count number of time user asks device if medicine has been taken yet and can chart info for report locally

**Report: Taking Medicine rating** No rating for user yet, but able to report locally on how many days they have been late and how many days they doses they have missed for the length of a prescription.