

## Mobile Accessibility for the Visually Impaired

### **RAY VISION MOBILE APPLICATION - Brief User Guide**

#### **Ray Vision**

- Available to download on Google Play Store at <https://play.google.com/store/apps/details?id=com.ray.manager>
- Free use for 30 days with full system capabilities. Usage costs thereafter is \$10 per month.
- An accessible mobile system, specially built to allow sight-free, intuitive, and easy to use interface for any touch devices.
- Option to easily move between RAY mode of operation and related applications, to Android operating mode and applications.
- Ray is always connected to the Internet and enables real-time, remote assistance from family members, caregivers, and technical support specialists.
- User data is securely backed up on Google Drive including contacts, appointments, settings and media files.
- When the user replaces a device and logs into the new one, the last available setting will be automatically restored.

#### **Supported Devices**

- RAY Vision is available for any Android device with OS 5.0 and above.
- After installing the manager application, you may be prompted to download additional companion applications on first use.
- When using devices with physical keypads like the Ray L5 or Ray K2 devices, you can use the up/down/left/right physical keys instead of finger movement on the screen.
- In addition, you can also purchase Ray Click device, NFC or BLE based, and add a tactile keypad with four clickable buttons with which you can control the entire device.

#### **Operating principles**

The phone has a flat touch screen operated by finger gestures on the touch surface.

- The basic operation is done by placing a finger somewhere around the center of the screen and sliding the finger in a specific direction. Upon moving the finger, you will hear the item that is in that direction. To select it, lift the finger from the touch surface.
- It is important to put the finger close to the center of the screen. When you place your finger in the right location, you will hear a gentle confirmation tone. When you touch outside the center, you will hear a high-pitched cancellation beep.
- If you touch the screen and would like to cancel the touch without selecting, drag your finger outside of the screen area until you hear the cancellation beep.

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### **Ray's user interface Screens**

The entire RAY system is built with three type of interface screens that are the same across all functions and capabilities of the system – ensuring quick learning and easy of use.

#### **MENU Screen**

MENU screen enables one to choose a single function and execute it. A MENU screen always includes eight options arranged in a square around the touch point. Touch the screen in the middle and move your finger in one of the eight possible directions, upon hearing the desire function, lift your finger to choose and invoke it.

The main screen of the Ray Vision is HOME MENU. Under it there are two levels of additional menus.

#### **LIST Screen**

LIST screen allows you to select a single item from a list of similar items, such as an audio books list, contact list or call list. To choose an item in a list, place your finger in the center of the screen, slide it up or down to set the direction of your search. After determining the direction, hold your finger on the screen without moving and the system will present one item after the other automatically. To choose an item, wait until you hear it, and lift your finger to select the item.

Advanced user may speed up the selection of an item from a LIST screen using two fingers, more about it in the full user guide.

#### **MANAGEMENT screen**

MANAGEMENT allows you to perform a certain action on the selected item, such as dialing a contact or reading a digital book. MANAGEMENT screen is arranged like the MENU screen described above with anywhere between 3 to 8 available options to execute.

### **On-screen Keyboard**

The default setting for RAY vision is to work with the built-in keyboard of your Android device. The motivation of this default value is to make it easier for sighted people who help in first time use to set and arrange the system.

However, Ray Vision offers a special sight-free keypad that enables dialing of numbers and characters. The operation of this keyboard is explained below. To toggle between Android keyboard and Ray keyboard, move to the third MENU screen for the INFORMATION AND SETTING application and select the menu item called RAY KEYBOARD.

RAY numeric keyboard is built in the form of a standard phone dialer of 12 keys keypad. Upon touching the screen somewhere in the center of it, you set the touch point to become the position of the number five key. To get the rest of the numbers or letters, drag your finger from the touch

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point towards the letter or number you wish to enter. For example, moving the finger to the right will bring you to the number 6. To select the number simply lift your finger from the screen.

The alpha-numeric screen consists of keys where there are several letters associated with each key. After moving your finger to the desired key, leave your finger on the key until you hear the desired letter. To select a letter or number, lift the finger from the screen.

In addition, outside of the two input screens there are actions behind some of the numbers/letters:

- Key number 4 is used to return to the previous screen.
- Key number 2 is used to read a number or a message typed.
- Key number 6 is used for dialing / sending a message.
- Key number 8 is used to delete the last character typed.
- Key number 7 is used to delete the last word typed.
- Key number \* is used to delete the entire buffer.
- Key number 0 is used for various other activities.

Again, to toggle between RAY keypad and Android keyboard, use the setting options of RAY in INFORMATION AND SETTING.

### General notes

#### **Voice data entry**

When a KEYBOARD is open, it is by default in speech recognition mode. You can speak the numbers, letters and entire sentences and the system will translate it to text. The speech recognition system requires an Internet connection. It is also affected by background noise and the speakers' accent. A quick touch on the screen disables the speech recognition mode. RAY INFORMATION AND SETTING provides a menu option to enable and disable automatic speech recognition mode.

#### **Quick move in LISTS**

In a list of 20 items and more, RAY enables quick move between the items.

To skip reading the current item and move to the next, you should make a quick tap on the screen with a second finger (while keeping the first finger on the screen). You can skip a few items at a time by tapping the screen the appropriate number of times.

To skip over items that begin with the same letter, hold the second finger on the screen and keep it on the touch surface until you hear the desired first letter.

#### **Return to Previous Screen**

An important aspect of the system is the fact that you can navigate the different screens one on top of the other starting with the main HOME screen. To get back in the hierarchy, you should

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execute a return to the previous screen. To get back one screen, put your finger somewhere in the middle of the screen and move it to the left in the direction of the number 4 key; when hearing 'previous screen', lift the finger to choose and execute.

### Working in Android Mode

The device allows quick switch from RAY mode of operation to Android mode of operation. While in Android mode, you are in a standard Android environment including full access to Google Play store and all the standard Android functions.

You may also configure, launch and run up to five Android applications from within the RAY menu system for quick and secure access to frequently used applications.

Working in Android mode, or when executing an Android app, the interface used is the standard Android interface and you can set it to start with accessibility and Talkback set to on or off.

Instructions of how to work with Android accessibility features are available at:

<http://www.google.com/accessibility/products/> .

### Remote Assistance

An important capability of the system includes various options to remotely support the device over an Internet connection by family members, friends and support technicians.

Each device has a personal web page that can be reached via Project-RAY website (choose the LOGIN option on the top-right corner of the page) using your user-id and password send to you in the welcome email. Once there, one can perform a few tasks including:

- Contact Management
- Tracking the device location.
- Uploading of audio books, music and more.

You will get your user-id in the introduction email sent to you when you first open the app. A sighted person can also see the user-id in the lower corner of the HOME MENU or listen to it in the 'INFORMATION AND SETTING' menu item. The format of the user-id is

[xxxxxxxxx@clfb.org](mailto:xxxxxxxxx@clfb.org) or the email address on the device and the default password is '12345678'.

In addition, there is a mobile application that is available for sighted family members with which you can remotely get the location of the RAY device on a map, look at a video stream sent from the RAY device, or trigger getting a still picture remotely.

In addition, all device data is automatically backed-up and will allow you to return to the last functioning state in case you need to replace the device.

### Setting menu

RAY Vision setting is available in the third menu screen under 'INFORMATION AND SETTING' function (on key number 3). The important setting options available include:

- Setting the system language

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- Setting the default keyboard to use – RAY keypad or Android keyboard
- Setting the default speech recognition mode to on or off

RAY Vision also enables changes in the default setting of the three levels of MENU screens. More information of how to do it you will find in the complete user guide.

### RAY Vision Launcher

RAY also provide a separate mobile application called Ray Vision Launcher which is available on Google Play Store at -

<https://play.google.com/store/apps/details?id=launcher.vision.ray.com.rayvisionlauncher> .

You should get and use this application if you would like to set RAY as your default HOME screen or configure it for a quick invoke under a special hot key. With the RAY launcher, your setting will not be affected with automatic system and application update.

Video demonstrations of using Ray is available at -

<https://www.youtube.com/channel/UCIMLaAgVeUMEE4vqMbAFEdA>

RAY was developed for the benefit of the visually impaired and their family members. To improve it, we need your support and help. Please direct any comment, suggestion and help request to our support center by email to [support@project-ray.com](mailto:support@project-ray.com)