

Monarch Technical Specification

Meet Monarch! A Dynamic Tactile device that will render multiple lines of braille and tactile graphics on the same display, given greater access to textbooks and tactile graphics on demand.

Here is a summary of the technical specifications that Monarch plans to adopt. Please note that these specifications may be subject to change during the development cycle, but they provide valuable insights into the future features of the device.

The top section of Monarch will feature a nenode infrared sensor, enabling touch capabilities. This means that the device will indefinitely support touch interactions, allowing users to select menu items through tap gestures. Additionally, there will be a new point-and-click method for enhanced usability.

The majority of the top face of Monarch will be dedicated to the tactile display, which consists of an impressive 3,840 pins. This display is designed to showcase braille literacy and tactile graphics. Similar to modern televisions, the more pixels are packed together, the better the image quality. In the case of Monarch, it works in a braille context. With its equidistant braille spacing, Monarch can present tactile graphics with a resolution of 9.7 DPI. This ensures a good dynamic representations of tactile graphics for an improved user experience.



- Sensor = Located above the tactile display to capture finger recognition
- Page Up = Located on the top left of the tactile display. Used to pan the braille to the previous 10 lines
- Page Down = Located on the bottom right of the tactile display. Used to pan the braille to the next 10 lines
- X2 Dpad = Located either side of the display, this key is used to pan around a tactile image in addition to manipulating the cursor.

- Zoom Out = Located bottom left of the tactile display. Zoom out of a tactile image
- Zoom In = Located bottom right of tactile display. Zoom in a tactile image
- Power LED = Green when on.
- Perkins 8 keys = Located directly underneath the tactile display. Braille Keyboard entry
- MicroPhone – Recording
- Select burron = Located inbetween dot 1 and dot 4 keys. A multiple purpose button. Used to enable/disable touch gestures, forcing a manual refresh and used in conjunction with point and click gesture.



Right Side

The device will be fully equipped with Text to speech voices.

- Volume Up
- Volume Down
- Audio Jack
- HDMI Connector – **Used to display what the user is viewing on a screen for sighted peers**

Front Edge

Android Navigation keys

- Back (Triangle)
- Home (Circle)
- Recent apps (Square)



Left Side

- USB Type C – Used for Charging and Video In.
- Power Button
- USB Type A

Applications

Monarch Applications will be powered by HumanWare’s KeySoft Accessibility suite and will consist of major improvements over the current KeySoft suite. Below is an introduction of some the applications available on Monarch upon release.

- KeyWord : Word processor supporting MATH ML
- KeyBrf : Braille Editor
- Graphing Calculator
- Scientific calculator
- Tactile Viewer
 - Access to TGIL online library, accessing over 15k available tactile graphics on demand.
- Victor Reader
- KeyFiles : File Manager

Software Development Kit (SDK)

Providing future opportunities to third party developers who are interested in creating and optimizing application for Monarch. The Software Development kit will initially be exclusive to APH, but potentially will be reviewed to bring in partners who would like to join us on this braille highway.

System Languages supported

The intention is to support multiple languages however the priority is to ensure we have a stable English and French version. Out of the box Monarch will however support multiple braille languages, in fact over 250 braille tables including learning tables such as take off series will be available.

The availability of Languages are all dependable on opportunities. Please contact Monarch@humanware.com if you require a specific language.

Physical specifications

Parameters	Measurements
Width	403.5mm (15.89in)
Depth	266.5mm (10.49in)
Thickness	35.5mm (1.40in)
Weight	2.1 kg (4.65lbs)

Technical Specifications

- Android OS
- Internal Storage: 128GB
- Quad core 64-bit Cortex A55 @ 2.0GHz processor
- 4GB LPDDR4
- Battery Autonomy: Expectations are 8 hours, but currently way exceeding these.
- Neosense IR sensor for Touch recognition
- Audio Jack
- Microphone
- Stereo Speakers
- Braille keyboard
- 480 braille cells
 - Displays 32 characters per line
 - Up to 10 braille lines
 - Configurable braille line spacing to represent double line spacing.
 - User replaceable protected membrane protects from dust and accidental liquid spillage.
- Laird ST60-SIPT Wireless Bluetooth Module
 - WIFI 802.11ac – 2.4GHz and 5GHz
 - Bluetooth 5.1
- USB Type C 3.0
- USB Type A 3.0
- HDMI 2.0
- Haptic LMA (Linear Motor actuator) Feedback

Certifications

European Union

- Consumer Electronic
- Medical Device Regulation

UK

- Consumer Electronic
- Medical Device Regulation

Australia

- Consumer Electronic

Korea

- Consumer Electronic