# Updating ChromeOS

To ensure your Brailliant BI 40X and Mantis Q40 braille display can connect to a Chromebook via USB, you will need to ensure the device is running V. 117 or greater. To verify this, and update if necessary:

Go to the Chrome menu -> Settings -> About ChromeOS. If v117 or greater, you are running BRLTTY 6.5, and are able to connect your braille display via USB cable for braille input/output on ChromeOS.

To accomplish this via the keyboard and using ChromeVox:

* Ensure ChromeVox is running by pressing alt+ctrl+Z
* Begin at the launcher, (you can ensure you are there by pressing alt+shift+L)
* Press alt+shift+S to go to Quick Settings
* Press enter on the “Settings” button
* In the search field, type in “About” and press enter on the result
* Note: the Search key, or Launcher key on a Chromebook, refers to the same key, and will be referred to as the Search key throughout this guide
* On the Mantis, the Search key is the Windows key. There is no Brailliant equivalent.
* Press the Search key+Down arrow to find out the version number, (it should be V. 117 or higher), and if needed, continue through the About page to check for updates
* Please follow all prompts to update/restart your device until the operating system is up-to-date

## Adjusting Braille Settings

Before you connect a braille display, you want to ensure a smooth reading experience. This entails selecting the braille table that ChromeVox will use.

To access braille settings, press Search+O followed by another O. This will open the ChromeVox options. From this panel, you can also adjust the voice that ChromeVox uses.

Press Search+H to navigate by headings until you get to “Braille”

Press the Search key and the right arrow to move through these menus.

Navigate to the “Select a Braille Table” option, and press Search+right arrow to get to the 6 or 8-dot dropdown list.

To open the dropdown box, press Search+space, and up/down arrow to choose the preferred table. Press enter to select it.

Then, press Search+right arrow to choose the code that ChromeVox will use, such as Unified English Contracted Braille. Press Search+space to open the dropdown box, and up/down arrow to choose your preferred code. Press enter to select it.

After these selections, press Search+right arrow to get to the button “Enable word wrap” and ensure it is pressed with Search+space. Press Search+right arrow to get to the button “Show braille commands in the ChromeVox menus” and ensure it is pressed.

When you have finished making the necessary changes, press ctrl+W to close the menus.

For more information, please refer to this guide:

[Use a braille device with your Chromebook - Chromebook Help (google.com)](https://support.google.com/chromebook/answer/7020014?hl=en#zippy=%2Cswitch-between--dot-literary--dot-computer-braille)

## Getting Connected

With the Chromebook up-to-date, and the preferred braille table and code chosen, you can now connect the Brailliant/Mantis to the computer. Please ensure ChromeVox is running, and do the following:

* Power on the Brailliant/Mantis, and access the terminal option in the Main Menu
* Choose Connected devices>USB connection and press enter. You will read “braille display” and this indicates the unit is able to now be connected to the Chromebook.
* Connect the rectangular end of the Brailliant’s or Mantis’ charging cable to the rectangular USB port on the Chromebook, and connect the USB-C connector to the USB-C port on the braille device
* A message will be spoken that says “Braille display connected”, and what is displayed on the Chromebook’s screen will now appear in braille.

## Navigating Your Chromebook

Note: at the time of this writing, (January, 2024), not all Brailliant keys are mapped to navigation options within ChromeVox. The inner left and inner right thumb keys currently have no assigned functions. On the Mantis, however, the inner left/right thumb keys will pan the display.

The Brailliant’s Command Keys will be referenced as C1-C6.

* To pan the braille display forward: C5, (Mantis: inner right thumb key)
* To pan the braille display backward: C2, (Mantis: inner left thumb key)
* To go to the next braille line: press the Next, (outer right), thumb key
* To go to the previous braille line: press the Previous, (outer left), thumb key

Note: to access keyboard help, press Search+O, followed by K.

Additionally, a comprehensive list of navigation keys can be found in the ChromeVox menus, (Search+period)

## Granular Navigation

To navigate your Chromebook, do the following:

* Next line, (down arrow): dot 4+space
* Previous line, (up arrow): dot 1+space
* Next word: dot 5+space, (Mantis: Search+ctrl+shift+right arrow)
* Previous word: dot 2+space, (Mantis: Search+ctrl+shift+left arrow)
* Next character: dot 6+space, (Mantis: Search+shift+right arrow)
* Previous character: dot 3+space, (Mantis: Search+shift+left arrow)
* Stop speech: space+backspace+dots 5-6, (Mantis: ctrl key)

## Navigating web pages

ChromeVox has a feature called “Sticky Mode”. When this mode is enabled, you can use your arrow keys to move around a web page. When Sticky Mode is disabled, you must hold down the Search key and navigate with the arrow keys or quick nav keys.

To enable/disable Sticky Mode: press the Search key twice quickly.

When using a Brailliant/Mantis to navigate a web page, it is up to the user whether to enable/disable Sticky Mode. For easier navigation, it is recommended to have it enabled.

To make use of quick navigation keys on a web page, such as going by headings or buttons, use the following syntax:

* On Brailliant: Space+ quick nav key to go forward, (Mantis: use the quick nav key with Sticky Mode enabled)
* Backspace+space+ quick nav key to go backward, (Mantis: shift+ quick nav key)

Here is a list of some common quick navigation keys to be used with Sticky Mode enabled:

* Headings: space+H, (Mantis: H)
* Buttons: space+B, (Mantis: B)
* Edit boxes: space+E, (Mantis: E)
* Go to top of page: space+dots 1-2-3, (Mantis: Search+ctrl+left arrow)
* Go to the bottom of the page: space+dots 4-5-6, (Mantis: Search+ctrl+right arrow)
* Show context menu: space+dots 1-3-4, (M), Mantis: Search+M
* Find in page: space+dots 3-4, (ST) Mantis: Search+slash
* Start or end selection: space+dots 2-3-4, (S) Mantis: Search+S

Escape: space+dots 1-3-5-6, (Z) Mantis: Escape

A full list of quick navigation keys can be found by accessing the ChromeVox menus, (Search+period)