# Using Braille on iOS

Presented by Matthew Horspool for the Braillists Foundation, Tuesday 2 February 2021 at 7:30 PM

## Before You Start

The content of this session is designed to fit any supported braille display, of which there are several dozen. Demonstrations are largely for illustrative purposes only, although many procedures and commands are similar between displays (see article 3 at the end of this handout for a full list of common commands, or article 2 for commands specific to your braille display). Given its high market share, the Orbit Reader 20 will be the primary braille display used for demonstration purposes. I will also occasionally use a HumanWare Brailliant BI40 and BrailleNote Apex.

If you wish to use another braille display, it must support Bluetooth. Most modern displays have this functionality, but if you are using an older display it is worth checking.

You will benefit most if your braille display has an input keyboard (either Perkins or QWERTY). However, displays without an input keyboard can still be connected.

Please make sure your braille display is in "Bluetooth" mode or similar before attempting to use it with Voiceover. For further guidance, please consult your braille display manual.

If you have a braille notetaker such as a BrailleNote or BrailleSense, you can use this in lieu of a braille display by entering "Terminal" mode or similar on your notetaker, and setting the terminal port to "Bluetooth". For further guidance, please consult your notetaker manual.

The term "iPhone" is used in this handout to refer to any iOS device including the iPhone, iPad or iPod Touch.

### A Special Note about the Mantis Q40

This display uses the Human Interface Device (HID) protocol and is thus implicitly supported by Voiceover even though it does not appear in the list of supported braille displays.

Note, however, that the usual braille commands will not work as the Q40 has a QWERTY keyboard, not a braille one. Instead, please use the same commands that you would use with any other external keyboard. These are fully documented in article 5 at the end of this handout.

### To Switch to Bluetooth Mode on the Orbit Reader

1. Press Select+LeftArrow to enter "Stand-Alone" mode.
2. Press space+dot 7+dot 4. The display should show: ":: bluetooth"

N.B. when you power off the Orbit Reader 20 and power it back on again, you will be returned to "Stand-Alone" mode – simply press space+dot 7+dot 4 again. Alternatively, if your Orbit Reader is already paired with your iPhone, unlocking the screen may cause the Orbit Reader to automatically switch into "Bluetooth" mode until your iPhone is locked again.

### To Switch to Bluetooth Mode on the Brailliant BI40

1. Press the Menu button twice quickly.
2. Use the right most thumb key to scroll down to "Channel".
3. Use the thumb key second from the right to scroll to "Bluetooth". If this does not work, return to step 1 and try again – the menus may be in a read only mode.
4. Press the right most thumb key. The Brailliant should restart in Bluetooth mode.

### To Switch to Terminal Mode Using Bluetooth on the BrailleNote Apex

1. Press space+dots 1-2-3-4-5-6 to go to the "Main Menu".
2. Press backspace+enter+t for "Terminal for Screen Reader".
3. BrailleNote should prompt: "Terminal Port?" Press b for "Bluetooth".
4. Press Enter. After a short pause, "Terminal" mode should be active.

N.B. If the Terminal does not work:

1. Press space+e to Exit.
2. Press space+o for the "Options Menu".
3. Press c for the "Connectivity Menu".
4. Press b for "Bluetooth".
5. BrailleNote should prompt: "Bluetooth on?" Press y for "Yes".
6. Repeat the steps above for starting the Terminal.

## Pairing your Braille Display

See article 1 at the end of this handout for the full process. However, in brief:

1. Go to Settings/Accessibility/Voiceover, or ask Siri to "Open Voiceover Settings".
2. Find "Braille" and double tap.
3. The last item on this screen is a list of braille displays nearby. Provided your braille display is switched on and in Bluetooth mode, it should appear in this list. Find it and double tap it.
4. Your iPhone may display a prompt similar to: "Confirm that the PIN code (xxx) is shown on (braille display)". If it does, double tap "Pair". If it doesn't, you can safely ignore this step.
5. After a short pause, your braille display should connect and show what Voiceover is speaking.

## Some Commands to Get you Started

* Back button: space+b
* Home: space+h
* Swipe left and right: space+dots 1 and 4, thumb keys, panning keys or left and right arrow keys
* Swipe up and down: up and down arrow keys
* Top of screen: space+dots 1-2-3
* Bottom of screen: space+dots 4-5-6
* Double tap: cursor routing keys or select button
* Item Chooser: space+i
* App Switcher: space+h twice quickly (double click home)

See article 3 at the end of this handout for a full list of common commands.

Note that, in some rare cases, displays may deviate from the common commands. For example:

* On the BrailleNote Apex, space+h activates the built-in help system. For the home screen, press the two inner thumb keys.

Please see article 2 for commands specific to your braille display.

## Settings

Braille settings are described in article 1 at the end of this handout.

In addition, note that the setting to control character echo from your braille display is at Settings/Accessibility/Voiceover/Keyboard/Hardware Keyboards.

## Text Navigation – Practical Demonstration Using Messages

Braille support on iOS works on the pretext that every braille display command is mapped to a touch screen gesture. Therefore, text navigation takes place via the rota and not via dedicated commands to move by character, word and so on. Nonetheless, the commands are similar to those found on a notetaker:

* Previous and next item using rota setting (swipe up and down): space+dots 3 and 6
* Select previous and next rota setting (spin left and right): space+dots 2-3 and 5-6

You may also wish to quickly toggle braille translation modes. This is done separately for braille input and braille output, as follows:

* Toggle braille input translation: space+lower h
* Toggle braille output translation: space+g

## Exploring Apps – Practical Demonstration Using Safari

There are a myriad of braille commands in iOS to accomplish a wide variety of tasks. I recommend you review the full list of commands in articles 2 and 3 at the end of this handout and become familiar with the ones that seem most useful to you in order to become as efficient as possible when using your iPhone with a braille display.

However, you should be able to use most apps on your phone using just the commands discussed above – it might just be a bit slow!

## Some More Commands

* Speak position on screen: space+st sign
* Go to status bar: space+s
* Three finger swipe left: space+o
* Three finger swipe right: space+ow sign
* Three finger swipe up: space+th sign
* Three finger swipe down: space+number sign
* Go to Control Centre: space+middle c
* Go to Notification Centre: space+dots 4-6
* Announcement History: space+n
* Magic Tap: space+wh sign
* Keyboard help: space+k

## Braille Screen Input

This is described in article 4 at the end of this handout. Alternatively, a comprehensive audio demonstration can be found on episode 14 of Braillecast: <https://www.braillecast.com/podcast/e014/>

## Unpairing your Braille Display

In iOS 14.4 and possibly other iOS versions, this functionality seems to be broken from within braille settings. Instead:

1. Go to Settings/Bluetooth, or ask Siri to "Open Bluetooth settings".
2. Find your device in the list, swipe down to "More Info" and double tap.
3. On the screen that appears, find the "Forget This Device" button and double tap.
4. When prompted, double tap "Forget Device".

## Further Reading

There are several articles relating to braille support on iOS on the Apple website. In particular, I recommend the following, numbered for easier reference earlier in this handout:

1. Use a braille display with VoiceOver on iPhone: <https://support.apple.com/en-gb/guide/iphone/iph73b8c43/ios>
2. Braille displays supported by iPhone, iPad, and iPod touch: <https://support.apple.com/en-gb/HT202514>
3. Common braille commands for VoiceOver on your iPhone, iPad and iPod touch: <https://support.apple.com/en-gb/HT202132>
4. Type braille directly on the iPhone screen using VoiceOver: <https://support.apple.com/en-gb/guide/iphone/iph10366cc30/14.0/ios/14.0>
5. Use VoiceOver on iPhone with an Apple external keyboard: https://support.apple.com/en-gb/guide/iphone/iph6c494dc6/ios