# Getting Around Orbit Reader 20

Braillists Foundation

www.braillists.org

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Session Covers

* Introduction and physical description
* Differences with other braille displays
* Reading, writing and managing files
* Connecting with your screen reader
* Getting digital braille books
* Finding further help

# Introduction

## Assumptions and Scope

This training assumes familiarity with English braille. Particularly the braille dot positions and alphabet.

You will also benefit from an understanding of common desktop computing concepts such as the cursor, clipboard and menus.

This training focuses on the essential information you need to understand and use Orbit Reader 20. It is by no means exhaustive. You are encouraged to read the product user guide, connect with other Orbit Reader users, and in the event of problems contact your supplier.

## Overview

Orbit reader 20 is a portable refreshable braille display designed to lower the cost and increase access to digital braille.

Orbit Reader 20, in common with other braille displays, raises and lowers rounded pins to represent the patterns needed for braille characters.

You can use Orbit Reader 20 for reading electronic braille books, note taking, and as a braille display and braille keyboard for your smartphone, tablet or laptop.

## Physical Description

Orbit Reader 20 measures 16.8 × 10.9 × 3.2cm (6.6 × 4.3 × 1.25 inches) and weighs 435g (0.96lb).

Place Orbit Reader on a table in front of you with the braille display toward you. Six traditional braille input keys are arranged horizontally along the top of Orbit Reader 20, Dots 3 2 1 on the left and Dots 4 5 6 on the right. In front is a row of three keys, with the wider Space Bar in the middle. Dot 7 key (Backspace) is left of Space Bar, and Dot 8 key (Enter) is right of Space Bar.

The navigation pad, between Dot 1 and Dot 4, contains the four directional arrow keys (Up, Down, Left, Right) and Select in the centre. Panning keys are at each end of the 20-cell braille line. Press the upper half of either key to pan backward or the lower half to pan forward.

The square Power button is in a recessed area around the back of Orbit Reader 20. Hold this button for a couple of seconds to power on or off. Short press to sleep/wake. You will also find the SD memory card slot and Micro USB port in this area.

The battery is housed behind a cover secured by two small screws on the underside of the machine. Typical time for a full charge from flat is around three hours. The battery is advertised as lasting around three days of typical usage. When battery level reaches ten percent, dot 8 in the twentieth cell will flash. You can check battery status by opening the Menu with Select + Up.

At the front corners are holes for attaching a lanyard or shoulder strap using keyrings, not included.

# Differences with Traditional Braille Displays

Price – Orbit Reader 20 in the UK sells for £499 excluding VAT. Other displays typically cost thousands of pounds. Price is more likely to be a consideration for individual purchasers who do not qualify for funding.

Signage quality braille – Orbit Reader dots feel solid to touch and require minimal power to remain raised resulting in longer battery life. Traditional refreshable braille feels softer and springy. Orbit’s braille may be more easily detected by readers with reduced tactile sensitivity.

Refresh speed – Orbit Reader performs a linear refresh. I.e. one cell refreshes at a time. Resulting in the entire display taking around half a second to update. Whereas traditional piezoelectric cells can be refreshed simultaneously. Most braille readers are not impeded by the Orbit’s refresh speed.

Background sound – While Orbit Reader is refreshing you will hear a soft ticking noise, roughly equivalent in volume to someone typing on a QWERTY keyboard.

Cursor routing keys – Orbit Reader was primarily designed for reading braille. As such, Orbit Reader 20 does not include cursor routing buttons used to position the cursor while editing. Other means for positioning the cursor will be covered later.

Feature set - Orbit Reader supports reading and editing braille files from SD memory cards. You can also connect Orbit Reader via USB or Bluetooth to a wide range of mainstream devices. Orbit Reader does not include WIFI nor the wide range of apps found on traditional braille note takers.

# Reading, Writing and Navigating

## Reading Books

To read forward press the lower half of either panning key to manually advance by 20 braille cells. Press the upper half of either panning key to move back by 20 cells.

You can reduce the number of key presses you need to press while reading with automatic scrolling. Start or stop scrolling with space bar. Change speed by holding Space and pressing Up or Down arrows. Add Dot 7 to adjust by smaller amounts.

You can jump to a word, phrase, chapter or section title using Find (Space + F). Books from RNIB include print page numbers written dot 5 dots 2 5 immediately before the page number. Write the braille you are looking for and press Enter.

Skip forward and back with the following keystrokes:

* Paragraph: Up or Down Arrow
* Page form feed or 60 lines (whichever is first): Dot 3 or Dot 6
* Start of file: Dot 1 or Space + Dots 1 2 3
* End of file: Dot 4 or Space + Dots 1 2 3
* Exit file: Dot 7

Orbit Reader remembers your place each time you reopen your book. However, you can also set or remove bookmarks with Space + M. Move to the next bookmark with Dot 5 or the previous Bookmark with Dot 2.

Note, braille books are displayed using the braille code set by the transcriber and cannot be easily changed. In books supplied by RNIB, filenames may include, SEB for Standard English Braille or G1 for Grade 1 Uncontracted braille.

## Writing Notes

Create a new braille file by pressing Space + N or edit an existing file with Space + E. Books from RNIB are set to be write protected to prevent accidental editing.

In new files, the first line you write will become the filename so should end with the .BRF extension. Remember, Orbit Reader 20 uses USA Computer Braille for file and folder names as well as menu items.

USA Computer Braille Tips

* Caps are indicated with Dot 7
* Numbers are written in the lower part of the cell and do not require a numeric indicator
* No contractions
* Different patterns are used for punctuation such as full stop dots 4 6

As you would expect, when editing, the arrow keys move by character and line. Add Space to move left or write by word.

The Context menu, opened with Select, includes options to Mark, Find, Cut, Copy, Paste, Save and Exit.

# Managing Files and Folders

When you exit a file, Orbit Reader 20 returns to the File Manager. Use the following commands to navigate the file system.

* Move between files and folders: Up or Down Arrow
* Move between properties for current file or folder: Left or Right Arrow or Panning keys
* Jump to a file starting with any letter or number: Braille keys
* Open current file or folder: Dot 8 or Select
* Close current file or folder: Dot 7

Use the following commands to perform an action on the currently selected file

* Edit current file: Space + E (Dots 1 5)
* Edit most recently opened file: Space + Dots 1 2 4 6
* Mark file: Space + M (Dots 1 3 4)
* New Folder: Space + O (Dots 1 3 5)
* Delete file: Space + D (Dots 1 4 5)
* Rename file: Space + R (Dots 1 2 3 5)
* Cut file: Space + X (Dots 1 3 4 6)
* Copy file: Space + C (Dots 1 4)
* Paste file: Space + V (Dots 1 2 3 6)
* Protect (or unprotect) file: Space + P (Dots 1 2 3 4)

You can also perform many of these functions from your computer by putting Orbit Reader 20 in Mass Storage mode and connecting via USB. Connect via Mass Storage: Space + Dot 5 + Dot 7.

# Connecting your screen reader

Orbit Reader 20 has two basic modes of operation, Stand-alone and Remote.

Stand-alone mode, used extensively in the previous two sections, is when you want to read and write braille without connecting to another device.

Remote mode enables Orbit Reader to be used as a mass storage device or as a braille display and braille keyboard with your screen reader.

When connected to your screen reader, it is the screen reader that is in full control of how braille is translated. Any changes should be made in your screen reader settings.

On Orbit Reader, You can hold Select and press Left arrow for Stand-alone or Right arrow for Remote.

While specific instructions vary between screen readers, and have been detailed in the Orbit Reader User Guide, the key steps are:

1. Prepare Orbit Reader 20 for connection by switching on and making sure the appropriate Mode and Emulation are selected for your device.
2. In your screen reader braille settings, choose your Orbit Reader.
3. Once connection is established, your screen reader starts sending braille to Orbit Reader and you can use the Orbit Reader keys to control your connected device. Your screen reader must be running to send braille to the Orbit Reader.

While keys are available to switch Orbit Reader to HID, Serial, Bluetooth and Mass Storage modes. All these options can be found from the Menu opened with Select + Up Arrow.

When the menu is opened battery, level is shown. Arrow up once to Mode. Arrow left or right to choose stand-alone, BT or USB. Confirm with Select.

Similarly, while in the menu, arrow up for further options including Emulate, Pair, Bluetooth and USB options.

For example, connect Orbit Reader 20 with an iPhone running iOS 14.

1. With Orbit Reader 20 switched on, open the Settings Menu with Select + UP.
2. Use the arrow and select keys to set Bluetooth to Auto, Pair to Just Works, Emulation to Off and Mode to BT.
3. On iPhone open Settings > Accessibility > VoiceOver > Braille and search for your Orbit Reader.
4. Double tap on the Orbit Reader that matches the serial number of your device. If the connection fails, press the More Info button and remove before retrying.

# Getting Digital Braille Books

* In the UK, RNIB supply Orbit Reader 20 with an SD card containing hundreds of high quality formatted electronic braille books. RNIB Braille Library members can request this SD card, and the same books are available to download from the RNIB Reading Services platform.
* In the United States, National Library Service (NLS), American Printing House (APH) and National Braille Press (NBP) supply professionally transcribed electronic braille books.
* Bookshare® and NFB Newsline dynamically generate braille formatted files from the titles in their libraries.
* You can translate your own braille files using tools such as Send to Braille, BrailleBlaster and many commercial braille translators.

# Finding Further Help

Orbit Reader is supplied with hardcopy braille and print quick-start guides. An electronic braille user guide is supplied on the SD card installed in the machine. Documentation in a range of accessible formats can also be downloaded from the Orbit Reader 20 product page on the RNIB website.

You can contact the manufacturer and find further technical support for Orbit Reader 20 from Orbit Research.

<https://www.orbitresearch.com/product/orbit-reader-20>

Join other Orbit Reader users on the Orbit Reader mailing list.

<https://groups.io/g/orbit-reader>

Connect with other braillists on the Braillists discussion forum.

<http://www.braillists.org/forum>

# Frequently Asked Questions

## Can I get any assistance buying an Orbit Reader?

Yes, you may be able to get assistance from the social care team within your local council, alternatively, RNIB has grants which may fund an Orbit reader.

## What is the difference between the Orbit Reader 20 and the Orbit Reader 20 Plus?

* The Orbit reader 20 has been available since October 2018, whereas the 20 plus launched in September 2020.
* The physical shape and size is identical, the main difference is internal.
* The 20 plus has a built in braille translator, meaning the menu will appear in UEB. This means you don't need to think about computer braille in the same way.
* You can also create text files which can be read on the computer easily.
* The Orbit 20 plus has a clock so will show you the time if you press space with t. Therefore files you create will have the correct date and time.
* You can create alarms on the device.
* The 20 plus also has a basic calendar and calculator.

## Do unicode characters display on the Orbit?

It depends on the screen reader you are using, as the screen reader drives the braille display. A great example of this is how different screen readers handle emojis. VoiceOver on the iPhone will output the description in braille, some screen readers will just output "for" signs, and others the unicode value.

## If the file you are trying to open has no .brf or .txt file extension what happens?

If using the Orbit reader 20 plus, which can handle both of these file types, the device might not be clear on how to handle the file. You should specify the extension.

## How would you download books from Amazon and other eBook platforms to read on the Orbit?

You need to pair the Orbit with another device, which is running the Kindle or other reading app.

## How can you change from grade 1 (uncontracted) to grade 2 (contracted) braille when reading?

You cannot change between braille grades when reading a book, as the brf files contain the exact braille characters. Most books from the RNIB will be in contracted (grade 2) braille, if they are available in uncontracted braille, they will have g1 in the file name.