



Slate™ User Guide

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1 Introduction

The Slate is a portable, refreshable, multiline braille display and stand-alone reader with the following features:

- 3 lines of 40 braille cells with 3x40 model and 5 lines of 20 braille cells with 5x20 model, with pins that arrange into the required pattern to accurately represent any six- or eight-dot braille code, in any language, and for any discipline.
- Cursor routing buttons
- Reads the contents of files on an SD™ (Secure Digital) card or USB drive in the Stand-Alone Mode
- Remote connectivity to PCs and mobile devices for use with a screen reader
- On-board translation from text to braille and from braille to text
- On-board support for contracted braille
- On-board support for over 40 languages, including UEB
- Simple editing functions
- Buzzer and Haptic indications
- Signage-quality braille

2 How the Slate Is Used?

2.1.1 Stand-Alone Mode

Content stored on an SD card (or USB thumb drive) is read in one of three ways:

- Sent by library.
- Prepared on a computer and copied to the device.
- Using onboard translation

In Stand-Alone mode, the Slate displays the contents of files stored on an SD card (or USB thumb drive). It supports text to braille and braille to text translation on-board for English and over 40 other languages. For English, it supports translation to and from contracted and uncontracted braille. In addition, it can be configured to translate contracted braille in other languages. Please refer to the localization section in this guide for more details.

2.1.2 Remote Mode

Connect the device to a computer or mobile device with a screen-reader and then do one of the following:

- Read commercially available titles on Kindle™, Adobe® Digital Editions, or Apple Books® application programs.
- Employ any accessible technology for browsing, utilities, and education.
- The screen reader translates text into Braille code of choice.

3 Transcribed Braille

There are multiple sources for files that are transcribed into high-quality braille. Below are some examples:

- [National Library Service](#) (NLS) provides professionally transcribed, formatted files through the Web Braille project.
- RNIB Reading Services offers professionally transcribed braille titles.
- [National Braille Press](#) (NBP) produces braille books, textbooks, tests, and information for adults and children.
- [Louis Database](#) lists titles produced by over 160 organizations [American Printing House for the Blind](#) (APH) transcribes textbooks for K-12 students.

4 Automatic Translation

In addition to professionally transcribed titles, you may also use dynamic translation to obtain braille.

Automatically translated braille may be appropriate for some forms of reading.

- [Bookshare®](#) dynamically generates braille formatted files from the titles in its library.
- [Sugamya Pustakalaya](#) is India's first and largest collection of accessible books. Users can access a collection of over 3,28,900 books, maintain their individual reading shelves online and download books in chosen formats.
- [NFB-NEWSLINE®](#) is a free audio information service, providing downloadable Braille files of up-to-the-minute content from over 400 national, international, and state newspapers.

5 Translate Braille

- The Slate features built-in forward and reverse braille translation. This is controlled by the profile selected from the menu.

- [BrailleBlaster™](#) is a full-featured transcription software package for creating quality formatted braille.
- [DAISY™ Pipeline](#) provides a comprehensive solution for converting text documents into accessible formats,
- Send to Braille is a shortcut that adds braille to the Windows® Send To menu, which can convert files on your computer into unformatted BRF (Braille Ready Format) files.

6 Documentation Conventions

For consistency and clarity, we have used the following conventions in this document.

Braille keys are indicated by number. For example, if the documentation indicates Dot 1, it shows: Dot 1.

If multiple braille keys are required, the documentation indicates those keys by showing the numbers separated by a space like this: Dots 1 4.

When modifier keys are used, the documentation separates the modifiers from the rest of the keys with a plus (+) sign like this: Space + Dot 1. Modifiers like the Shift key on a regular QWERTY keyboard, are keys you hold down while pressing another key. This modifies the effect of the pressed key. On a braille keyboard, Space is often used as a modifier key to alter the effect of the input keys.

Key mnemonics are written in capital letters for emphasis but are typed in braille lowercase (unless otherwise stated). When one key follows another, the two keys are shown with a comma between them. For example, the command Select, M means to press and release the Select key, then press and release M (Dots 1 3 4) simultaneously.

The Up, Down, Right, and Left directional buttons on the navigation pad are interchangeably referred to as arrows, buttons, arrow buttons, and arrow keys.

The words Keys and Buttons are used interchangeably.

In the descriptions of each Menu option, this documentation indicates the default setting.

Any reference to navigation by “page” while in Stand-Alone mode only means navigation by 1000 characters (page = 1000 characters).

7 Features

The Slate has the following features:

- 3 lines of 40 refreshable eight-dot braille cells each with 3x40 model and 5 lines of 20 refreshable eight-dot braille cells each with 5x20 model that can display 6-dot as well as 8-dot braille symbols.
- A cursor routing button above each braille cell of the first braille display line.
- Onboard forward and backward braille translation
- Bluetooth® wireless technology
- Buzzer and Haptic indications
- Eight Braille input keys and space bar
- Navigation keypad with four directional buttons (Up, Down, Left, Right) and the Select button.
- USB Type-C charging and communication port
- Full-size SD card slot
- USB Host port to connect a USB drive.
- Rocker keys for panning
- User-replaceable rechargeable battery

8 Orientation Slate 340

The orientation of buttons, keys, cells, and slots is important for understanding how Slate operates and how you input and receive information on your braille display.

To begin with, place the device on a flat surface in front of you with the space bar closest to you. This is the proper operational orientation.



battery compartment is located on the bottom of the device.

8.1.1 Side view



On the right side of the device, from front to back, is the USB Type-C (front) and USB Type-A (back).



On the left side of the device, is the recessed on-off switch.

8.1.2 Front view

At the frontside of the device, is the SD card slot. The SD card slot is standard type. The SD card is inserted with the card connector fingers facing up and towards the device. To remove the card, press in and remove your finger to pop

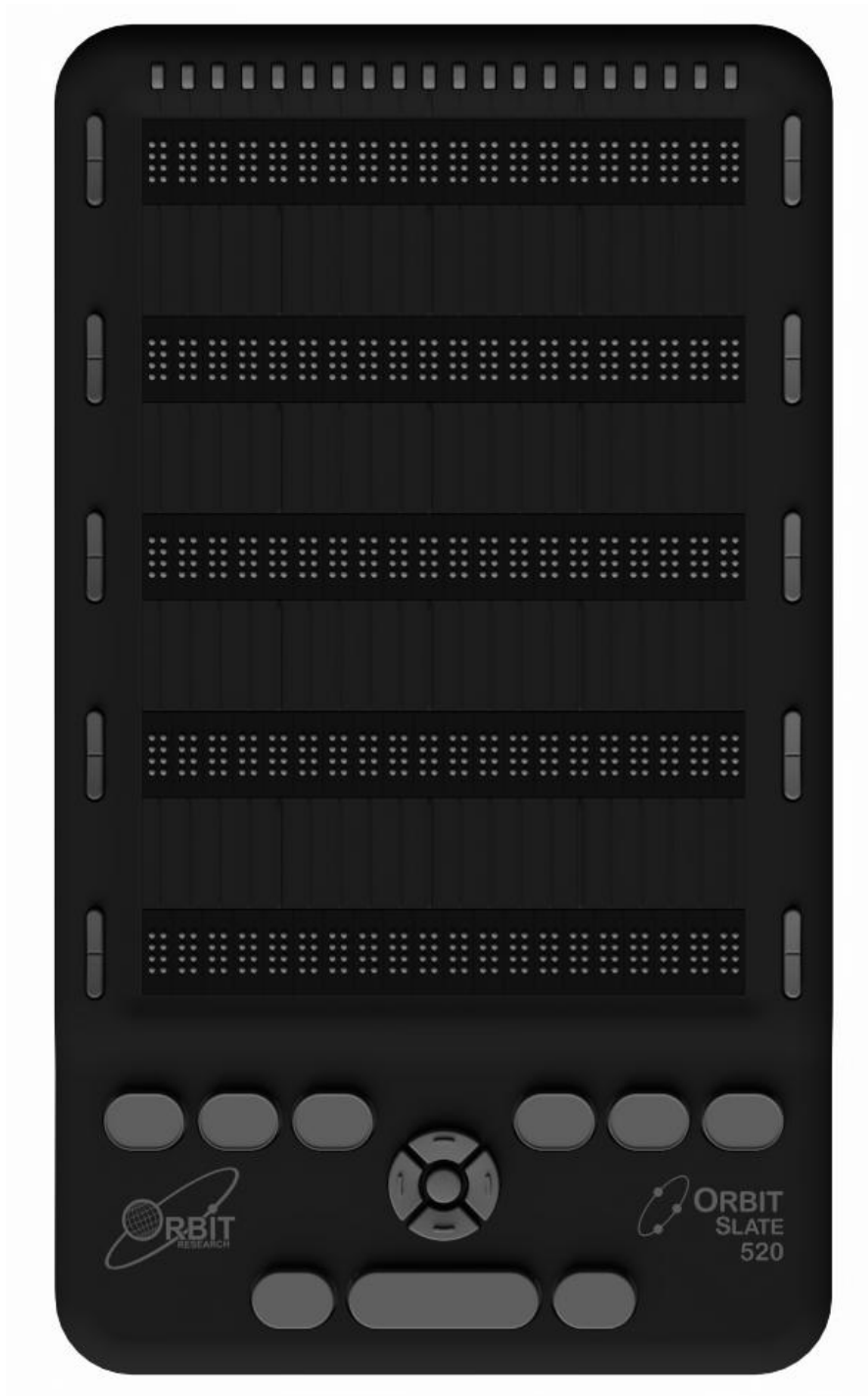
out



9 Orientation Slate 520

The orientation of buttons, keys, cells, and slots is important for understanding how Slate operates and how you input and receive information on your braille display.

To begin with, place the device on a flat surface in front of you with the space bar closest to you. This is the proper operational orientation.



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9.2 Front view

At the frontside of the device, is the SD card slot. The SD card slot is standard type. The SD card is inserted with the card connector fingers facing up and towards the device. To remove the card, press in and remove your finger to pop out.



9.3 Key Locations and Use

When properly oriented, the space Bar (wider key) is closest to you. The Dot 7 input key is to the left of the Space Bar, and the Dot 8 input key is to the right of the Space Bar.

Moving toward the top there is a navigation pad in the middle, between the Braille Input keys and Space bar.

The navigation pad contains the four directional arrow buttons (Up, Down, Left, Right) and the Select button.

The six traditional braille input keys are aligned horizontally above the navigation keypad, Dots 3 2 1 on the left and Dots 4 5 6 on the right. In Stand-Alone mode, the Braille Input keys are used for navigation.

As you continue toward the top you will find 5 braille displays. The Panning keys are at each end of the five braille displays.

For orientation purposes, there are slightly raised tick marks located above each braille cell. Every fifth tick mark is slightly raised than others. For example, the fifth tick mark from the left is somewhat higher than the following markers.

There are cursor routing buttons above each braille cell of the first braille display line.

9.4 Panning Keys

The Panning keys are two-function rocker keys found at either end of the braille display lines.

9.5 8-Dot Braille Cells

The Slate is a six-dot braille device with two additional dots below Dot 3 and Dot 6. These two additional dots are Dot 7 and Dot 8, which are used to indicate capitalization while reading and editing the file in 8 dot mode. These dots also indicate a selected item in the menu, text with attributes or accent marks or a cursor. Their exact use depends on the application you use with the display.

10 Getting Started

The Slate has two modes: Stand-Alone mode and Remote mode. In Stand-Alone mode, the device is a book reader that uses an SD card or a USB thumb drive as storage media. In Remote mode, the device works like a braille display and needs to be connected to a computer or other host with a screen reader.

This section explains how to charge, turn the device on and off, insert the SD card/USB drive, and enter and exit the menus.

10.1.1 Charging the Device

When you receive the Slate, it may be already charged; however, we recommend that it should be fully charged before or during first use. You can use the device and charge it at the same time, so it saves reading time. When the battery in Slate gets to 10% of its capacity, Dot 8 of the last cell of the last display line starts blinking on and off. This behavior is normal and indicates that the battery is low.

To charge the device, use the standard USB-A to Type-C USB cable and the charger power plug provided with the unit. Insert the small end of the cable into the Slate's USB C port. It should slide in without resistance; do not force it. Now

insert the large end of the cable into a computer's USB A port or the charger plug provided. Plug the charger into an AC mains outlet.

If the device is on when you connect the charger, the display shows "-- Charger connected". When you unplug the charger, it shows "-- Charger unplugged". The charger plugged and unplugged indications are displayed briefly even when the unit is off. The language of the message depends on the language you select for system messages from the menu. By default, the language will be UEB Grade 1 (uncontracted). The system messages appear on the first display line.

If you have charged the device for 4 hours or longer, and it does not power on, contact Customer Service at techsupport@orbitresearch.com

10.1.2 Power On and Off

A square Power (on/off) button is located on the left face of the device. See the Orientation section for more information.

To power on the device, press and hold the power button for 2 seconds. Upon successful powering on, the device will give a long vibration and buzzer sound, serving as a clear indicator that it has powered on. The Slate operates all cells to Down during powering on if the device was not properly powered off previously due to any unforeseen circumstances.

When you turn the device on, the Slate resumes from the place you left. If you are using the device or inserting the SD card/USB drive for the first time, the Slate shows the first file or folder name on the SD card.

The Slate displays, "SD card [no media]" when the SD card slot is empty.

To turn off the device, press and hold the Power button for two seconds. The device will give two pulses of vibration and buzzer together to indicate powering off. The Slate operates all cells to Down during powering off and then performs multiple short vibrations until the unit is fully powered off.

The unit may require a total of 3-4 seconds to complete the shutdown. It is advisable to refrain from attempting to turn on the unit immediately after powering it off. Kindly wait for a complete shutdown before initiating the power-on sequence once again.

The Slate has a low-power standby/sleep mode. Quickly tapping the Power button puts the unit in sleep mode. Tapping the Power button while the device is in sleep mode wakes the device. While editing or when connected to Bluetooth, if no keys are pressed for an hour, the unit automatically goes into sleep mode. Otherwise, the device goes to sleep after 10 minutes of inactivity. After five hours in sleep mode, the unit shuts off to conserve power.

10.1.3 Inserting and Formatting the SD Card

The device comes with an inserted SD card with translated braille files already on it, so that you can quickly learn to use the device by reading the material.

The Slate uses standard full-size SD cards from 4GB to 32 GB in capacity. The card must be formatted as FAT32. There is no way to format a card on the device. Most cards come already formatted. However, you can format one as FAT32 on a desktop computer for use with the Slate.

To insert the SD card, find the large slot at the front.

On one of the short sides of the SD card, there are some ridges called fingers or teeth. Position the SD card with the teeth facing up. Now insert the short side with teeth into the device. The SD card should go in smoothly until it gets about a quarter of an inch from being fully in the device. At this point, you feel a slight resistance. The card slot works like a toaster, gently push the SD card in until you hear a click. The card is aligned with the rear edge when properly inserted.

To remove the card, press it in, a little until it pops out and then gently remove it.

10.1.4 Inserting a USB drive

The Slate comes with a standard USB A host port. You can insert a USB flash drive and read its contents. It shows the message "-- USB drive inserted" when the flash drive is plugged in. You can copy or move content from the flash drive to the SD card and vice-versa.

The Slate can support Flash drives up to 32 GB in capacity. The drive must be formatted in the FAT32 format. It is not possible to format a USB drive on the Slate. You use a Windows or Mac computer to format the drive.

10.1.5 About Menus and File Names

The Slate shows internal menus and file names according to the language selected from the menu.

10.1.6 Entering and Exiting Menus

- To Open the menu, press Select + Up Arrow
- To Exit the menu, press Dot 7
- To Move through the menu choices, press the Up or Down Arrows
- To See choices within a menu option, use the Right and Left Arrows
- To Select a menu item, press Select

10.1.7 Device Operational Modes

The Slate has two functional modes. Stand-Alone mode and Remote mode.

Stand-Alone mode is the default operational mode and allows you to read, edit, and browse files without being connected to another device. An SD card or USB drive must be inserted in the Slate while operating in Stand-Alone mode. See the [Stand-Alone Mode](#) section of this document for more information.

Remote mode allows you to connect the Slate to iPhone®, iPad®, and Android™ mobile devices, as well as desktop computers. In Remote mode, Slate acts as an input and output device for the remotely connected host via USB or Bluetooth. See the [Remote Mode](#) section of this document for more information.

To move back and forth between Stand-Alone and Remote modes, use the following commands:

- To switch to Remote mode: press Select + Space + Right Arrow
- To switch to Stand-Alone mode: press Select + Space + Left Arrow

The Stand-Alone mode provides the following features:

- Menu
- File Manager
- Reader
- Editor

Remote mode connects in the following ways:

- Bluetooth
- USB: HID (Orbit), Braille-HID, Serial, or Mass Storage

10.1.8 Languages and Translation

The Slate supports multiple languages. The following languages are pre-loaded on the unit:

- USA computer braille (8 dot)
- USA English Grade 1 (EBAE)
- USA English Grade 2 (EBAE)

Other languages can be loaded from the SD card. These include:

- UEB Grade 1 (uncontracted)
- UEB Grade 2 (contracted)

You can configure the Slate to use the same or different languages for the system messages and to read/write files. For example, you can have the system

menu and messages to be in your local language while you work with UEB Grade 1 (uncontracted) files with the reader/editor or vice versa.

For this, there are language profiles that can be selected and configured from the menu. Alternatively, you can switch between different profiles using the hotkeys. Please refer to the section ‘Setting up the languages’ for more details.

While typing you need to enter the key inputs as per the language selected. For example, if you have selected UEB Grade 1 (uncontracted), you must type in UEB Grade 1 (uncontracted) only. This applies to any key input you provide such as typing for the Find command, or for renaming the file.

11 The Menu

The Slate provides a menu for setting options, checking the battery, and changing modes of operation.

To open the menu, press the Select + Up Arrow keys.

While opening the menu, it displays the first page of the device information , such as the battery status, serial numbers and software version.

Pressing the down arrow keys, it displays the second page of the device information which shows the device bootloader version.

Pressing the down arrow keys again, it shows the menu options let you select from among several choices. For example, the Sort option allows you to choose one of the various options for arranging files in the file manager. The selected option is underlined with Dots 7 8.

To scroll through the other possibilities, press the Right Arrow key. To select the option, press Select. The Slate responds by underlining the word with Dots 7 and 8 to indicate the choice.

To move to another menu item, press the Up or Down Arrow key. When you get to the end of the list of options and press the Down Arrow key, the Slate moves back to the top menu item. Similarly, when you press the Up Arrow from the first menu item, The Slate moves to the last item in the list. This feature allows quick access to the last few menu items and so some options that may be used frequently are located at the bottom of the menu list.

To close the menu and return to your work, press Dot 7.

11.1.1 Setting up Languages

The Slate comes configured to support USA English Grade 1 (EBAE), USA English Grade 2 (EBAE) and USA Computer Braille (8 dot). Additional language

files can be loaded from the SD card. Please refer to the localization section in this guide for more details.

Note: BRF cannot be configured as the system language.

You can also configure the encoding type of the text file.

To allow easy configuration of languages and switching between languages, four language profiles (Profile 1, 2, 3, and 4) are provided. Each profile has options to choose the System Language, Read/Edit Language and Editor Encoding.

11.1.2 System Language

The System Language setting allows you to set the language of the system messages and menu options.

11.1.3 Read/Write Language

The Read/edit Language setting allows you to read or edit the content in the desired language.

Following is the list of languages that can be set as System language and/or Read/Edit language

- eng_uncontracted (USA English Grade 1)
- eng_contracted (USA English Grade 2)
- eng_8-dot-computer (USA Computer Braille (8 dot))
- brf (BRF format files)
- Additionally loaded Languages from SD card

11.1.4 Editor Encoding

The Editor Encoding setting applies to new files only and allows you to save the file in the desired encoding format. Encoding is how the data is stored internally in the text file. There are pros and cons to each of the encoding systems. If you are not sure which encoding to use, we recommend using UTF-8. More details on encoding can be found at https://en.wikipedia.org/wiki/Character_encoding

It has the following options:

- UTF-8
- Unicode-16LE
- Unicode-16BE
- ANSI

The hotkeys for switching between profiles are Select + Dot 1, Select + Dot 2, Select + Dot 3, and Select + Dot 4 for profiles 1, 2, 3, and 4, respectively.

If you accidentally select an unfamiliar language, pressing Select + Dots 1 2 3 restores the default profile.

11.1.5 Menu Availability

The menu is available for the Remote and Stand-Alone modes. Press Select + Up Arrow to open the menu in either mode.

To exit the menu and return to the previous mode, press Dot 7.

11.1.6 Menu Options

Some of the Menu options have a default setting (indicated in the list below). For most of these options, you can move among alternatives by pressing the Right or Left Arrows and then pressing Select. Selected items are underlined with Dots 7 8. Refer to the specific section for further information.

- [Device information page 1](#)
- [Device information page 2](#)
- [Cursor Blink \(1\)](#)
- [Sort \(Name: Ascend\)](#)
- [Split Words \(Off\)](#)
- [Filter Dot 7 \(On\)](#)
- [Wrapping \(On\)](#)
- [Compress Spaces \(On\)](#)
- [Indents \(On\)](#)
- [Profile 1](#)
- [Profile 2](#)
- [Profile 3](#)
- [Profile 4](#)
- [Add language](#)
- [Remove language](#)
- [Reset Defaults](#)
- [Date Format \(dd-mm-yyyy\)](#)
- [Time Format \(12-hour\)](#)
- [Clock Settings](#)
- [Alarm 1](#)
- [Alarm 2](#)
- [USB \(HID Orbit\)](#)
- [Bluetooth mode \(Auto\)](#)
- [Pair \(Just works\)](#)
- [Emulate \(Off\)](#)

- Mode (Stand alone)
- Window mode (off)
- Vib Intensity (60%)
- Buzzer Intensity (Medium)
- Active Display Line (5/3)
- Read UTF8 File (On)

11.1.7 Device information page 1

There are two pages for device basic Information in display. Device information page 1 displays Battery Status, Serial Number and Software Version.

The Battery status menu item displays the amount of energy remaining in the battery as a percentage of the total capacity of the battery. When the battery in the Slate gets to 10%, Dot 8 of the last cell of the last display line blinks on and off. This behavior is normal, indicating that the battery is low.

When the unit is plugged in for charging, the message "-- Charging XX%" is displayed, where XX is the percentage of remaining energy.

The Serial Number item in the menu shows the serial number of the device you are using. This number is useful for service and warranty purposes.

The Version item in the menu displays the version number of the software on your device. You may need the version number when talking to Customer Service. For the latest version of software, refer to the website.

Note: The software version is shown in US computer braille (8 dot) only.

11.1.8 Device information page 2

This menu item displays the Unit Bootloader version, Maintenance status and Auto sleep status.

The Boot Version item in the menu displays the bootloader version number of the software on your device. You may need the boot version number when talking to Customer Service.

The Maintenance Status item in the menu displays whether the current maintenance status is On or Off. If the maintenance status is On, the device will operate all pins up and down every 24 hours while in power-off mode.

The Auto Sleep Status item in the menu displays whether the current auto sleep status is On or Off. If the auto sleep status is On, the device will go to sleep

mode automatically when it remains inactive for more than 10 minutes. If the auto sleep status is Off, the device will not go to sleep mode automatically.

Note: The software version is shown in US computer braille (8 dot) only

11.1.9 **Cursor Blink (1)**

The Cursor Blink option works only while editing in the Edit Box or Editor mode. This option allows selecting the number of seconds between blinks. The default setting for the Cursor Blink option is one second between blinks. The setting choices are 1, 2, 3, 4, 5, 10, 15, 20, 25, 30, 45 and 60 seconds, and 0 where the cursor does not blink. To make a selection, press Select.

11.1.10 **Sort (Name: Ascend)**

The Sort menu item lets you change the order in which files on the SD card or USB drive are displayed using the Slate's built-in File Manager. The sorting categories are: Name, Date, Size, and Last Read.

Additionally, you may sort files within the selected category in ascending or descending order. After selecting a category, press the Right Arrow until you reach either Ascend or Descend in the list and press the Select button. The Slate displays the files in the selected order. The default setting for this menu item is Ascending (A to Z). To return to the File Manager, press Dot 7 from Stand-Alone mode.

11.1.11 **Split Words (Off)**

The default setting for Split Words is Off. In the default setting, the Reader tries to put as much content on the display as possible without splitting a word. However, if you want full cells of braille, no matter the content, set Split Words to On. When Split Words is on, the Reader shows partial words. When you pan to the next cells of braille, the remainder of that word appears at the beginning of the line. To make a selection, press Select.

11.1.12 **Filter Dot 7 (On)**

The default setting for Filter Dot 7 is On. The Filter Dot 7 menu item lets you turn off the Dot 7 that frequently appears in some BRL and BRF files. The Dot 7 is filtered by default, but if you want to make a BRL or BRF file that uses eight-dot braille, turn this setting off. To make a selection, press Select.

11.1.13 **Wrapping (On)**

The default setting for Wrapping is On. The Wrapping option is the Slate's way of reflowing files that are already formatted for embossing. Normally, formatted files contain line-end indicators every 38-40 characters, which starts a new line. This option eliminates extra spaces, making it easier to read on a the display. To make a selection, press Select.

11.1.14 **Compress Spaces (On)**

Carriage returns, blank lines, and tabs represent extra spaces (or white space) in a document. These spaces take up a lot of room and therefore slow down reading on a braille display. The Compress Spaces option eliminates superfluous blank lines and spaces. If multiple blank lines or spaces appear in the file, they are compressed to a single space. This setting is especially useful when reading formatted text files that contain many blank lines.

The default setting for Compress Spaces is On. To make a selection, press Select.

11.1.15 **Indents (On)**

Indent lets you choose if the Compress Spaces setting should be applied to the leading spaces of paragraphs or not. If Indents is set to on, the paragraph is displayed with leading spaces if present, regardless of the Compress Spaces setting.

If Indents is set to off, the Compress Spaces setting is applied to the leading spaces of the paragraph. The default setting for Indents is On.

11.1.16 **Profile 1**

The Profile 1 settings are configured by default for using the device with UEB Grade 1. However, it can be configured to select any of the available languages and encoding schemes. The default configurations are as follows:

- System Language: UEB Grade 1 (uncontracted)
- Read/Edit Language: UEB Grade 1 (uncontracted)
- Editor Encoding: ANSI

11.1.17 **Profile 2**

The profile 2 default settings are configured for using the device with the UEB Grade 2. However, it can be configured to select any of the available languages and encoding schemes. The default profile 2 configurations are as follows.

- System Language: UEB Grade 2 (contracted)
- Read/Edit Language: UEB Grade 2 (contracted)
- Editor Encoding: ANSI

11.1.18 **Profile 3**

The profile 3 default settings are configured mainly for using the device with the Computer Braille. However, it can be configured to select any of the available languages and encoding schemes. The default profile 3 configurations are as follows.

- System Language: US Computer Braille (8 dot)
- Read/Edit Language: BRF
- Editor Encoding: ANSI

11.1.19 **Profile 4**

The profile 4 default settings are configured mainly for using the device with the language loaded from the SD card. However, it can be configured to select any of the available languages. The default profile 4 settings are as follows.

- System Language: <Languages from SD card>
- Read/Edit Language: <Languages from SD card>
- Editor Encoding: UTF-8

The default settings of Profile 1,2,3, and 4 can be changed with Right/Left Arrow keys, under the System Language, Read/Edit Language and Editor Encoding options.

For example, if you wish to have the system language as UEB Grade 1 (uncontracted) and work with BRF files, you can select Profile 3 that has the following default settings.

- System Language: UEB Grade 1 (uncontracted)
- Read/Edit Language: BRF
- Editor Encoding: ANSI

Likewise, all profiles can be configured as per the user's requirements.

Please refer to the localization section in this guide for additional information.

11.1.20 **Add Language**

The Add Language menu option lets you load language files from the SD card to the internal memory of your Slate. It lets you load as many languages as the available memory permits. If the memory is insufficient, the unit will display a "memory full" message. If you encounter this, you will need to remove some languages from the memory before you can load new languages.

You can scroll through the available language files on your SD card by pressing the Right or Left Arrow keys and press Select to add a language.

It may take some time for the file to be loaded. The unit shows a busy indication by displaying "busy" on the display.

11.1.21 Remove Language

The Remove Language menu option lets you remove language files from the internal memory of your unit so that you can make space for loading other languages.

You can scroll through the loaded languages using the Right or Left Arrow keys and press Select to remove a file.

You can also use the “remove all” option that appears as the first item to remove all the loaded languages at once. It does not remove the US English Grade 1 (EBAE), English Grade 2 (EBAE) and the US computer braille (8-dot).

If you remove a language that is currently assigned in a profile, English 8-dot computer Braille is assigned to the profile by default.

It may take some time for the file to be removed. The unit shows a busy indication by displaying “busy” on the display.

11.1.22 Date Format (dd-mm-yyyy)

The Slate supports the following date formats:

- dd-mm-yyyy
- mm-dd-yyyy
- yyyy-mm-dd

The default date format is “dd-mm-yyyy”. You can change the date format using left and right arrow keys and set the date format by pressing the Select key.

11.1.23 Time Format (12-hour)

The Slate supports the 12/24 hours time formats. The default Time format is 12-hour format. You can change the time format using left and right arrow keys and set by pressing the Select key.

11.1.24 Clock Settings

The Slate includes a clock. You can check the date and time by pressing SPACE + Dot 2 3 4 5. The date and time are also used when creating, editing, and saving a file or folder.

The default format for time and date is HH:MM DD-MM-YYYY (where, HH is Hours, MM is Minutes, DD is Date, MM is Month and YYYY is Year). You can scroll through these fields with the Left and Right navigation keys. The active field (where the cursor is currently) will be underlined. Press the Select key to modify the current field.

Press the Up Arrow key to increase and the Down Arrow key to decrease the value in the date and time fields. For instance, if the current date is 01-08-2020 and you want to change it to 01-08-2021, use the Left/Right navigation keys to move the cursor to the year field (YYYY) of the date. Press the Up Arrow key to change the year from 2020 to 2021 and the Select key to save the changes. Press Dot 7 to exit from the Menu. The value in a field wraps once you reach the last valid value. For instance, minutes ranges from 00 to 59. So, if you press the Up Arrow key when the time is 09:59, it increments the time to 10:00.

11.1.25 Alarm 1

The Slate provides two alarms. The first alarm can be configured from this menu item.

There are six fields to configure the alarm. You can navigate through different fields by pressing the Left and Right arrow keys and Press the Up and Down arrow keys to navigate through different choices in the field. The current field (where the cursor is placed) is underlined. Press Dot 7 once to save all the changes you have made in the alarm settings.

Alarm Status (OFF): Press the Right arrow key to go to Alarm status. Press Select to enable the editing cursor. You can toggle the Alarm status between ON and OFF by pressing the Up and Down arrow keys.

Time (HH:MM): Next to the alarm status item is the time setting. Press the Right arrow key to go the time field. The format for time is HH:MM in either 12 or 24-hours format depending on the set configurations of the menu item Time format (12 hours). Press the Up and Down arrow keys to set the values of the field and Press the Right arrow key switch between the fields.

Repeat (Mon): Press the Right arrow key to go the repeat field and set the desired days by pressing the Up/Down arrow key. You can choose any day from Monday to Sunday and there are two additional options: All and Once. When you set “All” the alarm rings every day and when you set “Once”, it rings only once at the next occurrence.

Ringtone duration (1 to 59): Press the Right arrow key to set the alarm duration. The range of the alarm duration is 1 to 59 seconds and the default is 20 seconds.

Snooze time (1 to 59): Press the Right arrow key to set the Snooze time. The range of the snooze time is 1 to 59 minutes. The default is 5 minutes.

The alarm rings at the time and day it has been set for even if the device is in sleep mode or completely shut off. Press Dot 7 to cancel the alarm or press Space to Snooze. The alarm automatically snoozes after the ringtone duration if not acknowledged. It repeats this cycle 5 times and then turns off automatically.

11.1.26 **Alarm 2**

The second alarm can be configured from this menu item. It has similar settings to Alarm 1.

11.1.27 **USB (HID Orbit)**

The USB menu selects between the four possible USB protocols: Human Interface Device HID Orbit, HID Braille, Serial, or Mass Storage. The default setting for USB is HID Orbit. To select the option, press Select or Dot 8. For more information, see the USB Connectivity section under Remote Mode.

11.1.28 **Bluetooth (Auto)**

There are three choices under this menu option.

- Bluetooth Auto
- Bluetooth manual
- Bluetooth OFF

The default setting for Bluetooth is Auto. If there is any screen reader activity running on the paired device, the Slate automatically switches to Bluetooth Remote mode. If you do not want an automatic Bluetooth connection, switch to manual option. To disable Bluetooth completely, select OFF. To select another option, press select or Dot 8.

For more information, see the Using the Bluetooth Connection section under Remote Mode.

11.1.29 **Pair (Just Works)**

The Pair menu item selects a Bluetooth pairing scheme. The Slate uses the selected scheme when it responds to a Bluetooth pairing request from a host device. To select the option, press Select or Dot 8.

The two choices are:

Just Works – This is the default Bluetooth pairing scheme. When using this scheme, the Slate automatically pairs to any device that sends a pairing request.

Confirm code – This is the most secure pairing scheme. With this scheme, the Slate responds to pairing requests by showing a random number on both the Slate's braille display and on the host device. To confirm the request, ensure that the numbers match and press Dot 8 on the Slate. To reject the pairing request, press Dot 7.

11.1.30 **Emulate (off)**

The Emulation option allows you to choose how the device appears to the Host

screen reader applications while operating in Remote mode.

For a 520 model, it offers two emulation settings, “Orbit Reader 20 – 20 cells” and “Orbit Reader 20 – 100 cells”. If “Orbit Reader 20 – 20 cells” Emulation is selected, the Slate appears as Orbit Reader 20 and advertises itself as a 20 cells device. If “Orbit Reader 20 -100 cells” is selected, it appears as Orbit Reader 20 and advertises itself as a 100 cells device.

Similarly, for a 340 model, it offers two emulation settings, “Orbit reader 40– 40 cells” and “Orbit reader 40– 120 cells”. If “Orbit reader 40– 40 cells” Emulation is selected, the Slate appears as Orbit reader 40 and advertises itself as a 40 cells device. If “Orbit reader 40-120 cells” is selected, it appears as Orbit reader 40 and advertises itself as a 120 cells device.

If Emulation mode is Off, it appears as Slate. To select the option, press Select.

11.1.31 **Mode (Stand-Alone)**

By default, the Slate operates in Stand-Alone mode where you read and write files stored on the SD card. To specifically set the unit to another mode, select among Remote, BT (for Bluetooth,) or USB. the Slate tries to automatically switch to Bluetooth or USB depending on screen reader activity, but if you want to, for instance, specifically switch back to Stand-Alone mode from Remote mode, or switch the interface from Bluetooth to USB, use this option. To select the option, press Select.

11.1.32 **Reset Defaults**

The Reset Defaults item in the menu resets all your menu settings to the factory default settings. To reset to the default settings, press the Select button. This action resets defaults and takes you to the top of the Menu options list (Battery Status).

11.1.33 **Window Mode (Off)**

The Window mode item lets you choose how file content should be displayed when you are reading or editing a file. Please refer to The Display Modes for more details.

11.1.34 **Vib Intensity (60%)**

This lets you configure the intensity of the vibrator used to generate the haptic feedback. The default is 60%.

11.1.35 **Buzzer Intensity (Medium)**

This lets you configure the intensity of buzzer used to generate the haptic feedback. It offers 3 settings Low, Medium and High. The default buzzer intensity is Medium.

11.1.36 **Active Display Line (5/3)**

This setting is to make it easier to read the display while simultaneously operating the keyboard, possibly with one hand. The user to configure which line is active in one-line mode gives the user the flexibility to choose the line that's most comfortable for them.

Screen reader messages and system messages will be displayed on the display line configured in the menu "Active Display Line".

When user sets the Emulation 'Orbit Reader 20-20cells' in Slate-520 or 'Orbit Reader 40-40cells' in Slate-340, then the Remote mode messages are displayed on Active display line.

The default active line is the bottommost line of the display. For Slate-520, it offers 5 settings as Line 1, 2, 3, 4, 5 and the default line is 5th line of display. For Slate-340, it offers 3 settings as Line 1, 2, 3 and the default line is 3rd line of display.

11.1.37 **Read UTF8 File (On)**

The Orbit slate can automatically read UTF8 files with a BOM but cannot properly read UTF8 files without a BOM. This menu option allows you to read UTF8 files without a BOM correctly. Set the "Read UTF8 File" option to ON to read UTF8 files properly.

When opening any file, if the "Read UTF-8 File" option is ON and the opened file's auto-detected encoding format is ANSI, the file will be considered as UTF-8 instead of ANSI. The Orbit slate will then open the file using the UTF-8 encoding format.

When opening any file, if the "Read UTF-8 File" option is ON and the opened file's auto-detected encoding format is other than ANSI (e.g., UnicodeLE, UnicodeBE, UTF8-BOM), the file encoding format will follow the auto-detection rules.

When opening any file, if the "Read UTF-8 File" option is OFF, the file encoding format will follow the auto-detection rules. The Orbit slate will open the file in the auto-detected encoding format.

By default, the "Read UTF-8 File" option is set to ON.

You can enable or disable the 'Read UTF8 File' option by pressing the hotkey [Space + Dot 1 3 6] from the file manager. This option allows for the reading of UTF8 files without BOM. Note that this hotkey will not toggle the option if the file is already open.

12 Stand-Alone Mode

Stand-Alone mode is the default operational mode and allows you to read, edit, and browse files without being connected to another device. A formatted SD card or USB drive must be inserted in the Slate while operating in Stand-Alone mode. This card must contain the files you wish to read.

Stand-Alone mode operates in the following ways:

- File Manager
- Menu
- Reader
- Editor

13 File Manager

The File Manager is where you select a file stored on the SD card or USB drive to read on the Slate. You can also create new files and folders, view the properties (such as the file size and current reading position) and copy, rename, and delete files.

The file Manager displays the files on a multiline display. It shows the number of files equal to the number of display lines available with the display.

The current selected file is shown by a static cursor (raised dots 7 and 8) on the first two letters of the file name.

Pressing the Up or down arrow moves the static cursor to the Previous/Next file in the list. If the file is not in the display view, it scrolls into the display.

Pressing commands (to open, delete, rename, etc..) act on the current selected file.

When navigation commands such as go to the top/bottom of the file list are performed, the display shows the first/last files equal to the number of display lines of the display from the new position.

You can directly open files and folders displayed on the Braille display line by using the left/right forward/backward panning keys corresponding to that display line.

When moving through the list of files, the Slate shows initial X characters of the file name matching to the display line size of the display. You may scroll to the rest of the information about the file, such as the rest of a long file name, its size, and date, by using the left/right arrow keys to move the display window. You can change the way files are sorted in the file list using related menu options.

Each item on the file list includes the following items:

- Filename and extension
- The current reading position in the file as a count of characters
- Size in KB (kilobytes)
- Last modified time
- Protected or Unprotected

Only one column is displayed per line (with panning as necessary). Pressing Left or Right Arrow moves to the previous or next column heading (file information). Upon exiting the Reader (Dot 7), you are returned to the same place and column in the File Manager.

The language of the file name is displayed according to the system language. For instance, if the file is in UEB Grade 1 (uncontracted) and the default language is also UEB Grade 1 (uncontracted), it will be displayed in UEB Grade 1 (uncontracted). But If the system language is set to a different language, and the file name is in UEB Grade 1 (uncontracted), the file name may appear unrecognizable. However, you can quickly change the profile using a hotkey to read the file name in the appropriate language.

The Slate supports two media storage devices – external SD card and external USB drive. You can use one or both simultaneously for reading and creating new files.

13.1.1 File Manager Drives

The file manager shows two drives at the top level:

- SD card
- USB drive

Pressing the Select key opens the root of the directory of the chosen drive. When you press the Select key on the SD card drive, it opens the root directory of the SD card and shows the list of files available on the SD card. Pressing Dot 7 will take you back to the top level in the file manager. Press the Down arrow key to go to the USB drive and press Select. This opens the root directory of the external flash drive connected to the USB host port.

You can directly open the SD card or USB drive displayed on the Braille display line by using the left/right forward/backward panning keys corresponding to that display line.

When there is no flash drive connected to the USB host port, the display shows “USB drive [No media]”. Similarly, it shows “SD card [No media]” when there is no SD card inserted.

Inserting a flash drive into the USB Host port shows the message “USB drive inserted” and it shows the message “USB drive removed” when you remove it.

If you are browsing the contents of the flash drive and remove it from the USB Host port, the File Manager takes you to the top directory of the file manager.

You can copy files between SD card and USB drive using available commands.

13.1.2 File Manager Commands

The following are the commands which you can use in the File Manager. Most of the commands for files also work for folders.

To open a file or folder, press select or Dot 8. Pressing Select or Dot 8 opens the file or folder.

To go to previous or next file or folder, press Up or Down Arrow. Pressing Up or Down Arrow moves to the previous or next file in the list.

To go back one folder level, press Dot 7. Dot 7 acts like a "back" key to exit the current activity. If you are already in File Manager, pressing Dot 7 moves back one level where you have multiple subfolders open. If you are at the root level, Dot 7 does nothing. If you are in one of the columns of information, for example, size or date, then pressing Dot 7 returns to filename.

To move through file information, press Left or Right Arrow. This command moves you through the file information by headings. See **Error! Reference source not found.** section for more information.

To open the Menu, press Select + Up Arrow. Pressing Select + Up Arrow opens the Menu.

To scroll text, press Left or Right Arrow keys. If the file name is longer than the display, scrolling right using right arrow key displays more of the file name. When you get to the end of the file name, pressing the Right arrow key moves you to the next item of file information, like position, size, date, and so on.

To make a New Folder, press Space + O (Dots 1 3 5). The New Folder command opens the Edit Box where you may type the name of the new folder. Pressing Dot 8 saves the new folder name and returns you to the file list with that folder selected. If you do not name the folder, pressing Dot 8 names the folder as New Folder. Press Select to exit without making a new folder.

To delete a file or folder, press Space + D (Dots 1 4 5). This action deletes the currently selected file(s) or folder(s). Only empty folders and unprotected files can be deleted. A confirmation is required before the file or folder is deleted. When the message "-- Confirm action" is displayed, press Dot 8 to confirm or press Dot 7 to cancel.

To rename a file or folder, press Space + R (Dots 1 2 3 5). The Rename File command allows you to change the name of a file or folder. To use it, press the Rename command. The Slate responds with an Edit Box containing the original file or folder name. Edit the name or type a new one and press Dot 8. Press Select to exit without renaming a file or folder. Note: The key input for the file name should be entered as per the selected system language.

To cut a file, press Space + X (Dots 1 3 4 6). This action cuts the currently selected file(s) or empty folders from their location and places it (them) on the clipboard to be used with the paste command.

To copy a file, press Space + C (Dots 1 4). The Copy File command makes a copy of the currently selected file(s) or empty folders and places it (them) on the clipboard to be used with the paste command.

To paste a file, press Space + V (Dots 1 2 3 6). This action pastes the file(s) or folder(s) that are currently on the clipboard into the current location in the File Manager. If no file or folder is on the clipboard, no action is taken.

To mark a file, press Space + M (Dots 1 3 4). When moving multiple files, use the Mark File command to mark each individual file before using Cut, Copy, or Delete. To Mark a file, place arrow on the file and press Space + M.

To clear a marked file, press Space + M again.

File Manager indicates marked files by raising Dots 7 and 8 of the first letter of the file name.

To Protect or unprotect a file, press Space + P (Dots 1 2 3 4). To protect a file from accidental changes, arrow to the file and press Space + P. To remove the protected status, select the file and press Space + P again. To determine if a file is Protected, arrow Right or Left to the Unprotected/Protected heading.

Pressing the “Where am I” command [Space + Dot 2 4 5 6 7] shows the file properties of the current file/folder on the display. It shows the file/folder properties as a list view, i.e., one property on one line of the display. Pressing the dot 7, exit the view, and go back to the file manager.

When file is opened and “Where am I” command [Space + Dot 2 4 5 6 7] pressed, it shows the current reading position of the file in %.

To toggle the "Read UTF8 File" option, press [Space + Dot 1 3 6] which facilitates the reading of UTF8 files without BOM. Note that this hotkey will not toggle the option if the file is already open.

13.1.3 More about Copying and Pasting Files

When copying or pasting a file that results in another file with the same name, File Manager adds an extension to indicate that the new file is a copy. For example: if you copy book.brf to a folder that already contains book.brf, the new file becomes book_1.brf and the original book.brf remains unchanged.

If the SD card runs out of space before a file operation is completed, File Manager shows, "-- Error copying file xxx" where xxx is the file name.

When copying a large number of files, or large files that can take some time, the File Manager displays progress messages during the copy operation.

If copying a file takes more than five seconds, File Manager displays, "-- Copying xxx (yy%)" where xxx is the name of the file and yy is the percentage complete. This percentage is updated after every 10% of the progress. For the command keys, go to the [File Manager Commands](#) table under the File Manager section.

13.1.4 File Movement Commands

To move to the first file, press Space + Dots 1 2 3. Pressing Space + Dots 1 2 3 moves File Manager selection to the first file in the current folder.

To move to the last file, press Space + Dots 4 5 6. Pressing Space + Dots 4 5 6 moves File Manager selection to the last file in the current folder.

To Incrementally search file list, Type the file name quickly. To find a file quickly, type the first few letters of the file's name. File Manager highlights the first file matching the letters you typed.

13.1.5 Supported File Types

- BRF: It is translated, formatted braille. Device displays exact representation
- BRL: It is Translated, unformatted braille. Device displays exact representation
- TXT: It is Text format. Device displays as per the language selected.

In addition to the supported file types, the Slate shows the contents of any file. This feature is useful, however, to examine files that do contain readable text even if it is not a supported file type. However, some files may not contain readable content.

There are several excellent braille translation systems available in the U.S. If you obtain textbooks from APH or get transcribed titles from NLS or NBP, the braille should be correct and formatted. You may also get braille translation software that produces automatically translated braille using programs like 'Liblouis'. Alternatively, you can have Bookshare automatically generate braille files of the titles available.

13.1.6 Preparing Files

To prepare BRF files for placement on the Slate, follow these guidelines:

- Determine the translation type.
- Translate the file.
- Place the file onto the SD card or use the Mass Storage protocol to copy from your desktop computer.

To copy files to the SD card, remove the card from the Slate and place it into a card reader on your computer. Alternatively, you can connect the USB cable from the Slate to your computer and activate the Mass Storage protocol on the Slate by either pressing Space + Dots 5 7 or selecting Mass Storage from the USB option in the menu. When using the Mass Storage protocol, the Slate shows up as a drive on the computer, and here, you cannot use other functions of the slate.

14 The Reader

In Stand-Alone mode, the Slate displays the content of files stored on an SD card and USB drive. It translates the text into the language that you select for the Read/Edit option in the menu section.

The Slate is designed to be a stand-alone reader. Placing BRF, BRL, or TXT content (see [File Types](#) section) on an inserted SD card/USB drive turns it into an on-the-go braille book reader. When first powered on, the Slate displays the contents of the first file on the SD card/USB drive. To get to the file list, press Dot 7. Go to the desired file using the Up or Down Arrow key. Press Dot 8 or Select

to open the file. Use Left and Right Panning keys to read it. There are many other functions in reading mode such as Find, Power Move, Bookmarks, and even a menu to set preferences. The following sections describe the commands and settings that can be used while reading.

When you turn the device on, the slate resumes from the last place of the last file in use. For first-time use, it displays the first file or folder on the SD card. Press Dot 7 to close the file and display File Manager, which shows a list of files on the SD card. If there is no SD card inserted, the message "-- No SD card" is displayed.

You can switch the reading language with the help of hotkeys, even if you are in the middle of the file. Please note that if you change the language, the system will translate the file again as per the new language selected.

When you reach the end of the file, "-- End of file" is displayed by the Reader. Similarly, if you are at the beginning of the file, "-- Start of file" is displayed.

14.1.1 Reader Commands

While in Stand-Alone mode, the following commands are available.

To Go to Previous or Next display by fixed number of display lines, press the pan keys. For example, pressing the row 1 back pan key, scrolls to previous display by one display line and pressing the row 1 front pan key, scrolls to the next display by one display line. Similarly, if you press row 2 pan keys, it scrolls to the previous/next display by two display lines and so on.

To Go to Previous or Next Character, press Left or Right Arrows. If you press Right Arrow key, the next letter appears on the right side of the last display line of the display. To conform to traditional braille display navigation commands, the Reader also supports Space + Dot 3 and Space + Dot 6.

To Go to Previous or Next Word, press Space + Left or Right Arrows. Pressing Space + Right Arrow, the next word appears on the right side of the last display line of the display. The Reader also supports Space + Dot 2 and Space + Dot 5.

To Go to Previous or Next Line, press Up or Down Arrows. Pressing the Previous or Next Line command moves to the previous or next carriage return in the file. Also works with the bottom most Left/Right Backward Panning keys.

To Go to Previous or Next Page, press Dot 3 or Dot 6. Pressing Dot 3 or Dot 6 moves the cursor back or forward in the file to the next page marker (form feed) or 1000 characters, whichever comes first.

To Go to Top or Bottom of a file, press Dot 1 or Dot 4. Pressing Dot 1 moves to the top of a file; pressing Dot 4 moves to the bottom of a file.

To go to Previous or Next Display, press Dot 1 + Up Arrow or Dot 1+ Down Arrow. Pressing Dot 1+ Up arrow moves to the previous display and pressing Dot 1+ Down arrow moves to the next display.

To Exit File, press Dot 7. If reading a file, pressing Dot 7 returns you to your previous location.

To Open the Menu, press Select + Up Arrow together.

To Set or Clear a Bookmark, press Space + M. In addition to the automatic bookmark placed when you close a file, the Slate lets you set additional bookmarks. Reader displays the message "-- Bookmark added" or "-- Bookmark cleared" if there was already a bookmark at that position.

To Go to Previous or Next Bookmark, press Dot 2 or Dot 5. The Reader responds by moving the cursor to the bookmarked position. The bookmarked location appears as the first character on the display. If there are no marks in the indicated direction, "-- No more bookmarks" is displayed.

To Power Move in Forward direction or Backward direction, press Space + Dots 8 + Down Arrow or Space + Dots 8 + Up Arrow. See Power Move Forward and Back section for more information.

To Find Braille, press Space + F (Dots 1 2 4). Pressing Space + F opens an input field (Edit Box) with a cursor. By default, it shows the last search string on the display. This allows you to perform a search in a specific braille format by typing the text in the same braille format. Press Dot 8 to begin the search. To exit the Edit Box without performing a search, press Select. See Edit Box and Find Braille sections for more information.

To Find Next Braille, press Dot 8 + Down Arrow. Pressing Dots 8 + Down Arrow repeats a previous search forward from the point in the file where you are. If there is no text in the Find Edit buffer, the Reader uses the text at the cursor. See the Find Braille section for more information.

To Find Previous Braille, press Dots 8 + Up Arrow. Pressing Dots 8 + Up Arrow repeats a previous search backward from the point in the file where you are. If there is no text in the Find Edit buffer, the Reader uses the text at the cursor. See the Find Braille section for more information.

14.1.2 Power Move Forward and Back

The Slate's power move commands provide a quick means of moving/searching through large sections of a file to find a known location in the document. A power move operates by using boundaries and moving 50% between them with each press of the key command. In essence, by using a power move to search within a file, you are drilling down to the information using a binary command. When you press Space+ Dot 8 + Down Arrow or Space + Dot 8 + Up Arrow, the Reader moves in the following ways:

On the first press, the cursor moves halfway between the current position and the start (Dot 1) or end (Dot 4) of the file, which acts as the boundaries for the power search.

Subsequent presses treat the moved-from position as the new boundary in that direction. So, if you are at the beginning of the file (or 0%) when you press the Space + Dot 8 + Down Arrow, the Reader moves the cursor to halfway between 0% and 100%. You are now at 50%, and this becomes the new boundary. The initial boundary is at the original position of 0%. Therefore, if you press Space + Dot 8 + Up Arrow, you move halfway between 50% and 0% to end at 25%. Or, if you press the Space + Dot 8 + Down Arrow, you move halfway between 50% and 100% to end at 75%.

Each time you press Space + Dot 8 + Up Arrow or Space + Dot 8 + Down Arrow keys, the Reader shows the percentage in the first few cells of the display line and fills the rest of the cells with text at that position. This continues until you press some other key.

14.1.3 Find Braille

To find specific braille text, use the Find command (Space + F). The Slate responds by opening an input field (see [Edit Box](#) section) with a cursor, which is indicated by Dots 7 and 8. By default, it shows the text at the current cursor location in the edit box. Unlike the Power Move, which searches by known location of text, the Find command searches the entire file for instances of the braille text you enter in the input field. If you have searched for something previously, that text appears in the Edit Box with your cursor at the end.

To find a word, first press Space + F to enter the Edit Box. Type the word you wish to find, in the language selected for the reader/editor and then press Dot 8 to start the search moving forward in the file. To search moving backward in the file, press Dot 8 + Up arrow. The word is shown as the first word on the display. If the word is not found, the message "-- Not found" is displayed. Press Dot 7 to clear the message. To exit the Edit Box without finding the word, press Select.

After the word is found, to continue searching, press Dot 8 + Down arrow to find the next occurrence (forward in the file) or Dot 8 + Up arrow to find a previous occurrence (towards the beginning of the file).

If you are searching for text in a contracted braille file, you must type the text you want to search in contracted braille.

If you are searching in a plain text file, you must type the text you want to search in Computer Braille. See [Appendix A - Computer Braille Chart](#) for details.

You can search for terms up to 255 characters long. Searches are generally not case sensitive. A search for the word "animal" results in finding both lowercase and uppercase versions of that word (animal/Animal). However, if you want to find words with upper case letters only, type the text you wish to find with the braille indicator for capitalization included (in contracted braille, one Dot 6 precedes a capital letter, while two Dot 6s precede an entirely capitalized word. In Computer Braille, capital letters include Dot 7). For example, a search for the capitalized word "Animal" gives the results for "Animal" (capitalized), but not "animal" (lowercase).

Additionally, searches match both whole and partial words. Searching for "an" finds "an" (whole) and "man" (partial). To restrict searches to whole words, add a space at the beginning or end of the word. The Reader matches the space with any non-printing character such as spaces, tabs, and line feeds.

Read the section on [Edit Box](#) for editing commands and navigation functionality.

In "search files", the Reader moves from reading files to searched text and displays it at the beginning of the display line. If the text is not found, then the Reader displays "Not found" and gets back to its previous position. While searching through large documents, the Slate displays "Busy" while conducting the search.

To repeat a search moving forward towards the end of the file, press Dot 8 + Down Arrow.

To repeat a search moving back towards the beginning of the file, press Dot 8 + Up Arrow.

15 Edit Box

The Slate presents a text dialog or input field called an Edit Box when you want to find text or rename a file. The Edit Box permits only one line of text. Press Space + F to begin a search or press Space + R to rename a file.

Once in the Edit Box, insert the text by typing the desired text as per the language selected for the reader/editor and then use the Edit Box commands to navigate. The Edit Box displays a blinking cursor (Dots 7 8) to indicate the beginning of the text that you are searching or editing.

When the Slate shows an edit box, it often provides default text, such as a file name or a previously entered search term. To delete or replace the selected text, type a letter, or press the backspace key (Dot 7). To edit the existing text in insert mode, press one of the arrow keys to move the cursor letter by letter to the position where you wish to edit.

15.1.1 Edit Box Commands

To Move Left or Right One Letter, press Left or Right Arrow. Pressing the left or right arrow moves the cursor in the desired direction. When the cursor reaches the end of the edit box, it stops--it can move no further.

To Move to Start or End of Text, press Space + Dot 7 + Left Arrow or Space + Dot 7 + Right Arrow.

To Backspace, press Dot 7. The Backspace key Dot 7 deletes the letter immediately left of the cursor. Use Backspace key in case of a typing mistake or to remove small amounts of text.

To Accept typed text, press Dot 8. Here, pressing Dot 8 acts as an Enter/OK key.

To Close the Edit Box, press Select. In single line controls, Close removes what you have typed. In multiple line controls, all text is automatically saved in the editor.

16 The Editor

In addition to serving as a tool for reading braille, Slate offers the ability to write and edit text. This feature allows you to create/edit new or existing files on the SD card and pendrive.

While you are in the Editor mode, the cursor notes the current position by blinking Dots 7 8. The default setting for the cursor is 1 second. The blink of the cursor can be turned off from the Menu.

There are three ways to edit a file. Each of these three commands is available both from the Reader and the File Manager.

- Edit new file: Space + N
- Edit current file: Space + E
- Switch to last edited file: Space + Dots 1 2 4 6

To insert text, type or paste the text at the cursor. You can insert any text into an open file using the braille keys (Dot 1 to Dot 8). The Editor adds the typed or pasted text.

To exit Editor, press Select, E or Select twice. The cursor disappears, returning you to the Reader in the file you were editing.

When you exit the editor or save the file from the context menu, the back translation from braille to text is performed as per the selected language. The translation process is indicated by showing a progress bar on display where the Dot 6 (6th pin) of the first 6 cells of the first display line rises in sequence repeatedly. This operation cannot be canceled.

If you are editing a new file, the editor automatically names the file with the first 100/120 characters of the translated text in the file. If a file already exists with that name, the Editor appends a number to it until it produces a unique name. To rename a file or to add an extension to the file name, highlight the file name in File Manager, and use the rename command. If there are Computer Braille characters that cannot be used in a filename, such as a forward slash (/) or an asterisk (*), the characters are replaced with an underscore (_). Once you exit, the new file name in the File Manager is selected. If you wish to rename the file, use the rename command (Space + R). If you want to give the file a specific name, write that name as the first line in the file.

When a new file is created, the system shall add a default extension to the file name if not already given by the user. The extension shall be decided based on the Read/Write settings of the current set profile.

If the read/write language is set to BRF or US Computer Braille (8 dot), the file extension should be. BRF. For any other settings, it shall be .txt.

If users wish to create a brl or bra file type, they can create brf file and then rename the file manually.

In Window Mode ON, when the currently selected Read Write language is contracted, you may notice improper vertical alignment in the text of the next/previous display line.

Additionally, in Window Mode ON, if the line size exceeds 5K, the device will signal this with a prolonged vibration pulse, preventing further file navigation. To address this, you should exit the file edit mode by pressing the select key.

Note: It is recommended that you exit the Editor before you perform a system update, reset the device, or remove the SD card. Exiting the Editor saves your work. Not exiting the Editor first could result in lost work.

16.1 Cursor Routing Buttons

A cursor routing button is located above each braille cell for positioning the cursor. The panning keys are also used as cursor routing keys to position the cursor vertically.

While editing a file in Stand-Alone mode, press a cursor routing button to move the cursor to that braille cell of the same row. Pressing the panning keys against a row shall move the cursor to that row keeping the cell position as it is. This makes the cursor navigation very convenient. Similarly, when connected in remote mode, press a cursor routing button to move the cursor to that point, or to select a link in a Web page or e-mail message. In remote mode, press the cursor routing key and the panning key together to move cursor to specific cell on the display.

16.2 Editor Commands

To Edit New File, press Space + N. Creates a new file in the Editor, ready for input.

To Edit Current File, press Space + E. Opens the selected file for editing.

To Switch to Last Edited File, press Space + Dots 1 2 4 6. Opens the last edited file for further editing. The device displays the error message "-- File not found" if the file has been deleted.

To Add a new line (Enter), press Dot 8. Pressing Dot 8 adds a new line (enters a carriage return) at the end of a paragraph and places the editing cursor in the first cell of the next paragraph.

To Delete a character, press Dot 7. Pressing Dot 7 deletes the character to the left of the editing cursor.

To Exit Editor, press Select twice OR Select, E. When you close a file, Editor saves and returns to the Reader or File Manager, depending on your earlier location. It automatically saves your work. If you have opened the file from File Manager, File Manager makes the new file the current item in the list. If you edit an existing file, Reader moves the reading position to the place where the cursor was.

To Save current work, press Select, S. The Slate automatically saves files every 1 KB of data or about 1000 characters, as you edit. However, small file increments could be lost during certain situations such as SD card removal,

system updates, or device resets. Pressing Select, S saves the file as you deem necessary.

To Go to next or previous character, press Left or Right Arrow. Pressing Left or Right Arrow moves the cursor to the previous or next character.

To go to next or previous display line, press Up or Down Arrow. Pressing Up arrow key moves cursor to the previous display row and pressing down arrow key moves cursor to the next display row.

To Go to next or previous word, press Space + Left or Right Arrow. Pressing Space + Left or Right Arrow moves the cursor to the start of the previous word or next word. This is also used to navigate between digits.

To Go to Previous or next display, press Dot 1+ Up Arrow or Dot 1+ Down Arrow. Pressing Dot 1+ Up Arrow or Dot 1+ Down Arrow allows you to move to the previous or next display of braille.

To scroll the display by a display line, press Select + Dot 7 + Up Arrow or Select + Dot 7 + Down Arrow. Pressing Select + Dot 7 + Up scrolls the display up by one display line and pressing the Select + Dot 7 + Down Arrow scrolls the display down by one display line.

To scroll the display by character, press Select + Dot 7 + Left Arrow or Select + Dot 7 + Right Arrow. Pressing Select + Dot 7 + Left Arrow scrolls the display left by one character and pressing the Select + Dot 7 + Right Arrow scrolls the display right by one character.

To Go to Start or end of paragraph, press Space + Dot 7 + Left or Right Arrow. Pressing Space + Dot 7 + Left or Right Arrow moves the cursor to the start or end of the current paragraph. If the start or end is not on the current display, then the display pans to the start or end of the first cell of the display. The editing cursor is placed in the first cell.

To Go to next or previous paragraph, press Space + Dot 1 or Space + Dot 4. To navigate the editing cursor to the beginning of the previous or next paragraph, simply press Space + Dot 1 or Space + Dot 4.

To Go to Previous or next page press Space + Dot 7 + Up or Down Arrow. Pressing Space + Dot 7 + Up or Down Arrow moves the cursor to the previous or next page (1000 characters or form feed character).

To Go to top or end of the document, press long press Up or Down Arrow. Long pressing Up or Down Arrow moves the cursor to the top or bottom of the document.

To Find Next Braille, press Dots 8 + Down Arrow. Pressing Dots 8 + Down arrow repeats a previous search forward from the point in the file where you are. If there is no text in the Find Edit buffer, the Editor uses the text at the cursor.

To Find Previous Braille, press Dots 8 + Up Arrow. Pressing Dots 8 + Up arrow repeats a previous search backwards from the point in the file where you are. If there is no text in the Find Edit buffer, the Editor uses the text at the cursor.

16.3 Editor Block Text Commands

The Editor block operations depend on a selection. The selection is the text between the cursor and the location mark.

Note: The size limit for a cut/copy/paste operation is 2 KB of data.

Adding a location mark does not change the content. Marks are used for copying/cutting a selection of text. To copy or cut using marks, press Select, M to place a mark. Only one mark can be placed/added at a time. Once the mark is placed, the text between the cursor and the mark can be copied (Select, C) or cut (Select, X). Once text is copied or cut, the mark is cleared.

To Set or clear Location Mark, press Select, M. The editor indicates a mark by raising both Dots 7 and 8 on the character where the mark occurs. To set or clear a mark in the file, press the Mark command. If there was already a mark at the cursor, the editor shows "-- Mark cleared" on the display and removes the mark. If there was no mark, it shows "- Mark set" and adds a mark.

To Copy, press Select, C. The copy command places the selected text onto the clipboard for later use in this file or another file.

To Cut, press Select, X. The cut command removes the selected text from the document and places it onto the clipboard for later use. If you want to put that text somewhere else, move to the desired position, then use the Paste command.

To Paste, press Select, V. To paste the contents of the clipboard before the cursor, use the Paste command.

16.4 Context Menu

The Context menu gives you quick access to the functions such as cut, copy, and mark for use in Editor.

While in Editor, press Select to open the Context menu. There are two ways to make a selection from the Context menu after it is open.

1. If you do not know the braille shortcuts, press the Up or Down Arrow key to scroll to your selection and press Select or Dot 8.
2. If you know the braille shortcut for the command (the braille letter associated with the function), press that letter.

- E Exit
- M Mark
- C Copy
- V Paste
- X Cut
- F Find
- S Save

You can also press Select twice to quickly exit the Editor. The first press opens the Context menu; the second press selects the first option in the menu, which is Exit.

17 The Display Modes

While reading or editing a file, it is shown differently on the display depending on whether window mode is set to on or off in the Menu.

When it is set to ON, the characters are shown for each line of text without wrapping the lines at the display boundaries.

For example, if the file content is

Hello World. This is slate test file.
It demonstrates how lines shall be displayed on slate.
This is test sentence 1.

Then the display shows following

Hello World. This is
It demonstrates how
This is test sentence

You can scroll the display left or right to view the remaining portions of the line by pressing Select + Left or Select + Right keys. The display also scrolls automatically when you navigate your cursor beyond the display boundaries.

But if the window mode is set to off, the lines are wrapped at the display boundaries. For the same example we used earlier, the display shows the following.

Hello World. This is
slate test file.
It demonstrates how
lines shall be
displayed on slate

18 Calculator

The Calculator can perform the four fundamental arithmetic operations.

Press Space + C (Dots 1 4 7) keys from the stand-alone mode to open and close the calculator application. It shows the message “Calculator” for 2 seconds and starts blinking the cursor on the first cell of the display when the calculator is launched.

You can now start typing digits (0 to 9), mathematical operators (+, -, *, /), decimal point, and equals sign. The Calculator gives an error indication in the form of vibration on inserting invalid input.

While entering the expression, you must enter using the language that is set as “read/write language”.

When you type any digit or operator, it moves the cursor to the next cell. Press Dot 7 to remove the last digit/operator. Once the entire display is full, you can review the previous display by pressing Left/Right keys or pan keys. (Total number of input digits and operators is limited to 255 entries for a single operation and maximum 15 digits are allowed per operand).

Press Dot 8 key to perform the calculation and display the answer. It stops blinking when the answer is shown. On pressing Dot 8 key on the answer, it repeats the previous operation on the answer.

To review the last 10 operations, press Space + Bottom most Panning keys.

Exit the Calculator to go to previous or other modes or preference menu. The calculator application exits automatically when you turn off the device or it goes into sleep mode.

18.1 Basic calculator functions

18.1.1 Addition

Type any digits, then press ‘+’ sign to add the addition operator and then type digits again. For example, 4+2

18.1.2 Subtraction

Type any digits, then press '-' sign to add the subtraction operator and then type digits again. For example, 4-2

18.1.3 Multiplication

Type any digits, then press '*' sign to add the Multiplication operator and then type digits again. For example, 4*2

18.1.4 Division

Type any digits, then press '/' sign to add the division operator and then type digits again. For example, 4/2

Press Dot 8 key to display the answer.

Press Space + Dot 7 to clear the last operand typed into the display (CE – Clear Entry) and press Space + Dot 7 8 to clear the display and any partial calculation (AC – All Clear)

The Calculator shows the following errors messages:

- Divide by zero: "Cannot divide by zero"
- Zero divided by Zero: "Result is undefined"
- Pressing Select key without entering the second operand: "Syntax error"

18.2 Memory operations

The memory operations allow you to store and recall the results of calculations.

The calculator memory is set to 0 until you press M+ (Space + Up) or M- (Space + Down). Each time you press M+, the number on the display is added to the number stored in the calculator memory. Each time you press M-, the number on the display is subtracted from the number in the calculator memory. To recall the number in the calculator memory, press MR (Space + Left). To clear the memory, press MC (Space + Right).

18.3 Calculator Commands

- To Open/Close Calculator, press Space + C (Dots 1 4 7)
- To do Addition, press Select + Up arrow / (Dots 3 4 6)
- To do Subtraction, press Select + Down arrow / (Dots 3 6)
- To do Multiplication, press Select + Right arrow / (Dots 1 6)
- To do Division, press Select + Left arrow / (Dots 3 4)
- To Backspace, press Dot 7
- To Clear Entry, press Space + Dot 7
- To All clear, press Space + Dots 7 8

- To enter Decimal point, press Dots 4 6
- To enter Pi key(Displays the value of pi) press Dots 1 2 3 4
- To do M+ (Memory Plus), press Space + Up arrow
- To do M- (Memory minus), press Space + Down arrow
- To do MR (Memory recall), press Space + Left arrow
- To do MC (Memory clear), press Space + Right arrow
- To do History navigation, press Space + Bottom most Panning key

19 Calendar

The Slate includes a calendar.

Press Space + Dots 1 4 8 to open or close the calendar.

When you open it, the first display line shows the month and year. For example, Jul 2023.

The second display line shows seven days of the week as follows:
Su Mo Tu We Th Fr Sa

The third display line (and onwards for 5x20 model) shows dates aligned with the days of week.

You can scroll through the dates in the view by pressing the arrow keys.

As you scroll, the first two display line showing the Month, year information and the days information remains as it is. The scrolling happens on the third row (and onwards for 5x20 model).

As you scroll beyond the current month, the next month and/or year information is shown, and the related information is updated in the first display line. Today's date is shown highlighted with raised Dot 7 and 8.

Please note that the Letter sign, capital sign and number sign are not displayed along with month, year, and weekdays titles if the System language selected is to be other than the English Computer Braille.

19.1 Appointments

You can add and view appointments for a specific day.

19.1.1 View, Edit and Create appointments

You can quickly jump to a specific date using the GoTo Date command (Space + Dots 1-2-4-5 (braille g)). It opens an edit box displaying the current date in one of

the following formats DD/MM/YYYY, MM/DD/YYYY or YYYY/DD/MM. Type in the date on which you wish to set an appointment and press Dot 8. While entering the date, you must enter it using the language that is set as “read/write language”. You can use the Left and Right arrow keys to jump between the date fields that you wish to type in.

Once the date is entered, Press the Dot 8 key to jump directly to the appointment for the date.

If you wish to do it manually then you first need to scroll to the line where your desired date is shown and then start using the right arrow key to focus on the date for which you want to set up or edit an appointment. Suppose you want to set up an appointment on July 24, 2023. You would arrow down through the month of July until you reach the row where July 18 through 24 is shown. You will see that the cells representing July 23 have dots 7-8 raised to indicate that July 23 is the current date.

Now, press the right arrow. On the cells representing July 18, the first date shown in the braille window, dots 7 and 8 are raised underneath the number 8. So, you would press the right arrow 6 times to focus on July 24, the date on which you wish to add an appointment.

Pressing the Select button Assuming you have no appoints on or later July 24, you receive the following message:

-- No Appointments

If you press dot 7 at this point, you will be returned to the display showing July 18 through 24.

To create the new appointment you want for July 24, press space with dots 1-3-4-5 (a braille n). You should see the date and time displayed with dots 7-8 raised below the first digit. Use the right arrow key to navigate to that part of the display you wish to change, such as the hour or minute. Press the right arrow repeatedly until you pass the time area and type the information about the appointment. You can correct any mistakes here using dot 7 to backspace. Press dot 8 to add the appointment. What you now see is the date, time, and text of the appointment.

Press select if you still want to make changes. If you are done, press dot 7 to get back to the display of July 18 through 24. None of the dates are highlighted.

If you want to see the appointments you might have created for the period July 18 through 24, you must first ensure that one of the dates in the window is highlighted—that is, has dots 7-8 raised beneath the last digit. If no date is highlighted, nothing happens when you press the Select button. With a date

highlighted, you either see “No Appointments or you are presented with a list of the appointments you have already created. Use the up or down arrows to move between the appointments in the list. You can press Space with Dots 1-4-5 (a braille d) to delete the appointment or Select to edit the appointment.

19.1.2 Modify

You can also modify the existing appointment. Press Select key on any day. It shows the list of existing appointments and press Select key to get the cursor on the first field of that appointment and you can change any field by pressing Up/Down arrow key.

Dot 8 to confirm the modifications.

Appointment changes can be discarded by pressing the Select + Dot 7 Key

19.1.3 Delete appointment

You can also delete the existing appointment. Press Select key on any day. It shows the list of existing appointments and Press Space + Dots 1 4 5 to delete that appointment.

This action deletes the appointment currently showing. Confirmation is required before the appointment is deleted. When the message "Confirm action" is displayed, press Dot 8 to confirm or press Dot 7 to cancel.

An alarm rings at its programmed time and day of the appointment. Press Dot 7 to acknowledge the ringing alarm.

19.2 Calendar Commands

The following are the command for the calendar application.

- To open/close calendar, press Space + Dots 1 4 8.
- To Go to Previous or Next Week, press Up or Down Arrows You can navigate in the calendar by weeks. Pressing Down arrow key goes the next week and pressing Up arrow key to goes to the previous week.
- To Add a new appointment, press Space + Dots 1 3 4 5.
- To Delete appointment, press Space + Dots 1 4 5.
- To Go to Date, press Space + Dots 1 2 4 5.

20 Key Lock Command

The Key Lock command prevents accidental key presses. The command is to hold Dots 7 8 for two seconds or more. Pressing and holding these same keys again, unlocks the keys. You can also unlock the keys by turning the device off and then on again.

21 System Alerts

System alerts, such as — “Battery low” are indicated by periodic cycling of Dot 8 in the last cell of the device.

Alerts are seen by invoking the Menu or the Editor Context Menu. Pressing Select causes the next alert to appear if there is any. The alert is removed from the alert list once it has been displayed.

If no more alerts are in the list, the first Menu or Editor Context Menu item appears. Pressing Dot 7 clears all pending alerts and puts you back on the first Menu or Editor Context Menu item.

22 Remote Mode

In addition to using the Slate as a portable reading tool and editor, it connects with host devices (i.e., computers, phones, tablets) to provide braille input/output to that device. The host device must be running software that supports braille.

- Windows PCs - JAWS®, NVDA, Supernova
- Mac® computers and iOS® devices - VoiceOver
- Android devices - BrailleBack, Braille TTY, Amazon VoiceView

When you use the Slate as a display for other hosts, the screen reader on that host device provides translation and other braille settings. Refer to documentation for the specific screen reader you are using.

The only hotkeys used with Remote mode that are not sent to the remote device are as follows:

- Pressing Select+Up Arrow opens the Slate Menu.
- Pressing Select + Space + Left Arrow returns the Slate to Stand-Alone mode.
- Pressing Select + Space+ Right Arrow returns the Slate to Remote mode.

22.1 Before you Connect

Before you connect the Slate to a host, set the device so that the screen reader you use recognizes it. For screen readers that support the HID-Braille protocol, select HID-Braille under the USB option in the Menu for a USB connection, or pair over Bluetooth. No emulation is required.

22.2 Using the Bluetooth Connection

Bluetooth is a technology that wirelessly connects devices, such as the Slate, to host devices, such as phones, tablets and computers or to peripherals such as Bluetooth keyboards. For example, when using an iPhone with VoiceOver, you can control the iPhone with keys and buttons on the Slate, and you can read the entire interface in braille as you interact with it.

If the Slate is on, when you turn on the host device, it connects automatically provided the Bluetooth option in the menu is set to Automatic. When the host device enters sleep mode or is turned off, the Slate reverts to showing stand-alone content. When connected to another device through the USB port, the Slate reconnects to screen reader on the other host device.

There are only two ways to wake up a host device:

- Pressing the Power button
- Receiving a notification

If you wish to connect to a screenreader application such as Voiceover or Brailleback, initiate pairing from the host.

See the Bluetooth section for the host device you plan to use:

- [Connecting iOS with Bluetooth](#)
- [Connecting Mac with Bluetooth](#)
- [Connecting Android with Bluetooth](#)
- [Connecting Windows with Bluetooth](#)

22.2.1 Connect to Multiple Hosts

It is possible to pair the Slate with more than one device. For example, you can pair it with both your phone and tablet. The device you use must offer a braille interface.

Make sure the screen reader on each host supports the Slate. Pair the display with each device following the Bluetooth steps for that device type.

22.3 USB

Universal Serial Bus (USB) is a technology that makes connecting devices with hosts easy. It provides some advantages over Bluetooth because it is both faster and charges the Slate simultaneously.

The Slate supports three kinds of USB connections (all with the same cable available in the box.)

- Human Interface Device - Orbit (recommended)
- Braille - HID
- Serial
- Mass Storage (for turning the Slate's SD card into a drive on your computer)

22.3.1 Human Interface Device (HID) – Orbit

When using the Slate with a screen reader that supports HID Orbit, follow these steps:

1. Turn on the Slate. Slate displays the last braille you were reading.
2. Connect the USB cable to the host and to the Slate. "-- Charger connected" is displayed.
3. On the Slate, press Space + Dots 2 7. "-- HID Orbit" is displayed.
4. Start the screen reader. Orbit responds by displaying what the screen reader is showing. If your screen reader does not support HID, see Serial below.

To switch back to Stand-Alone mode, press Select + Space + Left Arrow.

22.3.2 Human Interface Device (HID) – Braille

When using the Slate with a screen reader that supports HID Braille, follow these steps:

1. Turn on the Slate. Slate displays the last braille you were reading.
2. Connect the USB cable to the host and to the Slate. "-- Charger connected" is displayed.
3. On the Slate, press Space + Dots 6 7. "-- HID Braille" is displayed.

Start the screen reader. Orbit responds by displaying what the screen reader is showing. If your screen reader does not support HID Braille, see Serial below. Switch back to Stand-Alone mode, press Select + Space + Left Arrow.

22.3.3 Serial

When using a screen reader that only supports Serial protocol, follow these steps:

1. Turn on the Slate. It displays the last read material.
2. Connect the USB cable. "-- Charger connected" is displayed.
3. On the Slate, press Space + Dots 3 7. "-- Serial USB" is displayed.
4. Configure the screen reader. Refer screen reader section in this document or refer to your screen reader documents.

22.3.4 Mass Storage

To use an SD card inserted in the Slate as a drive on your computer, follow these steps:

1. Turn on the Slate. It responds with braille from your last activity.
2. Connect the Slate with your computer using USB cable. "-- Charger connected" is displayed.
3. On the Slate, press Space + Dots 5 7. "—Media-device " is displayed. Depending on your settings, the computer also responds with a notification of a new drive that is now available.
4. Use your PC to read and write files on the new drive.

To switch back to Stand-Alone mode, press Select + Space + Left Arrow. Do not switch back to Stand-Alone mode while file transfers are in progress.

Note: If you have hidden files enabled on your device, you may encounter the following files:

- .BKP-FILEHISTORY - This file contains information of the last read position of the last 100 files that were opened on the device.
- .BKP-RECENTHISTORY - This file contains information required for software to generate the recent file list.
- .Logfile - Log file containing software debug information.

Do not delete these files. You will only see them if you have hidden files enabled.

22.4 iOS Devices

You can connect to iOS devices using Bluetooth or USB. For a USB connection, set the Slate to HID-Braille under the USB option in the Menu, then connect the USB cable; VoiceOver detects the display automatically. For the best results, we recommend iOS 17 or later.

22.4.1 Connecting iOS with Bluetooth

Connecting the Slate to an iOS device provides both braille feedback and the ability to type and control the device with the Slate keyboard and directional buttons.

For a USB connection, set the Slate to HID-Braille under the USB option in the Menu; for Bluetooth, pair the display directly. VoiceOver does not support multi-line braille, so the Slate works as a single-line display with VoiceOver and messages appear on the first line.

In default configuration (Just Works), the Slate is ready to pair with iOS via Bluetooth. Follow these steps to pair with Bluetooth:

1. Turn on Bluetooth. Bluetooth can be turned on in the Menu or by pressing Space + Dots 4 7 on the Slate.
2. On the iOS device, go to Settings > Accessibility > VoiceOver > Braille unless using a version of iOS prior to 13, then go to Settings > General > Accessibility > VoiceOver > Braille
3. Look for the name of the unit in the list of possible braille displays. It will show “Orbit Reader” plus the last four digits of the device serial number.
4. Activate the “Orbit Reader” device in the list to pair.

Confirm code configuration shows a random number on both the Slate's braille display and on the host device. To confirm the request, ensure that the numbers match and then press Dot 8 on the Slate. Then press the Pair button on your iOS device.

Once you pair the unit, iOS starts sending braille to the Slate, and you can use the Slate input and navigation keys to control your iOS device.

Note: VoiceOver must be on in order to send braille to the Slate.

For more information about iOS and braille displays, see [Braille Displays for iOS](#) on the Apple® Accessibility website.

22.4.2 iOS Resources

- [Apple Blind and Visually Impaired User Community](#)
- [Andrea's Head Wiki](#)
- [TechVision Tutorials](#)
- [Youtube Videos on iPad/iPhone and Braille](#)
- [Braille Displays for iOS](#)
- [Common braille commands for VoiceOver navigation using iPhone, iPad, and iPod® touch](#)

22.4.3 iOS Commands

22.4.3.1 iOS Navigation Commands

Action	Command
Move to previous item	Space + Dot 1 or Left Arrow
Move to next item	Space + Dot 4 or Right Arrow
Pan braille left	Space + Dot 2
Pan braille right	Space + Dot 5
Move to the first element	Space + Dots 1 2 3
Move to the last element	Space + Dots 4 5 6
Scroll right one page	Space + Dots 1 3 5
Scroll left one page	Space + Dots 2 4 6

Move to the status bar	Space + S (Dots 2 3 4)
Select previous rotor setting	Space + Dots 2 3
Select next rotor setting	Space + Dots 5 6
Move to previous item using rotor setting	Space + Dot 3
Move to next item using rotor setting	Space + Dot 6
Launch the Task Switcher	Space + Dots 1 2 5 twice quickly
Scroll up one page	Space + Dots 3 4 5 6
Scroll down one page	Space + Dots 1 4 5 6
Go to Notification Center	Space + Dots 4 6
Go to Control Center	Space + Dots 2 5

22.4.3.2 iOS Reading Commands

Action	Command
Read all, starting at the selected item	Space + R
Read all, starting from the top	Space + Dots 2 4 5 6
Pause or continue speech	Space + P
Announce page number OR number of rows displayed	Space + Dots 3 4

22.4.3.3 iOS General Commands

Action	Command
Activate the Back button if present	Space + B (Dots 1 2)
Activate the Delete key	Space + D OR Space + Dot 7
Activate the Return key	Space + E OR Space + Dot 8
Switch between contracted and uncontracted braille	Space + Dots 1 2 4 5
Activate the Home button (twice quickly to launch the task switcher)	Space + H (Dots 1 2 5)
Toggle speech on and off	Space + M
Activate the Tab key	Space + T (Dots 2 3 4 5)
Context menu	Space + Dots 3 5 6
Switch braille input	Space + Dots 2 3 6
Volume up	Space + Dots 3 4 5
Volume down	Space + Dots 1 2 6
Toggle screen curtain on/off	Space + Dots 1 2 3 4 5 6
Select all	Space + Dots 2 3 5 6
Cut	Space + X
Copy	Space + C
Paste	Space + V
Undo typing	Space + Dots 1 3 5 6
Redo typing	Space + Dots 2 3 4 6
Activate Eject key	Space + Dots 1 4 6
Toggle announcement history	Space + Dots 1 3 4 5
Keyboard Help	Space + Dots 1 3

22.4.3.4 iOS iPad Commands

Action	Command
Move to previous container	Space + Dots 1 7
Move to next container	Space + Dots 4 7

Mac Computers

The Slate can be connected to a Mac in two ways. One is to connect using the USB cable available in the box. The second is to use Bluetooth for a wireless connection.

22.5.1 Connecting to a Mac over USB

The simplest way to connect the Slate to a Mac is to connect using a standard USB-A to Type-C USB cable. To use the HID-Braille protocol, select HID-Braille under the USB option in the Menu. Next, run VoiceOver by pressing the Apple CMD key + F5. Then, attach the small end of the USB cable to the Slate with the bumps facing down and the big end to Mac. VoiceOver automatically recognizes and starts using the display. VoiceOver does not support multi-line braille, so the Slate works as a single-line display with VoiceOver. For the best results, we recommend macOS 15 or later.

22.5.2 Connecting to a Mac over Bluetooth

The default configuration for pairing with a Mac through Bluetooth is 'Just Works'. If Bluetooth has been turned off, it can be turned on in the menu or by pressing Space + Dots 4 7 on the Slate. VoiceOver does not support multi-line braille, so the Slate works as a single-line display with VoiceOver and messages appear on the first line.

If the Slate is in default connection, follow these steps to pair the device with a Mac:

1. Turn on Bluetooth. Bluetooth can be turned on in the menu or by pressing Space + Dots 4 7 on the Slate.
2. When VoiceOver is on, open VoiceOver Utility by pressing VO-F8
3. Click the Braille category, click Displays, and then click the Add (+) button
4. Select "Orbit Reader" on the list. VoiceOver filters the devices it detects to list only the Bluetooth braille displays that are within range of your computer and that appear to match a VoiceOver braille display driver.
5. Activate the "Orbit Reader" device in the list to pair.

The Confirm code configuration shows a random number on both the Slate's braille display and on the host device. Follow steps 1 through 3. The Mac shows you a dialog with a security code. To confirm the request, compare the numbers in the Bluetooth dialog on the Mac with the code shown on your display. If they

are the same, select 'Yes' in the dialog on Mac. If the numbers do not match, select 'No', and try the next the Orbit Reader on the list. Pairing requests can be accepted by pressing Dot 8 or rejected by pressing Dot 7 from the Slate device. The purpose of this procedure is to allow more than one Slate device to be paired in the same room at the same time without pairing the wrong device.

If the Slate does not work with VoiceOver, it is possible that you are not using the latest Mac OS. In that case, you have two choices. Check for updates. We suggest you update to the latest operating system.

If the Orbit Reader is not listed, make sure you have turned on Bluetooth in the Menu.

22.5.3 Controlling the Slate from a Mac

To control how VoiceOver treats the display, follow these steps:

1. Open the VoiceOver Utility by pressing Command + F8 while VoiceOver is running.
2. Scroll down to the Braille option.
3. Select the Braille Display tab.

To turn on contracted braille, check the Contracted Braille box.

For the Mac documentation on connecting and using braille displays, see Apple's [VoiceOver Info Guide](#).

22.6 Android Devices

You can connect Android devices using Bluetooth only.

22.6.1 Connecting to Android devices over Bluetooth

In the default configuration, the Slate is ready to pair with Bluetooth. If Bluetooth has been turned off, it can be turned on in the menu or by pressing Space + Dots 4 7. TalkBack does not support multi-line braille, so the Slate works as a single-line display with TalkBack.

1. In the Bluetooth settings of the phone, search for Orbit reader you wish to pair. Once device is visible in the list, click on it to get paired.
2. Open Settings app on your Android phone.
3. Locate accessibility settings. It can be found under additional settings or advance settings, depends upon phone which you are using.
4. Then locate Talkback and click on it.
5. Click on settings option under Talkback.
6. Then search for Braille display and click on it.
7. Here locate "use Braille display off switch. Click on off button to turn it on.

8. Search for your device, click on it. A dialog box opens with options cancel and connect button.
9. Click on connect button to initiate connection between Orbit reader and Android “Talkback” over Bluetooth

22.6.2 Input and Output Text with Talkback

To input text with your braille keyboard, first, enable the Talkback braille keyboard in your Android settings under Language and Input. If you try to use the keyboard before completing this step, you will receive a prompt to change your settings.

To edit a text field, focus and activate the text field. You can then use the Up and Down Arrow keys to move in the text field. You can switch between grade 1 and grade 2 input with shortcut space + g.

By default, Android is set to display UEB Grade 1.

To set language options, follow the steps below:

1. Press H to open the Home screen
2. Swipe down and right (L shape). It opens Talkback menu
3. Navigate to talkback settings and open
4. Scroll to and open “Braille display.
5. Scroll to option “Languages” to add languages
6. Scroll to and open option “Preferred typing language” to set input language
7. Scroll to and open option “Preferred Reading language” to set output language.
8. Scroll to and open option “Preferred braille grade” set the language grade.

22.6.3 Talkback Commands

- Basic controls
 - To pan down, press right back pan key
 - To pan up, press left front pan key
 - To touch and hold current item, press Space + dot 8
- Navigation
 - To go to previous item, press dots 1 2 7
 - To go to next item, press dots 4 5 8
 - To scroll backwards, press dots 2 4 6 7
 - To scroll forward, press dots 1 3 5 8
 - To move navigation focus forward or adjust reading control down, press dots 6 8

- To move to previous window, press dots 2 4 5 6 7
- To move to next window, press dots 2 4 5 6 8
- To go to top of page or beginning of text, press space + dots 1 2 3
- To go to bottom of page or end of text, press space + dots 4 5 6
- To go to previous heading in web content, press dots 1 2 5 7
- To go to next heading in web content, press dots 1 2 5 8
- To go to previous control in web content, press dots 1 4 7
- To go to next control in web content, press dots 1 4 8
- To go to previous link in web content, press dots 1 2 3 7
- To go to next link in web content, press dots 1 2 3 8
- To go to previous reading control, press dots 2 3 7
- To go to next reading control, press dots 5 6 8
- System actions
 - To go back, press space + dots 1 2
 - To go home, press space + dots 1 2 5
 - To open notifications, press space + dots 1 3 4 5
 - To open recent applications, press space + dots 1 2 3 5
 - To open quick settings, press space + dots 1 2 3 4 5
 - To open all applications, press space + dots 1 2 3 4
- Talkback features
 - To open screen search, press space + dots 3 4
 - To edit custom label, press space + dots 1 3 4 8
 - To open talkback menu, press space + dots 1 3 4
 - To turn talkback speech on or off, press dots 1 3 4 7 8
 - To stop reading, press dots 7 8
 - To open talkback settings, press dots 2 3 4 5 7 8
- Braille settings
 - To switch to the next typing language, press dots 2 4 7 8
 - To switch to next reading language, press dots 1 3 5 7 8
 - To switch between contracted and uncontracted, press space + dots 1 2 4 5
 - To open braille display commands, press dots 1 3 7 8
 - To open braille display settings, press dots 1 2 7 8
 - To turn off braille display, press dots 1 2 3 4 5 6 7 8
- Text editing
 - To move to previous character, press space + dot 3
 - To move to next character, press space + dot 6
 - To move to previous word, press space + dot 2
 - To move to next word, press space + dot 5

- To move to previous line, press space + dot 1
- To move to next line, press space + dot 4
- To select all text, press space + dots 1 2 3 4 5 6 8
- To select previous character, press space + dots 3 8
- To select next character, press space + dots 6 8
- To select previous word, press space + dots 2 8
- To select next word, press space + dots 5 8
- To copy text, press space + dots 1 4 8
- To cut text, press space + dots 1 2 3 6 8
- To delete, press dot 7
- To delete a word, press space + dots 2 7
- To activate enter key when editing text, press dot 8

22.7 Windows PCs

Before connecting the Slate with a PC, you must first decide how you wish to connect: via Bluetooth or USB. This is a personal choice. USB charges the device as you use it, so it is a good choice when your battery is low. Bluetooth does not use wires, so it is a good choice when you are on the go.

22.7.1 Connecting to Windows over USB

For Windows versions 7 and newer, the serial interface requires the installation of two drivers: one for the USB and one to make the USB port appear like a COM port. The only exception is Windows XP. Because it is Serial only, it can just be plugged in. The second driver is required because many screen reading programs handle braille displays like a serial device. The COM port assignment driver shows the assigned port number used to communicate with the display. Take a note of the COM port number for later use. If you need to look at it later, go to Device Manager while the display is connected and look in the section for Ports: COM and LPT. One of the COM ports is assigned to the Slate. You need to use that number when you set up your screen reader.

Once the display is connected to the device you wish to use, configure the software to use the Slate.

22.7.2 Connecting to Windows over Bluetooth

When connecting the Slate with Bluetooth, you must first choose a pairing configuration.

The default configuration is 'Just Works'. If the Slate is in default connection, follow these steps to pair the device:

1. On the PC, perform a Bluetooth search.
2. Select the Slate from the list of Bluetooth devices.

Confirm code configuration shows a random number on both the Slate's braille display and on the host device. Follow steps 1 and 2; then, to confirm the request, compare the numbers in the Bluetooth dialog on the Windows PC with the code shown on your display. If they are the same, select 'Yes'. If the numbers do not match, select 'No', and try the next Orbit Reader on the list. Pairing requests can be accepted by pressing Dot 8 or rejected by pressing Dot 7 from the Slate device. The purpose of this procedure is to allow more than one Slate device to be paired in the same room at the same time without pairing the wrong device.

The device pairs with the Slate and an incoming Bluetooth virtual serial port is set up on the PC.

Next, check the Ports list in the Windows Device Manager to find the COM port number assigned to the outgoing Bluetooth serial port. Make a note of this number.

In your screen reader on the PC, set the active Braille display COM port to use as the relevant Bluetooth serial port COM number.

22.7.3 Non-Visual Desktop Access (NVDA)

We recommend using the latest version of NVDA. With NVDA installed on your PC, it automatically recognizes the Slate over USB and Bluetooth. If NVDA is not recognizing the display, go to the NVDA Preferences menu and select Braille Settings from the list. From the braille display drop-down menu, select the Slate and click OK.

Note: For a USB connection, set the Slate to HID-Braille by selecting HID-Braille under the USB option in the Menu.

Multi-line braille: NVDA currently provides only very basic support for reading multi-line braille text. Most NVDA functions treat the Slate as a single-line display.

NVDA turns 'On' braille output when it is configured for the display. To turn 'Off' braille support, select "No Braille" from Braille Display options in the Braille Settings menu.

22.7.3.1 NVDA Commands

- To Move up one line, press Up Arrow
- To Move down one line, press Down Arrow
- To Move left one character, press Left Arrow
- To Move right one character, press Right Arrow
- To Enter, press Select

22.7.4 Job Access with Speech (JAWS)

The Slate is supported on JAWS 2020 and later. No driver installation is required, as support is integrated into JAWS. JAWS 2026 and later also provide full multi-line braille support for the Slate, so you can read several lines of braille at once instead of panning line by line. JAWS 2025 and earlier support the Slate as a single-line display.

22.7.4.1 Connecting with USB (JAWS 2026 and later)

JAWS 2026 and later support the plug-and-play HID-Braille standard over USB. In this mode, JAWS automatically detects the Slate, so no manual display selection is required.

1. On the Slate, open the Menu, arrow to the USB option, and select HID-Braille.
2. Connect the Slate to your computer with the USB cable.
3. Start or restart JAWS. JAWS detects the display automatically and begins brailleing the screen.

Note: HID-Braille is currently available over USB only. See Connecting with Bluetooth below for Bluetooth connections.

22.7.4.2 Connecting with USB (JAWS 2025 and earlier)

JAWS 2025 and earlier use the HID (Orbit) protocol and require the display to be selected manually. On the Slate, set the USB protocol to HID (Orbit) by pressing Space + Dots 2 7, then follow these steps:

1. Start or restart JAWS.
2. Insert + J to bring up the JAWS menu.
3. Press Enter on Options.
4. Down Arrow to Braille and press Enter.
5. Tab to Add and press Enter.
6. Arrow Up or Down to Orbit Reader and press Space to check the box and select it.
7. Tab to the Next button and press Enter.
8. Select USB.
9. Tab to the Next button and press Enter.
10. Select Orbit Reader as a primary device.
11. Tab to the Finish button and press Enter.
12. Restart JAWS.

22.7.4.3 Connecting with Bluetooth (all supported versions)

HID-Braille is currently available over USB only. Bluetooth connections continue to use the legacy selection procedure on all JAWS versions, including JAWS 2026 and later. Orbit Research is actively working to bring Bluetooth in line with USB so that the same features are available over both connection types on JAWS 2026 and later.

1. Press Space + Dots 4 7.
2. Follow steps 1-7 of the JAWS 2025 and earlier USB procedure above.
3. Select the COM port where the Orbit Reader is connected (check device manager for COM port or use COM port you saved from previous steps).
4. Follow steps 9-12 of the JAWS 2025 and earlier USB procedure above.

To turn off braille support, follow these steps:

1. Insert + J to bring up the JAWS menu.
2. Press Enter on Options.
3. Down Arrow to Braille and press Enter.
4. Up Arrow to No Braille Display.
5. Tab to Ok and press Enter.
6. Restart JAWS.

Note: For a longer description of any of the following commands, turn JAWS keyboard Help 'on' by pressing Insert + 1 and type the command. Quickly type the command twice to get an even longer description. Press Insert + 1 again to exit the JAWS keyboard Help mode.

22.7.4.4 Multi-line Braille in JAWS

Multi-line braille support requires JAWS 2026 or later. On JAWS 2025 and earlier, the Slate works as a single-line display. With JAWS 2026 and later, instead of reading one line at a time, you can view several lines of braille at once, which makes reading paragraphs, tables, and spatial content such as math far more efficient. The number of lines shown depends on the model: five lines on the Slate 520 and three lines on the Slate 340.

22.7.4.4.1 Selecting a braille view

JAWS offers different ways of laying out text across the multiple lines of the display. To choose how text is presented, open the Select Braille View dialog by pressing ALT + INSERT + V, then choose the view you want.

Wrapped view: Wrapped view fills the display line by line, continuing text from one line to the next so you can read a paragraph across all the available lines without panning.

Cropped view: Cropped view preserves the on-screen layout so that rows and columns line up as they do visually. JAWS uses Cropped view automatically in Excel and when focus moves into a table in Word, Google Docs, and on web pages, so that column and row data are shown in position. A column separator, shown as Dots 4 5 6 8, marks the boundary between columns.

22.7.4.4.2 Split Braille

Split Braille lets you show content from two different locations at the same time. When Split Braille is active, the display is divided into two regions: one region shows the text at the cursor, and the other shows content from a separate location that you select.

22.7.4.4.3 Braille output modes

As with single-line displays, JAWS can present braille in Structured, Line, Speech Output, or Attribute mode. Structured mode shows descriptive information about the current control or dialog; Line mode shows an exact representation of the current line on screen; Speech Output mode shows the text that JAWS sends to the speech synthesizer. Cycle between these modes by pressing M Chord (Dots 1 4 6 with Space).

22.7.4.5 Jaws Commands

22.7.4.5.1 Navigation commands

Action	Command
Move display to the left	Left
Move display to the right	Right
Move display up one line	Up
Move display down one line	Down
Pan left one braille window	Pan Left
Pan right one braille window	Pan Right
Top of active window	Select + Dots 1 2 3
Bottom of active window	Select + Dots 4 5 6
Route braille to active cursor	Dots 1 2 3 5 7 or Dots 1 2 3 5 7 Chord
Start braille auto advance mode	Select
Decrease braille auto advance speed	Select + Dot 3
Increase Braille auto advance speed	Select + Dot 6
Say previous line	Dots 2 3 or Dots 2 3 Chord
Say next line	Dots 5 6 or Dots 5 6 Chord
Say current line	Dots 1 4 or Dots 1 4 Chord

Say current word	Dots 2 5 or Dots 2 5 Chord
Say current character	Dots 3 6 or Dots 3 6 Chord
Previous document window	Dots 1 3 or Dots 1 3 Chord
Next document window	Dots 4 6 or Dots 4 6 Chord
Beginning of file	Dots 1 2 3 or Dots 1 2 3 Chord
End of file	Dots 4 5 6 or Dots 4 5 6 Chord
Page Up	Dots 1 2 3 4 5 or Dots 1 2 3 4 5 Chord
Page Down	Dots 1 2 4 5 6 or Dots 1 2 4 5 6 Chord
Home	Dots 1 2 3 4 Chord
End	Dots 1 4 5 6 Chord
Up Arrow	Dot 1 or Dot 1 Chord
Down Arrow	Dot 4 or Dot 4 Chord
Previous word	Dot 2 or Dot 2 Chord
Next word	Dot 5 or Dot 5 Chord
Previous character	Dot 3 or Dot 3 Chord
Next character	Dot 6 or Dot 6 Chord

22.7.4.5.2 Editing Commands

Action	Command
Backspace (acts as shift key when typing braille characters)	Dot 7
Enter	Dot 8
Tab	Dots 4 5 or Dots 4 5 Chord
Shift + Tab	Dots 1 2 or Dots 1 2 Chord
Delete current character	Dots 1 4 5 or Dots 1 4 5 Chord
Select all	Dots 1 8 or Dots 1 8 Chord
Select from top of document	Dots 1 2 3 7 8 or Dots 1 2 3 7 8 Chord
Select to bottom of document	Dots 4 5 6 7 8
Select previous page	Dots 1 2 3 4 5 7 8
Select next page	Dots 1 2 4 5 6 7 8
Select to beginning of line	Dots 1 2 3 4 7 8
Select to end of line	Dots 1 4 5 6 7 8 or Dots 1 4 5 6 7 8 Chord
Select previous line	Dots 1 7 8
Select next line	Dots 4 7 8
Select previous word	Dots 2 7 8
Select next word	Dots 5 7 8
Select previous character	Dots 3 7 8
Select next character	Dots 6 7 8
Copy to clipboard	Dots 1 4 8 or Dots 1 4 8 Chord
Cut to clipboard	Dots 1 3 4 6 8 or Dots 1 3 4 6 8 Chord
Paste clipboard	Dots 1 2 3 6 8 or Dots 1 2 3 6 8 Chord

Undo	Dots 1 3 5 6 8 or Dots 1 3 5 6 8 Chord
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22.7.4.5.3 Windows Commands

Action	Command
Start menu	Dots 1 3 4 7 8
Toggle menu bar	Dots 1 3 4 or Dots 1 3 4 Chord
Escape	Dots 1 3 5 6 or Dots 1 3 5 6 Chord
Alt Tab	Dots 2 3 4 5 or Dots 2 3 4 5 Chord
Minimize all applications	Dots 1 4 5 7 8

22.7.4.5.4 JAWS Commands

Action	Command
Toggle keyboard help	Dots 1 4 5 6
Toggle type keys mode	Dots 1 2 3 4 5 6 Chord
JAWS cursor	Select + Dots 2 4 5
PC cursor	Select + Dots 1 2 3 4
Route JAWS cursor to PC cursor	Select + Dots 1 4
Say all to bottom	Dots 1 2 3 4 5 6 7 8
Toggle grade 2 translation	Dots 1 2 4 5 or Dots 1 2 4 5 Chord
Toggle grade 2 translation of current word	Select + Dots 2 4 5 6
Display last flash message	Select + Dots 1 2 4
JAWS find	Dots 1 2 4 Chord
JAWS find next	Dots 2 5 7 8
JAWS find previous	Select + Dots 2 5 7 8
Toggle active cursor follows braille	Select + Dot 1
Toggle braille follows active cursor	Select + Dot 4
Cycle through braille modes	Select + Dots 1 3 4
Display 6 dot braille	Select + Dots 2 3 5
Display 8 dot braille	Select + Dots 2 3 6
Toggle cursor shape	Select + Dots 1 4 6
Restrict braille cursor	Select + Dots 1 2 3 5
Toggle characters and attributes	Select + Dots 1 6
Braille color marking	Select + Dots 3 4
Select attributes to be displayed	Select + Dots 1 3
Set 8 characters per space	Dots 2 3 6 Chord
Set unlimited characters per space	Dots 1 3 6 Chord
Toggle 8/unlimited characters per space	Select + Dots 1 3 4 6
Cycle table reading options	Select + Dots 2 3 4 5
Cycle table header options	Select + Dots 1 2 5
Graphics labeler	Select + Dots 1 2 4 5
Quick Settings	Select + Dots 1 2

Adjust JAWS options	Select + Dots 1 2 3 6
JAWS window	Dots 2 4 5 or Dots 2 4 5 Chord
Run JAWS manager	Dots 2 3 7 8
List of links on page	Dots 2 3 5 6 7 8
Show current time	Dots 2 3 4 5 7 8
Show script file name	Select + Dots 1 2 3 4 5
Quit JAWS	Dots 2 5 6 7 8

22.7.4.5.5 Cursor Routing Key Commands

Action	Command
Move PC cursor to any cell	Any cursor router
Select block	Dot 3 with any routing key

22.7.4.5.6 Modifier keys and Modifier key commands

Use the modifier keys to simulate key combinations (keystrokes) that include CTRL, ALT, WINDOWS Key, SHIFT, or the INSERT.

To use these modifiers when typing a keystroke, do the following:

4. Hold down DOT 8 CHORD and then press the corresponding modifier keys in the keystroke. Modifier keystrokes are listed in the following table.
5. After you create the modifier portion of the keystroke, release the keys and press the remaining part of the keystroke. For example, to perform the keystroke CTRL+SHIFT+V, you press DOTS 3-7-8 CHORD, release the keys, and then press V (DOTS 1-2-3-6).
 - To simulate INSERT, press DOT 2
 - To simulate CTRL, press DOT 3
 - To simulate WINDOWS Key, press DOT 4
 - To simulate Function Keys (F1 through F12), press DOT 5
 - To simulate ALT key, press DOT 6
 - To simulate SHIFT, press DOT 7

22.7.4.5.7 Functions Keys

To simulate the function keys (F1 through F12), press DOTS 5-8 CHORD followed by A through L (which correspond to 1 through 12).

For example, to simulate the F6 key, press DOTS 5-8 CHORD, then F (DOTS 1-2-4). If the function key is part of a key combination, add the appropriate modifiers while holding down DOTS 5-8 CHORD. For example, to simulate the keystroke INSERT+F2, press DOTS 2-5-8 CHORD, then B (DOTS 1-2).

Note: Please note that Modifier keys activation shall be canceled automatically after 5 seconds if the remaining keystroke is not pressed.

22.7.5 Dolphin SuperNova ScreenReader

To connect Slate to Dolphin SuperNova ScreenReader, the device must be connected by a Standard USB-A to Type-C USB cable and set in HID Orbit protocol mode. You need to set emulation mode to “Orbit Reader 20 – 20 cells” for 520 model and “Orbit reader 40– 40 cells” for 340 model.

To connect the Slate via USB, follow these steps:

1. Press space + dot 2 7 to activate HID Orbit mode on Slate
2. Click on Supernova’s Control Panel
3. Press ALT key to open Menu bar.
4. Now press left/right arrow keys to navigate to Braille menu
5. Now press down arrow to go to General preferences menu and click on it
6. Here dialog box will get opened. It will contain 3 Tabs.
7. Here click on Braille display tab. Now here you will see “No Braille display” and Orbit Reader display. Select Orbit Reader and click on OK button.

Note: While connecting the Slate with Dolphin SuperNova Screen Reader first time, above steps 1 to 7 is required to follow. After that Dolphin SuperNova Screen Reader automatically connect with Slate once the HID Orbit mode activated by Space 2 7 on Slate.

22.7.5.1 SuperNova commands

- To Braille Back, press Left/Right backward/ Panning key
- To Braille Forward, press Left/Right forward Panning Key
- To Simulate Key Press Up, press Dot 1 Chord
- To Simulate Key Press Up, press Up Arrow
- To Simulate Key Press Down, press Dot 4 Chord
- To Simulate Key Press Down, press Down Arrow
- To Simulate Key Press Left, press Left Arrow
- To Simulate Key Press Right, press Right Arrow
- To Simulate Key Press Home, press Dots 2 3 Chord
- To Simulate Key Press End, press Dots 5 6 Chord
- To Simulate Key Press Ctrl Home, press Dots 1 2 3 Chord
- To Simulate Key Press Ctrl End, press Dots 4 5 6 Chord
- To Simulate Key Press Enter, press Dot 8
- To Simulate Key Press Enter, press Select
- To Simulate Key Press Page Down, press Dots 4 5 Chord

- To Simulate Key Press Tab, press Dots 4 6 Chord
- To Simulate Key Press Shift Tab, press Dots 1 3 Chord
- To Simulate Key Press Escape, press Dots 1 5 Chord
- To Simulate Key Press Backspace, press Dot 7
- To Simulate Key Press Delete, press Dots 1 4 5 Chord
- To Simulate Key Press Windows, press Dots 3 4 Chord
- To Simulate Key Press Alt, press Dots 1 3 4 Chord

22.7.6 Narrator

Narrator is the screen reader built into Windows. Narrator braille support works with the Slate on Windows 11 over USB.

On the Slate, set the USB mode to HID (Orbit) by pressing Space + Dots 2 7, or by opening the Menu, selecting the USB option, and choosing HID (Orbit). Then connect the Slate to your computer with the USB cable.

Multi-line braille: Narrator does not support multi-line braille, so the Slate works as a single-line display with Narrator.

Install Narrator braille support: Narrator braille is installed as an optional Windows feature. To install it, follow these steps:

1. Press the Windows logo key + Ctrl + N to open Narrator settings.
2. Select the Use a braille display with Narrator button to open the braille page.
3. Select the Download and install braille button. This may take some time.
4. When the download is complete, restart your computer when prompted, then log back in and return to Narrator settings.
5. In the Braille section of Narrator settings, turn on the Turn on braille switch.
6. Select Add a braille display, then choose the Orbit Reader manufacturer and the USB connection type.

Note: If you use the same braille display with a third-party screen reader such as JAWS or NVDA, you may need to change the braille display driver. In Narrator settings, select the Use a braille display with Narrator button, then under Braille display driver select the driver used by your third-party screen reader so you can switch between Narrator and that screen reader.

Uninstall Narrator braille support: To remove Narrator braille, open Settings (Windows logo key + I), select Apps, go to Optional features, then Installed features, search for Accessibility - Braille support, expand it, and uninstall the feature. Restart the device after braille support is removed.

23 Reboot the Device

If the Slate suddenly does not respond to button presses, and you know that the battery is not fully discharged, then you may try rebooting the device by pressing the Right bottom most lower Panning key + Dot 8. There is no indication of the

reset event. The unit is in power-off condition after reset and needs to be powered on before it can be used.

24 Device Upgrade Procedure

24.1.1 Device Firmware Upgrade

New versions of the firmware for the Slate are released from time to time, containing improvements, bug fixes, and new features. This section describes the procedure for updating the Slate firmware.

There are two ways to upgrade the firmware of the Slate: either using a Windows PC and a USB cable or using an SD card containing the update file.

The USB upgrade method requires a Windows PC, but the upgrade process is simple and quicker, but the SD card upgrade method only requires a computer to download the update file and put it on the SD card; then no computer is required to perform the actual upgrade.

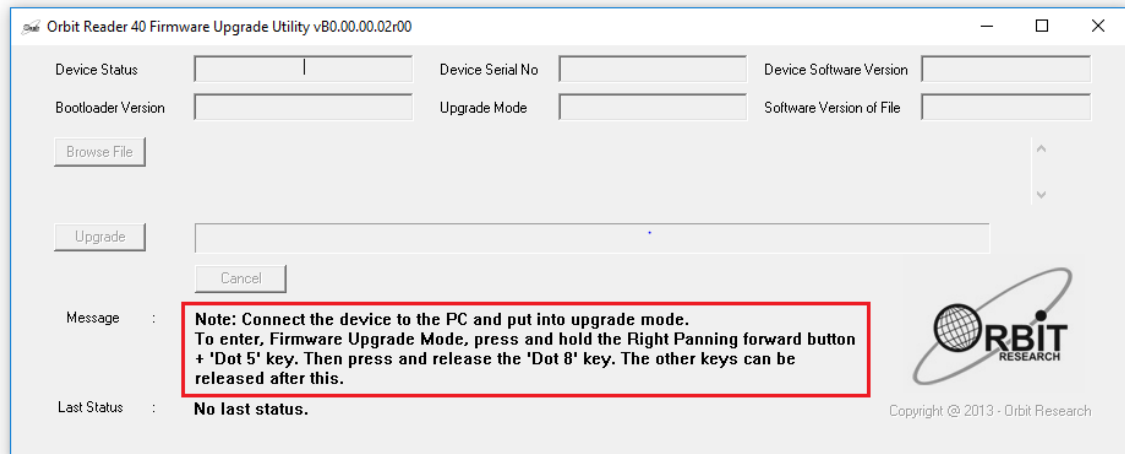
24.1.2 Using the Windows PC Upgrade Utility

The following is required to perform the upgrade to the Slate with a PC:

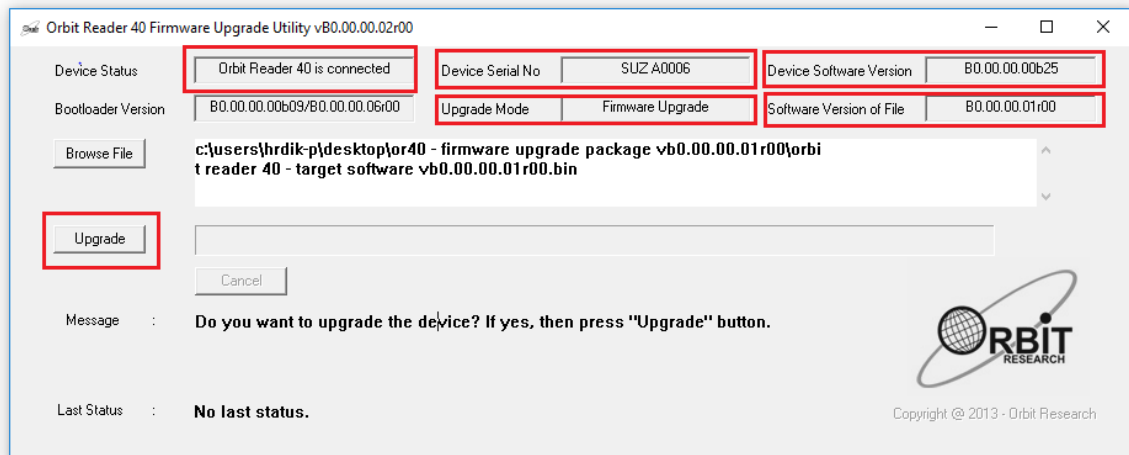
1. The Slate unit
2. Standard USB-A to Type-C USB cable
3. A PC running Windows XP or later.
4. The Slate Upgrade Utility file found in the Slate folder (see **Error! Reference source not found.**).
5. Slate Release Bin files found in the Slate folder (see **Error! Reference source not found.**).

To upgrade the firmware, follow these steps:

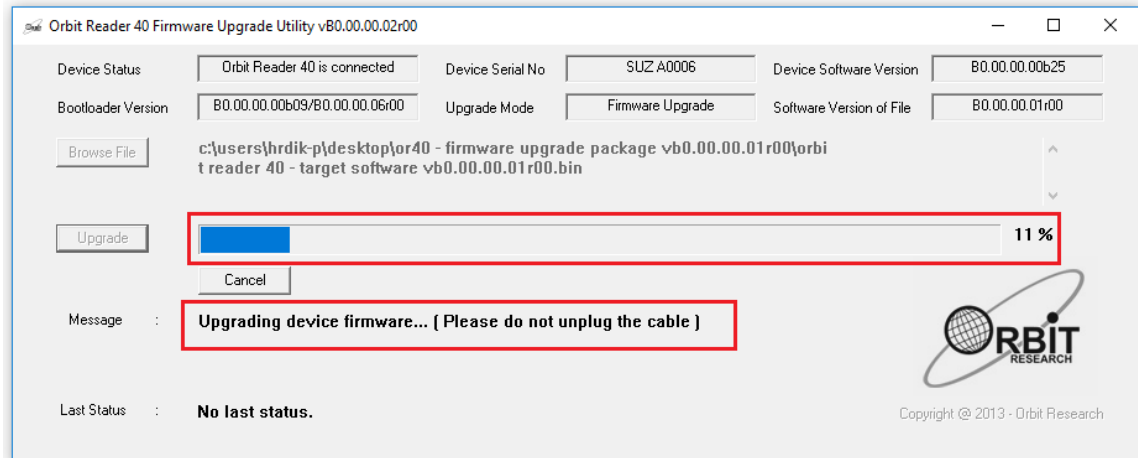
1. Make sure the Slate is turned off.
2. Connect the Slate to the PC using the USB cable.
3. In the Release folder on your PC, run the Slate Firmware Upgrade Utility. If you receive an error message, see the Troubleshooting section. Assuming no errors, the program displays the message, “Note: Connect the device to the PC and put it into upgrade mode. To enter, Firmware Upgrade Mode, press and hold the Right bottom most panning key forward button + 'Dot 5' key. Then press and release the 'Dot 8' key. The other keys can be released after this” in the message field.



4. Press and hold down the right bottom most Panning key forward button + Dot 5, then press Dot 8. The utility shows the message “Slate is connected” in the Device status field. It shows the message “Do you want to upgrade the device?” in the message field at the bottom of the dialog.
5. Release Dot 8 first, then release the Panning key and Dot 5. This switches the Slate to Upgrade mode. You should hear a tone on your PC.
6. The utility shows the device serial number and the software version of the device at the top right corner of the window. If the serial number is blank, repeat steps 4 and 5.
7. Activate the Browse button found in the dialog.
8. Browse and select the firmware bin file from your PC. The file is in the folder you unzipped previously.
9. Once the file is selected, the dialog shows the software version of the selected file. A dialog box will also display the information that the current file selected is firmware binary.



10. Activate the Upgrade button. The utility starts upgrading the device. The device will emit a single vibration pulse at 2 second intervals.



11. Do not unplug the cable. Wait for the message “Device upgrade has been completed” on the upgrade utility or until the Slate reboots and shuts down.
12. The Slate is upgraded. Turn on the Slate to start using the device.

To check for a successful upgrade of the Slate, press Select + Up Arrow to open the Slate Menu and arrow to "Ver" in the list. The version number of the firmware release should match the number shown in the upgrade utility.

24.1.3 Using an SD card to Perform the Upgrade

The following is required to perform the upgrade to the Slate from an SD card:

1. Slate unit
2. Slate Release Bin files found in the Slate folder of the download package (see **Error! Reference source not found.**).
3. Your SD card should have a FAT32 file system.

To upgrade the firmware, follow these steps:

1. Copy the binary file “Slate - Target Software vB0.00.00.XXrYY.bin” from the download package to the root folder of the SD card. Use either the Slate Mass Storage Mode or remove the SD card and put it in a card reader. When completed, insert the SD card into the Slate. Make sure that your SD card contains only one binary file. Remove the other binary files from the SD card.
2. Turn off the Slate. The unit should be turned off before the upgrade is started.

3. Press and hold down the “Bottommost Right Panning forward key” and “Dot 4” key simultaneously, while pressing these two keys, turn on the device using the power key. It will show the message “Preparing...”. Now you can release all the keys. Typically, it will take about 40 to 50 seconds to prepare.
4. The device will emit a single vibration pulse at 2 seconds interval.
5. Once preparation is complete, it should show the message “Upgrading firmware...”. Progress is shown by blinking 2 cells of dot 6 at the end of the message.
6. Typically, it will take 2.5 to 3 minutes to upgrade the firmware. Do not remove the SD card during the upgrade.
7. When the upgrade has been completed, it will show the message “Upgrade complete” for a few seconds and then the device will automatically reset itself and turn off.
8. Turn it on to start using the device.

To check for the successful upgrade of the device, press Select + Up Arrow to open the Slate Menu and arrow to "Ver" in the list. The version number of the firmware release should match the number in the name of the bin file.

24.1.4 Troubleshooting

1. In case the unit freezes up or does not accept any commands at all, you can perform a recovery operation by following the steps suggested below.
 - a. Try a different key combination to upgrade (see below).
 - b. Make sure that you have the binary file “Slate - Target Software vB0.00.00.XXrYY.bin” into the root directory of the SD card.
 - c. Press and hold the Bottom most right pan lower + Dot 4 keys + the Power button and wait for the message “Preparing...”. If you do not get any message within 4 or 5 seconds, press and release the Dot 8 key and then release the other keys.
 - d. Wait for about a minute. The Slate should start upgrading and show the message “Upgrading firmware”.
 - e. Typically, it will take 2.5 to 3 minutes to upgrade the firmware.
 - f. The slate shows the “Upgrade complete” message after completion of a successful firmware upgrade for 5 to 8 seconds and then the device will automatically reset/shut down itself.
2. If the Slate does not show the message “Preparing”, make sure you had pressed the keys in the correct sequence. Press and hold the Bottom

most Right pan lower + Dot 4 keys and without releasing them, press the power key to turn on the device.

3. If you are not sure at what stage of the upgrade process you are, you can always start from the first step. Just reset the Slate by pressing Dot 8 and the Right pan down key.

25 Localization

The following are the steps to be followed for configuring a language other than English.

1. Copy the file on the SD card that you are using with the device. The file can be copied externally through a card reader or putting the device into Mass Storage mode.
2. Go to the Preference menu item “Add language” to check the file you copied. If you have multiple language files in the SD card, you can scroll through them using Left/Right Arrow key.
3. Go to the file of your choice and press Select to load file to internal memory.
4. It may take some time for the file to be loaded. The unit shows busy indication by displaying “busy” on the display.
5. You can load multiple languages following the same process (If you encounter “Memory full” error while adding languages, you need to remove some languages before you can load new languages. Please refer to the “Remove language” section for more details on how to remove languages.)
6. Go to the Profile settings for the profile of your choice among profile 1, 2, 3 or 4 in preference menu.
7. Go to the sub-menu called “system language” and press Select. If you have multiple language files in the internal memory you can scroll through them using Left/Right Arrow key.
8. Go to the file of your choice and press Select. Press dot 7 to exit the system language setting.
9. Now Go to the Read-write menu item which is next to the system language.
10. Go to the file of your choice and press Select. Press dot 7 to exit the read-write language setting.
11. Press dot 7 to exit the menu.
12. Press Select + Dot 1, Select + Dot 2, Select + Dot 3 or Select + Dot 4 to activate the profile 1, profile 2, profile 3 or profile 4, respectively.

26 Troubleshooting

26.1.1 Slate does not power on or seems to freeze

If the Slate does not power on or seems to freeze, try these options in the following order:

Option 1: Plug in the device

1. Plug in the unit with the supplied AC wall connector and cable to ensure that the battery is charged. This is the most reliable power source.
2. Let the unit 'charge' for at least an hour or more.
3. Hold the Power button for at least two seconds. If the unit is on, it should turn off. If it is off, it should come on.

Option 2: Check SD card

1. Remove the SD card.
2. Hold the Power button for two seconds.

Option 3: Unplug the device

1. If the unit is plugged in, unplug the power cord.
2. Hold the Power button for at least two seconds.

Option 4: Reset device

1. Press the Reset command (Dot 8 + right-bottom Panning key). Note: On reset, the unit is unresponsive, and there is no change to the display.
2. Hold the Power button for at least two seconds.

Option 5: Remove the battery

Note: Use this option as the last resort.

1. Call customer service for guidance on safely removing the battery.
2. Leave it out for a few minutes.
3. Reconnect it, then try the options again.

If none of the options works and the device does not come on, contact Customer Service at techsupport@orbitresearch.com.

27 Battery Use and Replacement

The Slate includes a rechargeable Lithium-Ion capacity battery. It charges fully in about three hours under optimal conditions. A full battery charge lasts about three days of typical use. You can check the battery status in the Menu.

When the battery in Slate gets to 10% capacity, Dot 8 of the last cell of the last line on the display starts blinking and vibration indications are also provided.

The battery in Slate should last several years. Gradually, the battery begins discharging faster than usual as its capacity declines. When the duration of time that the battery holds charge becomes inconveniently short, it is time for a replacement.

To replace the battery, follow these steps:

1. Obtain a replacement battery. Use only the battery designed for the Slate. Batteries are available from our website or by calling us.
2. Remove the battery door screws.
3. Remove the battery door.
4. Carefully unplug the connector. Do not pull the wire. Use the connector instead.
5. Insert a new battery.
6. Replace the cover and screws.

To dispose of batteries properly, call the recycling center at 1-800-822-8837.

28 Slate Cleaning Tips

Due to exposure to natural elements such as dust and oils, the Slate should be cleaned periodically.

The following are some tips to keep your Slate clean:

- Cleaning should be performed with the unit switched off and with all pins in the down position.
- Use a vacuum cleaner with a soft tip attachment to remove dust from the pin area.
- Use a lint-free cloth to wipe the cells.
- The cloth may be moistened with water.
- Avoid using the following:
 - Paper towels, cotton swabs or materials that can release fibers.
 - Alcohol or ammonia-based cleaners
 - Canned or compressed air

29 General Specifications

- Dimensions (WxHxD): 11.5 x 6.5 x 1.3 inch; 29.2 x 16.5 x 3.3 cm
- Weight: 1400 grams
- Braille Cells: 3 rows of 40 eight-dot braille cells for 3x40 model and 5 rows of 20 eight-dot braille cells for 5x20 model; Refresh rate < .75 sec

- Braille Input Keys: 8-key Perkins style keypad, with space bar
- Additional Keys: Power on/off button, 4-way cursor keys and select key, 2 panning keys per display line, rocker type
- Supported File Formats: .txt, .brl, .brf, .bra
- OS Support:
- Interfaces and Ports: 1x USB Type C port, for host interface, firmware upgrade, and battery charging, 1x USB Standard-A port for connecting USB flash drives.
- Bluetooth 5.0, Class 2, Flash Media Slot, 1x SD card (4GB to 32GB capacity)
- Battery: User-replaceable, rechargeable Lithium-Ion battery
- Battery Life on a full charge: 3 days of typical use
- Charging Method: PC charger - Charge over USB Port – 5V, 500 mA Max, Wall charger - Charge over USB Port – 5V, 1000 mA Max; USB BC1.2 compliant charger required
- Environmental Conditions: Operating Temperature: 5 °C to 45 °C
- Operating Humidity: 10% - 70% relative humidity,
- Storage Temperature: -15 °C to 70 °C
- Storage Humidity: 5% - 90% relative humidity

30 Appendices

30.1.1 Appendix A - Computer Braille Chart

- ASCII Code 33: Exclamation mark, Dots 2-3-4-6
- ASCII Code 34: Quotation marks, Dots 5
- ASCII Code 35: Number sign (Hash), Dots 3-4-5-6
- ASCII Code 36: Dollar sign, Dots 1-2-4-6
- ASCII Code 37: Percentage sign, Dots 1-4-6
- ASCII Code 38: Ampersand, Dots 1-2-3-4-6
- ASCII Code 39: Apostrophe, Dots 3
- ASCII Code 40: Opening round bracket, Dots 1-2-3-5-6
- ASCII Code 41: Closing round bracket, Dots 2-3-4-5-6
- ASCII Code 42: asterisk, Dots 1-6
- ASCII Code 43: Plus sign, Dots 3-4-6
- ASCII Code 44: Comma, Dots 6
- ASCII Code 45: Minus sign, Dots 3-6
- ASCII Code 46: Full stop, Dots 4-6
- ASCII Code 47: Forward Slash, Dots 3-4

- ASCII Code 48: 0, Dots 3-5-6
- ASCII Code 49: 1, Dots 2
- ASCII Code 50: 2, Dots 2-3
- ASCII Code 51: 3, Dots 2-5
- ASCII Code 52: 4, Dots 2-5-6
- ASCII Code 53: 5, Dots 2-6
- ASCII Code 54: 6, Dots 2-3-5
- ASCII Code 55: 7, Dots 2-3-5-6
- ASCII Code 56: 8, Dots 2-3-6
- ASCII Code 57: 9, Dots 3-5
- ASCII Code 58: Colon, Dots 1-5-6
- ASCII Code 59: Semicolon, Dots 5-6
- ASCII Code 60: Opening triangular bracket, Dots 1-2-6
- ASCII Code 61: Equal to sign, Dots 1-2-3-4-5-6
- ASCII Code 62: Closing triangle bracket, Dots 3-4-5
- ASCII Code 63: Question mark, Dots 1-4-5-6
- ASCII Code 64: At sign, Dots 4-7
- ASCII Code 65: A, Dots 1-7
- ASCII Code 66: B, Dots 1-2-7
- ASCII Code 67: C, Dots 1-4-7
- ASCII Code 68: D, Dots 1-4-5-7
- ASCII Code 69: E, Dots 1-5-7
- ASCII Code 70: F, Dots 1-2-4-7
- ASCII Code 71: G, Dots 1-2-4-5-7
- ASCII Code 72: H, Dots 1-2-5-7
- ASCII Code 73: I, Dots 2-4-7
- ASCII Code 74: J, Dots 2-4-5-7
- ASCII Code 75: K, Dots 1-3-7
- ASCII Code 76: L, Dots 1-2-3-7
- ASCII Code 77: M, Dots 1-3-4-7
- ASCII Code 78: N, Dots 1-3-4-5-7
- ASCII Code 79: O, Dots 1-3-5-7
- ASCII Code 80: P, Dots 1-2-3-4-7
- ASCII Code 81: Q, Dots 1-2-3-4-5-7
- ASCII Code 82: R, Dots 1-2-3-5-7
- ASCII Code 83: S, Dots 2-3-4-7
- ASCII Code 84: T, Dots 2-3-4-5-7

- ASCII Code 85: U, Dots 1-3-6-7
- ASCII Code 86: V, Dots 1-2-3-6-7
- ASCII Code 87: W, Dots 2-4-5-6-7
- ASCII Code 88: X, Dots 1-3-4-6-7
- ASCII Code 89: Y, Dots 1-3-4-5-6-7
- ASCII Code 90: Z, Dots 1-3-5-6-7
- ASCII Code 91: Opening square bracket, Dots 2-4-6-7
- ASCII Code 92: Backward slash, Dots 1-2-5-6-7
- ASCII Code 93: Closing square bracket, Dots 1-2-4-5-6-7
- ASCII Code 94: Caret, Dots 4-5-7
- ASCII Code 95: dash, Dots 4-5-6
- ASCII Code 96: backtick sign, Dots 4
- ASCII Code 97: a, Dots 1
- ASCII Code 98: b, Dots 1-2
- ASCII Code 99: c, Dots 1-4
- ASCII Code 100: d, Dots 1-4-5
- ASCII Code 101: e, Dots 1-5
- ASCII Code 102: f, Dots 1-2-4
- ASCII Code 103: g, Dots 1-2-4-5
- ASCII Code 104: h, Dots 1-2-5
- ASCII Code 105: i, Dots 2-4
- ASCII Code 106: j, Dots 2-4-5
- ASCII Code 107: k, Dots 1-3
- ASCII Code 108: l, Dots 1-2-3
- ASCII Code 109: m, Dots 1-3-4
- ASCII Code 110: n, Dots 1-3-4-5
- ASCII Code 111: o, Dots 1-3-5
- ASCII Code 112: p, Dots 1-2-3-4
- ASCII Code 113: q, Dots 1-2-3-4-5
- ASCII Code 114: r, Dots 1-2-3-5
- ASCII Code 115: s, Dots 2-3-4
- ASCII Code 116: t, Dots 2-3-4-5
- ASCII Code 117: u, Dots 1-3-6
- ASCII Code 118: v, Dots 1-2-3-6
- ASCII Code 119: w, Dots 2-4-5-6
- ASCII Code 120: x, Dots 1-3-4-6
- ASCII Code 121: y, Dots 1-3-4-5-6

- ASCII Code 122: z, Dots 1-3-5-6
- ASCII Code 123: Opening curly bracket, Dots 2-4-6
- ASCII Code 124: Vertical bar, Dots 1-2-5-6
- ASCII Code 125: Closing curly bracket, Dots 1-2-4-5-6
- ASCII Code 126: Tilde, Dots 4-5
- ASCII Code 127: NULL, Dots 4-5-6

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Orbit Research warrants this hardware product against defects in materials and workmanship under normal use for a period of ONE (1) YEAR from the purchase by the original purchaser ("Warranty Period"). If a hardware defect arises and a valid claim is received by Orbit Research LLC within the Warranty Period, at its option and to the extent permitted by law, Orbit Research will either:

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A replacement product or part assumes the remaining warranty of the original product or thirty (30) days from the date of replacement or repair, whichever provides longer coverage. Parts provided in fulfillment of its warranty obligation must be used in products for which warranty service is claimed.

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3. Damage caused by service (including upgrades and expansions) performed by anyone who is not a representative of Orbit Research
4. A product or part that has been modified to alter functionality or capability without the written permission of Orbit Research
5. The serial number has been removed or defaced.

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Your product will be returned to you configured as originally purchased, subject to applicable updates. You will be responsible for reinstalling all other software programs, data, and passwords. Recovery and reinstallation of software programs and user data are not covered under this Limited Warranty.

30.1.5 Appendix C - FCC Information

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Caution

To ensure continued compliance follow the installation instructions and this device must be installed with a computer or peripheral device certified to comply with Part 15 of the FCC rules for the Class B limits. Use shielded interface cables only. Use the power adapter that is supplied with the device to charge its internal battery pack.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.