

VarioUltra User Guide

Formatted for A4

VisioBraille Software V1.4 (Release)

Congratulations! You are now the proud owner of the new VarioUltra, the smart braille display from VISIOBRAILLE in Germany. The purpose of this user guide is to introduce you to the main functions of the device, with several step-by-step examples that you can follow along with on your VarioUltra. These steps in turn will help you gain experience with your new device.

If you are an experienced user of VarioUltra, we have added “***** New ** with v1.4**” to the beginning of sections that are changed or truly new with software v1.4.

- VarioUltra is shipped with the Device Lock switch in the locked position. On the left side of VarioUltra, slide this switch away from you to unlock the device. It's the switch closest to the front left corner of VarioUltra.
- In the USA, VarioUltra ships by default with US English Contracted Braille (grade 2) selected. It's possible to toggle between this and US English Computer Braille. Refer to section 3.4 of this manual for additional details.
- We encourage you to read chapter 1 this manual in its entirety, especially if you're new to refreshable braille displays and braille notetakers. This will help familiarize yourself with VarioUltra, the keyboard and button layout, and the command structure.
- Information on pairing via Bluetooth can be found in section 2.3.
- For lists of VarioUltra commands, and commands that you can use when working with VoiceOver, JAWS, and other screen readers, please refer to chapter 14.
- Please keep the original packaging materials. You never know when you'll need them, and if VarioUltra does need to be shipped anywhere, it will help ensure the device is not damaged in transit.

Still need help?

Feel free to contact team visiobraille

VISIOBRAILLE GmbH

Oßmaritzer Str. 4c

D - 07749 Jena

Germany

Tel.: +49 (0) 3641/2816-0

Fax: +49 (0) 3641/2816-416

E-Mail: info@VisioBraille.de, info@VisioBraille.com or info@varioultra.com

Web: www.VisioBraille.com

Copyright © 2019 VISIOBRAILLE , Oßmaritzer Str. 4c, D - 07749 Jena, Deutschland.

Please have your product serial number available to provide to the support specialist. A braille label with your serial number can be found underneath VarioUltra; you will need to remove VarioUltra from the carrying case to read it. Alternatively, go to Help > About inside the main menu in Braille Notetaker mode.

Context Sensitive Help is provided in Braille Notetaker mode. Use command B9+B2B6 to open the Context Sensitive Help. Use the D2 and D5 buttons to navigate through the help messages. Confirm with OK to exit.

TABLE OF CONTENTS

Chapter 1: First Impressions

.....	9
1.1 What's in the Box?	9
1.2 Physical Tour of VarioUltra.	9
1.3 Switching on VarioUltra for the First Time.	11
1.4 Charging the Device.	12
1.5 Checking Battery Level.	13
1.6 Braille Notetaker Commands.	13
1.7 Braille Notetaker Main Menu.....	13
1.8 Braille Notetaker Main Menu Elements.	14
1.9 Confirmation Prompts.	15
1.10 Help & Context Sensitive Help.	15
1.11 Updating VarioUltra.	16
1.12 Update via Windows PC.	17
1.13 Update via USB Stick.	18
1.14 Update via Settings > System > Update.	19

Chapter 2: Braille Display Mode

.....	21
2.1 Introduction to Braille Display Mode.	21
2.2 Using VarioUltra as a USB Braille Display.	22
2.2.1 VarioUltra with JAWS (USB).	22
2.2.2 VarioUltra with Mac OS & VoiceOver (USB).	23

2.2.3 VarioUltra with Window-Eyes.	23
2.2.4 VarioUltra with NVDA.	24
2.2.5 VarioUltra with Dolphin SuperNova.	24
2.3 Bluetooth: Pairing and Connecting, Defined	25
2.4 Is Bluetooth Off or On?	25
2.5 Using VarioUltra as a Bluetooth Braille Display.	26
2.5.1 Connecting with a Paired Bluetooth Device / Wake up an iOS/Android device from Standby	27
2.5.2 VarioUltra with Windows PC (Bluetooth).	28
2.5.3 Bluetooth COM Ports for use with JAWS.	28
2.5.4 VarioUltra with JAWS (Bluetooth).	29
2.5.5 VarioUltra v1.33 with an iOS Device (Bluetooth).	30
2.5.5.1 VarioUltra v1.4 with an iOS Device (Bluetooth)	30
2.5.6 VarioUltra with an iOS Device (Bluetooth, <i>old method</i>).	31
2.5.7 Paste Contents of Clipboard to Mobile Device	32
2.5.7.1 Braille Key Simulation	33
2.5.7.2 HID Key Simulation	34
2.5.8 VarioUltra with Mac OS & VoiceOver (Bluetooth).	35
2.5.9 VarioUltra with Mac OS & VoiceOver (Bluetooth, old method).	35

2.5.10 VarioUltra with an Android Device (Bluetooth).	37
2.6 Switching Between Connected Bluetooth Devices	38
2.7 Mapping Bluetooth Channels.	38
2.8 Using VarioUltra with Linux	39
2.9 Suppressing Connection Messages.	42
Chapter 3: Braille Notetaker Mode.	43
3.1 Command Menus.	44
3.2 Braille Tables / Supported Braille.	45
3.3 Unified English Braille (UEB).	45
3.4 Master Switch: Changing Settings.	46
3.5 Default Braille Codes	47
3.6 Braille in BRF and RTF Documents	49
3.7 Braille Inside Menus, Messages, and Dialogs	49
Chapter 4: Word Processor Application.....	50
4.1 Typing a Document.	50
4.2 Navigating within a Document.	51
4.3 Remembering Last Reading Position.	52
4.4 Display All File Types.	52
4.5 Editing PowerPoint Documents.	52

4.6 Command Menus.	52
4.6.1 File Menu	52
4.6.2 Edit Menu.	55
4.6.4 Insert Menu.	58
4.6.5 Navigate Menu.	58
4.6.6 Tools Menu.	58
4.7 Exit Word Processor.	60
Chapter 5: PDF Viewer.	61
5.1 Command Menus.	61
5.2 Starting PDF Viewer and Opening a Document	61
5.3 Opening a Password Protected PDF File	62
5.4 Navigating Within a PDF Document	62
5.5 Page Navigation	63
5.6 Reading a Document with Columns.	63
5.7 Link Navigation.	64
5.8 Bookmarks.	64
5.9 Reading Position and Other Document Information.	64
5.10 Save PDF Document as a Text File.	65
5.11 Highlight and Copy Text in a PDF File.	65
5.12 Find.	66

5.13 Exit PDF Viewer.	66
Chapter 6: Excel Viewer.	67
6.1 Command Menus.	67
6.2 Starting Excel Viewer and Opening a Document.	67
6.3 Save Excel Files as a Text File.	68
6.4 Copying Cell Content to the Clipboard.	68
6.5 Excel Document Information.	68
6.6 Reading by Cells, Row, or Column.	68
6.7 Reading by Cell.	69
6.8 Reading by Row.	69
6.9 Reading by Column.	70
6.10 Reading Files with Multiple Worksheets.	70
6.11 Find and Find next.	71
6.12 Define Column Heading.	71
6.13 Define Row Heading.	72
6.14 Edit or Delete Heading Definition.	72
6.15 Reading Cell Comments.	72
6.16 Exit Excel Viewer	73
Chapter 7: Calculator.	74

7.1 Command Menus.	
74	
7.2 Entering Numbers and Operators	
75	
7.3 Inputting Calculations.	
76	
7.4 Editing Calculations.	
76	
7.5 Navigating within Current and Previous Calculations.	
76	
7.6 Using the Clipboard.....	
77	
7.7 Settings.	
77	
7.8 Memory List and Memory Functions.	
77	
7.9 Scientific Mathematical Functions.	
79	
7.10 Basic Calculations.	
79	
7.11 Powers, Logarithms, Etc.	
79	
7.14 Conversions.	
80	
7.15 Exit Calculator.	
81	
Chapter 8: Timers.	
..... 81	
8.1 Timer.	
81	
8.2 Stopwatch.	
82	
8.3 Alarm Clock.	
83	
8.4 Exit Timers.	
84	
Chapter 9: File Manager.	
..... 86	

9.1 Command Menus.	86
--------------------------------	-----------

9.2 Navigating Around File Manager.	86
9.3 Create a New Folder.	87
9.4 Open a File or Folder.	88
9.5 Opening Files from Within the Word Processor Application	88
9.6 Delete a File or Folder	89
9.7 Rename a File or Folder	90
9.8 Create a New Blank Document	90
9.9 Opening Documents	91
9.10 Introduction.	92
9.11 Entering and Navigating the File Manager.	92
9.12 Additional Information about Files and Folders.....	93
9.13 Using File Manager with External USB Stick.	93
9.14 Using VarioUltra as an External Drive on a PC.	94
9.15 Exit File Manager.	94
Chapter 10: Settings Menu.	
..... 95	
10.1 Settings Sub Menu Items.	95
10.2 Settings > Alerts Menu.	95
10.2.1 Alerts > Volume.	96
10.2.2 Alerts > Vibration On/Off.	96
10.3 Settings > Braille Menu.....	96
10.3.1 Braille > Braille Presentation.	97

10.3.1.1 Braille > Left/Right Margin.	97
10.3.1.2 Braille > Line Jump/Drag.	97
10.3.1.3 Braille > Show Messages With/Without Word Wrap.	98
10.3.1.4 Braille > Dot Strength.	98
10.3.2 Braille > Cursor menu.	98
10.3.3 Braille > Default Braille Codes.	100
10.3.4 Braille > Standard Braille Tables	101
10.3.5 Braille > Hide and Display Braille Dots 7 and 8	101
10.4 Settings > Display Settings.....	102
10.4.1 Display Settings > Menu Shortcut Commands	102
10.4.2 Display Settings > Hotkeys.	102
10.4.3 Display Settings > Templates	103
10.4.3.1 Templates > Menu Item	105
10.4.3.2 Templates > Button	106
10.4.3.3 Templates > Checkbox	106
10.4.3.4 Templates > Textbox	106
10.4.3.5 Templates > Textbox Read Only	107
10.4.3.6 Templates > List Box	107
10.4.3.7 Templates > File	107

10.4.3.8 Templates > Folder.	108
10.4.4 Display Settings > Password Options.	108
10.4.5 Display Settings > Messages.	109
10.5 Settings > Keyboard.	109
10.5.1 Keyboard > B7 Key.	109
10.5.2 Keyboard > B8 Key.	110
10.5.3 Keyboard > Double Stroke.	110
10.5.4 Keyboard > One Hand Mode.	110
10.5.5 Keyboard > Key Mapping	113
10.5.7 Keyboard > Auto Repeat for Navystick	114
10.5.8 Keyboard > Auto Scroll	114
10.6 Settings > Date and Time	114
10.6.1 Date and Time > Date.	115
10.6.2 Date and Time > Time.	115
10.6.3 Date and Time > Date and Time Format.	116
10.6.4 Date and Time > Time Zone.	116
10.7 Settings > Power Management.	117
10.7.1 Power Management > Auto Suspend.	117
10.7.2 Power Management > Battery.	117
10.8 Settings > IO Profiles.	119
10.8.1 IO Profiles > Loading a Profile.	120
10.8.2 IO Profiles > Create and Save a New Profile.	120
10.8.3 IO Profiles > Use Selected Profile.	121
10.9 Braille Display Mode Menu.	121
10.9.1 Braille Display Mode > Device Emulation.	122
10.9.2 Braille Display Mode > Enable Bluetooth Automatically.	122
10.9.3 Braille Display Mode > Vibrate on Device Connected.	122
10.9.4 Braille Display Mode > Show Message if Device Connected.	123
10.9.5 Braille Display Mode > Key Simulation Properties.	123
10.10 Settings > Bluetooth Menu.	125
10.11 Settings > System Menu.	125
10.11.1 System > Update.	126
10.11.2 System > Disk Cleanup.	126

10.11.3 System > Reset Device.	126
10.12 Exit Settings	127
Chapter 11: Help Menu.	128
11.1 Exit Help	128
Chapter 12: Contact VISIOBRAILLE	128
Chapter 13: Acknowledgements	130

Chapter 14: Appendices	130
14.1 VarioUltra iOS Commands	130
14.2 VarioUltra BrailleBack Commands.....	132
14.3 VarioUltra Commands	134
14.4 JAWS Commands	136
14.5 VarioUltra Commands for Mac OSX	137
14.6 VarioUltra Menu Structure	139

Chapter 1: First Impressions

1.1 What's in the Box? VarioUltra is shipped inside 2 cardboard boxes to help protect it during transit. We recommend you keep these in case VarioUltra ever needs to be sent to us for service or Upgrade. The contents of the box include:

- 1) A Quick Reference Guide
- 2) A VarioUltra braille display; it can be found inside additional protective packaging.
- 3) A carrying case and strap. They're contained inside a plastic bag. The strap connects to the strap anchor clips that are already added to VarioUltra
- 4) A USB to USB-C cable, and a square USB plug. The USB plug has the US-style prongs folded into the square. Unfold them to plug into a power outlet.
- 5) A small box with a variety of international plug adaptors. Unless you're using VarioUltra outside of the USA, there should be no need to worry about these adaptors.

Although the VarioUltra battery is charged during the production process, the battery may not be at 100% charge by the time it reaches you. You can charge it at any time by connecting the USB-C end of the cable into the USB-C port on the left side of VarioUltra, and plug the other end—the USB plug—into an electrical outlet. When VarioUltra is connected to a power source, braille cells will fill to indicate how fully charged the battery is. For example, if your device is 50% charged, you can expect to find all

the dots raised on cells on the left half of the display. When fully charged, all dots on all cells will be showing.

We recommend using the carrying case when traveling with VarioUltra. While the device is very durable, it is still an electronic device. Take care to avoid dropping VarioUltra, or exposing it to liquid, as damage is not covered under warranty.

1.2 Physical Tour of VarioUltra.

VarioUltra includes a braille keyboard, a braille line with cursor routing buttons, and a variety of other *buttons* and switches.

A VISIOBRAILLE braille keyboard is ergonomic by design. The 8 braille keys are laid out in a slightly curved fashion. If you hold your hands parallel with each other, you may miss dots 1 and 4 which sit more forward than the other keys. Move the palms of your hands in the direction of the front corners of VarioUltra and your fingers should naturally align with the button layout. Braille keys are referred to throughout this manual as B1, B2, etc., all the way to B8.

Depending on the VarioUltra model you own, it will have either 20 or 40 braille cells, and an equal number of cursor routing buttons that can be found directly above each cell. Use cursor routing buttons to move the cursor within a document, or to select options inside menus.

Display Buttons. There are 6 display buttons in all, 3 on each side of the braille line. These buttons are used to navigate around a document as you read. These buttons are also used to command and control certain devices such as an iPhone or iPad. Display buttons are referred to as D1, D2, etc. D1, D2, and D3 are on the left side of the device, while D4, D5, and D6 are on the right.

Thumb Keys are located below the braille line, along the front, angled edge of VarioUltra. They are an inch wide by half an inch tall. In braille display mode, both buttons function as a space bar. In braille notetaker mode, the one on the left is used as a command key; the one on the right is space. The thumb keys are referred to as B9 and B0 throughout this document.

The Navistick is a 5-way joystick, located between the two thumb keys. Use Navistick to move left, right, up, or down by tapping the edge of the button in the desired direction. Pressing in on the middle part of the Navistick selects and/or confirms options within the menu structure of VarioUltra. The Navistick can also be used to move through a document, or to move through menus.

System Keys are small, circular buttons located along the front edge of VarioUltra. You will find S1 and S2 to the left of the left thumb key, and S3 and S4 to the right of the right thumb key. When in Braille Notetaker mode, a long press of S3 always takes you back to the main menu. A short press of S3 inside applications will open or close the Command Menu.

There are two USB ports on the left edge of VarioUltra. The standard USB port is for use with a standard USB stick. The smaller, USB-C port is used to connect to power, or to connect to a Windows or Mac computer.

There are two slider switches on the left side of VarioUltra: one is the Device Mode switch; the other is the Lock Switch. The one next to the USB-C port is the *Device Mode switch*. When facing toward the back of VarioUltra, you will be in Braille Notetaker mode. When facing toward the front, you will be in Braille Display mode. The Lock Switch is closest to the front. When facing away from you, VarioUltra is unlocked. When facing toward you, VarioUltra is locked. When locked, no buttons work, including the power button.

The power button can be found on the right side of VarioUltra. When switched off, a short press of the power button starts VarioUltra. Once on, a short press of the power button puts VarioUltra into Suspend mode. A short press wakes it up again, and so on.

If you hold the power button for 15-20 seconds, VarioUltra will reboot. To shut down VarioUltra completely, hold down the S4 key, press and release the power button, and immediately release S4. VarioUltra will vibrate and shut down.

1.3 Switching on VarioUltra for the First Time.

Your VarioUltra should arrive with the lock switch in the locked position. Slide this switch to the unlocked position, and press and release the power button. From a cold start, VarioUltra boots up in about 35 seconds.

During the boot up process, you will witness a progress bar of dots 7 and 8, followed by a flashing cursor at cell position 1, and the name “VarioUltra 20” or “VarioUltra 40” displayed beside it. When this message disappears, your device is ready to use. If your device is in Braille Notetaker mode, you will be at the top of the main menu, which means Word Processor is displayed. If your device is in Braille Display mode, you will probably see USB displayed for a few seconds, and then the display goes blank until you choose to connect to something.

Note that if VarioUltra was previously in suspend mode, a short tap of the power button wakes up the device in a couple of seconds. It just wakes up where you left off. Note too that VarioUltra will switch off after

10 minutes of inactivity. It's possible to lengthen this time default, or switch it off completely so that your device only switches off when you press the power button. Suspend mode will not happen if you are actively connected to a USB or Bluetooth device.

To turn VarioUltra off completely, press and hold system key S4 and then tap and release the power button. VarioUltra will vibrate and power off. If VarioUltra is connected to a power supply or connected to a computer via USB, the braille display will show a row of braille cells with all dots showing on each cell, indicating the charge level of the battery. If VarioUltra is not connected to anything, the braille display will be blank when switched off completely. Switching VarioUltra off completely is recommended during extended periods when it will not be used. This will help preserve battery life over longer periods of time.

1.4 Charging the Device.

VarioUltra has an internal Lithium ion battery that is charged via the USB-C to standard type A USB cable. The USB-C end of the cable that inserts into VarioUltra has a connector that is longer on one side than the other. The longer edge needs to be on top to fit in VarioUltra; a helpful way to know when the longer edge is facing up is to feel for 2 small bumps on toward the outer edges. If the bumpy side is facing up, you have the cable facing the right way. Connect the other end of the cable into a USB plug, into the USB port of a computer, or to a USB power adaptor (minimum rated 1Ampere).

Note:

Charging VarioUltra takes approximately 2.5 hours when plugged directly to an electrical outlet. Connecting via USB to devices such as a computer takes more time – as much as two times longer.

The battery should last between 8 and 12 hours depending on whether you are connected to Bluetooth devices, etc. Running in Braille Notetaker mode with Bluetooth switched off will last the longest.

Conversely, running in Braille Display mode while actively connected via Bluetooth to other devices will last the least amount of time.

If the battery drains completely, connect VarioUltra to an external power source using the USB plug and USB cable that came with your device.

Whenever the battery drains completely, connecting VarioUltra to a power source will not immediately bring it back to life. Please wait a few

minutes for VarioUltra to attain a minimum amount of power. If you notice the cells fill up with all dots showing in each cell, you will need at least 5 cells to be filled before switching on VarioUltra.

1.5 Checking Battery Level.

You can check the battery level of VarioUltra in both Braille Notetaker and Braille Display *modes*. In Braille Notetaker mode, give two short taps of system key S3. If you're in Braille Display mode, press and hold S2 and then tap the left thumb key, B9.

1.6 Braille Notetaker Commands.

Trying to remember all the shortcut commands on day 1 is probably not a practical idea. The good news is that while you're learning what the Braille Notetaker can do, you can achieve virtually all things by using the menus.

Remember:

- 1) A long press of the S3 button will always take you back to the last position in the main menu.
- 2) When inside an application, a short press of the S3 button will open the Command Menu in much the same way that the ALT key opens menus on Windows, or CTRL Function F2 opens them on a Mac.
- 3) When inside the Command Menu of a VarioUltra application, a short press of the S3 button exits back to the application.
- 4) In the case of many other braille notetakers, commands are typically achieved by pressing the space bar with a braille character. This is commonly referred to as a chord command. Chord C means you press the space with dots 1 and 3 on the braille keyboard.
- 5) VarioUltra provides commands to do virtually anything from any location inside the device. To achieve this, you will typically use braille keys B7 and/or B8 along with the chord command. To copy something in VarioUltra, you press the left thumb key B9 with dots 1, 3, and 8. If you haven't typed with your pinky fingers in a while this may feel strange at first, but once mastered, it will feel like second nature.

1.7 Braille Notetaker Main Menu.

When you're in the main menu of the Braille Notetaker mode, you're in a vertical list of applications.

These include:

1. Word Processor: the hotkey is 'w'; the global command is w+B789.
2. PDF Viewer: the hotkey is 'p'; the global command is y+B789.
3. Excel Viewer: the hotkey is 'x'; the global command is x+B789.
4. Calculator: the hotkey is 'c'; the global command c+B789.
5. Timers: the hotkey is 't'; the global command is t+B789.
6. File Manager: the hotkey is 'f'; the global command f+B789.
7. Settings: the hotkey is 's'; the global command is s+B789.
8. Help: the hotkey is 'h'; the global command is h+B789.

Hotkey: if you're within the main menu, typing the hotkey letter on its own will open the application.

Global Command: enter these commands from anywhere in Braille Notetaker, to open the application.

From the factory, main menu items will have the letters 'MI' displayed at the beginning of the line. The element 'MI' stands for Menu Item.

Elements like this can be hidden, saving you some space. You can scroll up and down in the menus using either the display buttons D1 and D3, or by tapping the top or bottom edge of the Navistick. When the menu displays the name of the application you want to use, you can open it in one of three ways. Press the left thumb key B9 one time, press any cursor routing button, or press in on the middle of the Navistick.

Within the pages of this manual, shortcut commands are written in one of two ways. By way of example, if the command requires you to press the left thumb key B9 with braille keys B2 and B3, the command will be written as B9+B2B3. In cases where a letter or punctuation symbol is used, the command will be written as c+B8B9 as in the case of the global command for copy.

Global shortcut commands are also displayed after the name of an application or menu item. Like all other elements, these commands can also be hidden. Refer to

Display Settings > Templates

1.8 Braille Notetaker Main Menu Elements.

Braille elements are those things that appear on the display when in Braille Notetaker mode. Examples include: MI, LI, CB, CHK, and EB. You can find more details in section 10.3 Display Settings.

- 1) **MI**: this element means you are on a menu item. Menu items are displayed vertically, which means you navigate up and down to move from one item to another. In most cases, you can select by entering the corresponding hotkey or shortcut command, by pressing the left thumb key B9, or by pressing in on the Navistick. Using the assigned shortcut command selects the item without the need to open the menu.
- 2) **LI**: this element means you are on a list item. List items are displayed horizontally, which means you navigate left and right to move from one item to another, and the selected item is presented. Entering the first letter of an item takes you directly to that item in the list.
- 3) **CB**: The Control Button item refers to words such as OK, Cancel, Yes, and No. These words typically appear in message dialogs. You confirm your choice by pressing a cursor routing button above the word in question or by pressing the left thumb key B9.
- 4) **CHK**: This element refers to a checkbox. You can check and uncheck checkboxes by navigating to the right with the Navistick, by pressing a cursor routing button above the checkbox, or by tapping the right thumb key B0.
- 5) **EB**: This element refers to an edit box, into which text can be entered. You will encounter edit boxes in those instances where a value needs to be entered.

1.9 Confirmation Prompts.

Throughout the Braille Notetaker menu structure of VarioUltra you will find references to things you should or could confirm. Common examples include confirming with OK to exit a dialog, or confirming with YES or NO. In these cases, the word or words in question will be present on the braille display, or accessible by scrolling down or up with the Navistick to find them. When you find them, you can confirm with B9, pressing in on the Navistick, or selecting a cursor routing button above any part of a word. You will find an example below in the next section, Help & Context Sensitive Help, where you are instructed to “scroll down and confirm with OK to exit” to leave the help dialog.

1.10 Help & Context Sensitive Help.

VarioUltra has two Help features.

To get general information about VarioUltra or to access this User Guide, enter command h+B7B8B9. This opens the Help menu, which

contains a menu item to open the user guide and a menu item to open the dialog “About VarioUltra”. You can use display keys D2 and D5 within the About VarioUltra dialog to navigate through the information that is presented there. Scroll down and confirm with OK to exit.

In virtually every other area of the product, entering command B9+B2B6 will display context sensitive help for the menu item, application, or dialog box that you are interested in learning more about. Use display keys D2 and D5 to navigate through the context sensitive help messages. Scroll down and confirm with OK to exit.

1.11 Updating VarioUltra.

From time to time, new VarioUltra software updates will become available for download from the VISIOBRAILLE web site, <https://www.visiobraille.com>. Update files are provided in the form of a zip archive file.

Note:

- 1) Do not unzip the update or upgrade file. Doing so could cause the update or upgrade process to fail.
- 2) If you use the Safari web browser on a Mac computer and plan to use it to download the update file, be sure and first uncheck the box for ‘*Open “safe” files after downloading*’. If the box is left checked, the update file will be automatically unzipped after downloading and will not work with VarioUltra.
- 3) From within Safari, go to Preferences > General, and uncheck the box for this feature until after the VarioUltra update zip file has been downloaded.
- 4) In the unlikely event that you own a VarioUltra that is running software version 1.0, please do not attempt to update VarioUltra without first contacting VISIOBRAILLE technical support. The update process is different for v1.0 than it is for newer software versions.
- 5) If your VarioUltra is running software version 1.1 or newer, there are two approaches to copying the file to VarioUltra. The first is by connecting via USB to a Windows computer; the second is with a USB stick. Instructions for both options follow in sections 1.11.1 and 1.11.2.

***** New *** with v1.4:**

Some aspects of the update process have changed.

The traditional approach is to copy the update zip archive file to the Flashdisk storage of VarioUltra, and then with the unit connected to power, press D3D6B7B8 simultaneously to start the update.

When you choose to update the traditional way, all individual settings such as Bluetooth pairing and channel assignments are erased. Profiles for the default US English Contracted Braille and the newly supported UEB are installed.

As a new alternative, if update via menu Settings > System > Software Update, your user settings and Bluetooth pairing information remain.

To benefit from the new UEB and US English Contracted Braille profiles, you must do the following after installation:

Go to menu Settings > System > Reset Device, and check the checkbox (CHK) "Reset User Settings to Default", then select CONFIRM to reset and restart the device.

1.12 Update via Windows PC.

This section provides instructions for copying the update or upgrade file to VarioUltra via a USB connection with a Windows PC.

- 1) Download the update zip file to your Windows PC. Locate the downloaded file and copy it to the clipboard with the copy command you are most comfortable with.
- 2) Use the VISIOBRAILLE-supplied USB cable to connect VarioUltra to your PC. VarioUltra will be recognized as a Portable Device; in most cases, it will appear under your computer in Windows Explorer as a portable device called "VarioUltra".
- 3) Navigate to VarioUltra in Windows Explorer and enter it to find VarioUltra Storage; this is the location where you can paste or otherwise copy the zip update or upgrade file to.
- 4) Once the zip file has been copied to VarioUltra, you are ready to start the update process.
- 5) VarioUltra must be connected to a power source during the update process, so either leave it connected via USB to your PC, or connect it to another power source.
- 6) Start the upgrade process by simultaneously pressing braille keys B7 and B8, and display buttons D3 and D6. The update process will commence. First a row of dots 7 and 8, then a group of 5 braille characters that move from left to right, and then finally VarioUltra will restart and be ready to use.

1.13 Update via USB Stick.

This section provides instructions for copying a VarioUltra update or upgrade file to VarioUltra via USB Stick, and then performing the update process.

1. If you use a Windows computer, download the update zip file to your Windows PC. Locate the downloaded file and copy it to a USB stick. While it's not mandatory, copying the update or upgrade file to a blank USB stick may make it easier later in this process.
2. If you use a Mac computer and use the Safari web browser, be sure and first uncheck the box for '*Open "safe" files after downloading*'. If the box is left checked, the update file will be automatically unzipped after downloading and will not work with VarioUltra.
3. From within Safari, go to Preferences > General, and uncheck the box for this feature until after the VarioUltra update zip file has been downloaded.
4. Locate the downloaded file and copy it to a USB stick.
5. With your VarioUltra switched on and in Braille Notetaker mode, connect the USB stick that contains the update or upgrade file.
6. Open the File Manager application from within the Main Menu.
7. Use the Navystick to navigate down to the entry called "Stick". This is the USB stick that you inserted a moment ago.
8. Navystick right to open the stick and search for the VarioUltra update file. Once you find the file, highlight it by pressing the right thumb key, B0. You will know the file is highlighted because dot 8 will be added to each character of the file name.
9. With the file name highlighted, copy it using global command B9 + C + B8 (B9 + B1B4B8), or use the copy command inside the Edit menu. The braille display will announce that one item is prepared.
10. Now Navystick left to exit the stick, and then navigate back up to Flashdisk.
11. With Flashdisk displayed, navigate right to enter the Flashdisk. This is the root folder where the file needs to be copied to.
12. Paste the update or upgrade file to this location using global command B9 + V + B8 (B9 + B12368), or use the paste command inside the Edit menu. The first cell on the braille display will flash during this time.
13. Once the file is pasted to the Flashdisk, VarioUltra is ready to be updated. Since VarioUltra must be connected to a power

source during the update process, either connect it via USB to a computer or to an electrical outlet.

14. Start the upgrade by simultaneously pressing braille keys B7 B8, and display buttons D3 D6. If you correctly press these keys together, the update process will commence. First a row of dots 7 and 8, then a group of 5 braille characters that move from left to right, and then finally VarioUltra will restart and be ready to use.

The VarioUltra update process allows the installation of different components, which are part of the update package. The routine checks which components are already present on the device, and installs only those items that are new. Different progress bars will appear on the braille display during installation steps. Installation typically takes less than 2 minutes.

1.14 Update via Settings > System > Update.

New with VarioUltra version 1.33, the Update feature under menu item Settings > System > Update allows you to start the update process from within the menu, instead of using the command B7B8D3D6.

Here is how it works:

1. Copy a VarioUltra update file or upgrade file to VarioUltra using the instructions covered in previous sections, 1.11 through 1.13.
2. Navigate to VarioUltra menu Settings > System. The first option in the list is Update.
3. In the Update dialog, you get a list "Update Files", where the names of the update zip files are shown, followed by a series of numbers. If there is one update file, the numbers will say "1/1", which stands for file one of one. If you had two update files, you might see "1/2" or "2/2" for one of two and two of two respectively.
4. If more than one file name is shown, move Navistick right or left and select the desired update file. Move down and confirm the "details" button with thumb key B9, or press in on the Navistick.
5. A dialog opens and you are in a multi-line text box "description". Here you get information about the changes or new features. Use D4D6 to leave this multi-line text box and reach the other controls. With the other controls, you can define if your individual user settings shall remain.
6. Confirm the button "Prepare Selected" to start the update process. First, the zip file is unzipped, and then checked. Both are accompanied by progress information. In case the zip file is

damaged, the process stops. If all went well, you get a status message “ready to install”.

7. Confirm the “update now” button with thumb key B9, or press in on the Navistick.

During the installation, you get different progress information. When everything is complete, VarioUltra reboots with the new software version. Remember to connect VarioUltra to power during the update process; it will not work otherwise.

Chapter 2: Braille Display Mode

2.1 Introduction to Braille Display Mode.

VarioUltra is a very smart braille display. Unlike other braille devices that limit you to one single connection via Bluetooth or USB, VarioUltra lets you connect simultaneously with up to 5 different devices. VarioUltra was the first braille device in the world to offer multiple device connectivity.

Connecting VarioUltra and up to 5 different devices is possible using 1 x USB and 4 x channels of Bluetooth. Once paired and/or connected, you can switch instantly between devices by pressing and holding down S2, and then tapping a corresponding braille key that is assigned to the device in question. This command instructs the braille display to show information from the chosen device.

**** New ** with v1.4: this command can now wake up a paired iOS or Android device, so long as it is in standby mode, and in range of your VarioUltra.**

For example:

- 1) S2 plus B1 selects the USB device
- 2) S2 plus B4 selects Bluetooth channel 1 (bt1)
- 3) S2 plus B5 selects Bluetooth channel 2 (bt2)
- 4) S2 plus B6 selects Bluetooth channel 3 (bt3)
- 5) S2 plus B8 selects Bluetooth channel 4 (bt4)

When toggling between channels, remember to release all buttons after entering a command. If you don't let go of S2 between selections, it's likely that nothing will happen.

Additional Commands in Braille Display Mode:

1. S2+B9 (left thumb key): presents a hint message with battery status, time and date. Press the routing button above the first cell to freeze the message. Press any other routing key to clear the message.

2. S2+B2 switches off Bluetooth.
3. S2+B3 opens a list and presents which device is paired and connected to the available Bluetooth channels. Move left and right to get the information.
 - a. VarioUltra presents the channel and the name of the device.

b. If the name is in parenthesis, it means that the device is paired and assigned to this channel, but not in range and therefore not connected.

2.2 Using VarioUltra as a USB Braille Display.

With Device Mode set to braille display, insert the USB-C cable into the USB-C port on VarioUltra, and the other end into the USB port of your computer.

Here are some screen reader specific instructions.

2.2.1 VarioUltra with JAWS (USB).

An updated JAWS driver version 15.53 is available for VarioUltra. This and other JAWS drivers are available for download from the VISIOBRAILLE web site at

https://www.visiobracille.de/index.php?article_id=12&clang=1&file=baumjfwuni_v15.53.zip

If you do not install the JAWS VarioUltra driver, you will not find VarioUltra listed among supported braille displays, and it will not work with JAWS.

To use VarioUltra with JAWS using a USB connection:

- 1) Install the VarioUltra driver for JAWS.
- 2) Connect the USB cable to the USB-C port of VarioUltra, and to the standard USB port of your Windows computer.
- 3) Switch on VarioUltra if you have not already done so. Your computer may acknowledge that a new device has been connected.
- 4) Open the JAWS menu and go to menu Options > Braille. A dialog window appears labeled Braille Basic Settings.
- 5) Enter ALT+B to select Add Braille Display. You can also tab through the buttons to find and select it.
- 6) A new Select Components dialog window appears. Scroll down the long list of supported braille displays to find VarioUltra 20 or VarioUltra 40, or VISIOBRAILLE Universal USB. Press space to check the box for whichever display option you choose, and then press enter to move to the next window.
- 7) Make sure the output port is set to USB. If you specified more than one braille display you may be prompted with the same question for each display.
- 8) Next, select your primary device. For our example, we will pick VarioUltra 40. Then select the Finish button.

9) Restart JAWS if prompted to do so. VarioUltra should start working immediately.

2.2.2 VarioUltra with Mac OS & VoiceOver (USB).

VarioUltra works great with Mac computers via Bluetooth. If you have a Mac computer running macOS Sierra, you can also connect to your Mac via USB.

If your Mac computer has macOS Sierra installed, and there are no other braille displays installed, the simple act of switching on VoiceOver, and then connecting VarioUltra is all that is required. It just works.

If you have multiple braille displays connected to your Mac, go to the VoiceOver Utility that is available under System Preferences > Accessibility > VoiceOver, and select the Braille option from the list. From there select Displays and make sure VarioUltra is set as *the* primary braille display. It should now work.

Note: If your Mac is running an older operating system such as OSX El Capitan, it is only possible to use VarioUltra over a Bluetooth connection.

2.2.3 VarioUltra with Window-Eyes.

According to an announcement from GW Micro (AI Squared/VFO Group), the Window-Eyes screen reader is no longer available. Existing users of Window-Eyes are being offered JAWS 18 as a replacement. For complete details, refer to <http://www.gwmicro.com/window-eyes/migrate> .

Using Window-Eyes with VarioUltra over a USB connection is supported. If you wish to connect via Bluetooth, it is necessary to set VarioUltra's Bluetooth Emulation mode to VarioConnect.

For VarioUltra to work optimally with Window-Eyes, first download and install the VarioUltra driver for Window-Eyes prior to use. A link to the download can be found on the VISIOBRAILLE web site at

<https://www.visiobraille.de/media/BrailleSrvWe.zip>

Save the file to your computer and run the executable to install.

Connecting via USB:

- 1) Connect VarioUltra to your Windows computer using the supplied USB cable.
- 2) Open the Device > Braille Display menu within Window-Eyes and select VarioUltra from the list.
- 3) Select USB as the connection type.

Connecting via Bluetooth:

- 1) You will have already changed the Bluetooth Emulation mode to VarioConnect, and successfully paired your VarioUltra with your Windows computer.
- 2) Open the Bluetooth device manager on your Windows computer. You should see VarioConnect in the list of paired devices.
- 3) Tab or arrow over to VarioConnect and open the Properties dialog to confirm that one of the four serial channels is active. Save and confirm these settings.
- 4) Open the Properties again and confirm which channel number is being used for the output port of VarioConnect.
- 5) In Window-Eyes, open Device > Braille Display and select VarioConnect 24/32/40 from the list.
- 6) Select the serial output Bluetooth port using the output port number confirmed in step 4.
- 7) Press the Activate button and confirm the message.

2.2.4 VarioUltra with NVDA.

NVDA introduced Bluetooth support for VarioUltra with NVDA 2015.4, and USB support with 2016.1.

Unlike previous versions of NVDA, the newer 2015.4 and 2016.1 releases do not require any changes to the serial port. Configuration is now automatic.

From the NVDA menu, choose Preferences > Braille. In the Braille Display combo box, choose "VISIOBRAILLE/BAUM/Humanware/APH Braille Displays" and press Enter.

2.2.5 VarioUltra with Dolphin SuperNova.

Dolphin released support for VarioUltra in March 2016. At a minimum, you need to be running version 15.03 of Dolphin Screen Reader or Dolphin SuperNova Magnifier and Screen Reader.

- 1) With your Dolphin software running, connect VarioUltra to your computer using the supplied USB cable.

2) VarioUltra is detected automatically.

2.3 Bluetooth: Pairing and Connecting, Defined

We often encounter customers who use the terms pairing and connecting, believing them to mean the same thing. They are different, and it's important to understand why.

- 1) When you first get a VarioUltra, it is neither paired or connected with your devices.
- 2) Pairing is the process of introducing VarioUltra to your device (smartphone, computer, etc.), and vice versa. This process is required so that Bluetooth devices grant permission to each other to connect.
- 3) Connecting is the process of taking two paired devices – e.g. VarioUltra and your smartphone – and connecting over Bluetooth. It is not possible to connect via Bluetooth with a device that has not been paired.

Once pairing and connected have been done, you can think of it this way:

- 1) When VarioUltra and your device are in range, they are paired and connected.
- 2) If you take your device and walk away from VarioUltra, the connection will eventually brake. In this situation, you are paired but not connected.
- 3) When your device is once again in range of VarioUltra, it should connect again automatically, so long as VarioUltra is switched on.

2.4 Is Bluetooth Off or On?

Bluetooth is off by default when switching on VarioUltra for the first time. Additionally, if you switch off VarioUltra or put it in to suspend mode, Bluetooth will be turned off.

With VarioUltra v1.33 and older versions of VarioUltra software, switching off the device results in Bluetooth being switched off. Bluetooth remains off until you switch it on again, which can be achieved in Braille Display mode by simply selecting a Bluetooth channel (S2+B4, for example), and in Braille Notetaker mode by checking the box in Settings > Bluetooth.

**** New ** with v1.4:** When Enable Bluetooth Automatically is checked, Bluetooth will always be switched on when you start VarioUltra. This is especially helpful on those occasions when your VarioUltra may have entered suspend mode because of inactivity.

This new feature can be enabled in menu item Settings > Braille Display Mode. Refer to section 10.9.2 for additional information.

2.5 Using VarioUltra as a Bluetooth Braille Display.

VarioUltra can be used via Bluetooth with a variety of different devices. Out of the box, VarioUltra works with:

- 1) Most Bluetooth equipped Windows computers.
- 2) Any Mac computer that runs on Max OSX Yosemite or newer. MacOS Sierra is the current version.
- 3) An iPhone or iPad running iOS 8.3 or newer.

If you're using older technology, or an Android device, you may need to use the Bluetooth Emulation option in VarioUltra, which disguises VarioUltra as an older VISIOBRAILLE braille display or notetaker.

There are three emulation modes for Bluetooth:

- 1) VarioUltra: this is the default mode, and works when connecting via Bluetooth to a Windows computer when using COBRA, JAWS, or NVDA, with a Mac computer running OSX Yosemite or El Capitan, and with iOS devices running iOS 8.3 or newer.
- 2) VarioConnect: use when connecting to an Android device.
- 3) Pronto: use when connecting to an iOS device with iOS 7 or iOS 8, or when connecting via Bluetooth with a Windows computer for use with the Window-Eyes screen reading software.

It is only possible to select one emulation mode for all connections. This means that if you use emulation mode "VarioUltra" to connect via Bluetooth to a computer, you would not then be able to connect via Bluetooth to another device that requires Pronto or VarioConnect emulation.

Here are the steps needed to change the VarioUltra emulation setting:

- 1) From the VarioUltra main menu, go to Settings > Braille Display Mode.
- 2) From the horizontal list of three options that now appears, use the Navystick to move left or right to select the desired emulation mode.

When the display shows the desired emulation, tap the left thumb key B9 to confirm and exit back to the Settings menu.

If you use older technology, or an Android device, pairing must always be initiated from VarioUltra.

2.5.1 Connecting with a Paired Bluetooth Device / Wake up an iOS/Android device from Standby

There is a required order of things when connecting a paired Bluetooth device. If your iPhone is on and your VarioUltra is off, switching on VarioUltra will not result in a connection. If VarioUltra is on, your iPhone is on, but Bluetooth on your iPhone is off, you will not connect successfully either.

If you want a stress-free experience, follow these quick tips:

- 1) Switch on VarioUltra and make sure Bluetooth is on. You can confirm it's on by selecting any Bluetooth channel with S2 + B4, B5, B6, or B8.
- 2) Switch on your other device. Connection should happen almost instantly.

Special note for iPhone or iPad VoiceOver users:

- 1) Make sure VarioUltra is switched on; make sure Bluetooth is switched on.
- 2) Make sure VoiceOver is switched on and your iPhone or iPad is at the locked screen.
- 3) Unlock your iOS device. At this point, VoiceOver will scan for paired Bluetooth devices in range and connect with this. This should happen in 5-8 seconds.

When a device connects via Bluetooth, VarioUltra vibrates to indicate which Bluetooth channel is connected. For example, one vibration for channel 1, two vibrations for channel 2, etc.

**** New ** with v1.4:** you can now wake up an iOS or Android device from VarioUltra. If the iOS or Android device is in standby mode and within range, from within Braille Display mode on VarioUltra, press the keys to select the assigned Bluetooth channel (S2) and wait 5-8 seconds for your device to be wake up.

Requirements:

- 1) The Bluetooth pairing was initiated by the iOS or Android device.

- 2) The pairing was performed with VarioUltra emulation in the default mode, which is VarioUltra. If you have never changed the emulation mode, you should not need to worry about this step.
- 3) The iOS or Android device is assigned to a Bluetooth channel on VarioUltra.
- 4) The iOS or Android device is in standby mode, and in range.

2.5.2 VarioUltra with Windows PC (Bluetooth).

Pairing and connecting VarioUltra via Bluetooth with a Windows computer may vary by PC manufacturer and/or the version of Windows you are using. These instructions are based on our experience using Windows 10 Home Edition with VarioUltra version 1.33. A new feature with VarioUltra version 1.33 is the ability to initiate pairing from the PC, which is exactly what we describe below.

In VarioUltra Braille Notetaker, enter command B9+D1 to switch to Computer Braille.

Make sure that Bluetooth on both the computer and VarioUltra is set to the on position. On VarioUltra, go to Settings > Bluetooth and confirm that the checkbox is on. On the PC, go to Settings > Devices > Bluetooth, and make sure that Bluetooth is on. Leave VarioUltra in the Bluetooth settings.

After a brief period, your PC should discover VarioUltra and display its name and Bluetooth identifier. For example, our VarioUltra appears as “VarioUltra 40 E25560A9000”. The words “Ready to Pair” appear directly beneath.

Select the VarioUltra from this list and a button with the word “Pair” appears. Select this button and your PC will prompt you to enter the pairing code, which is 1111. Enter this code and then press enter.

VarioUltra will prompt you to accept the pairing from the windows computer. Using Navistick, move down a line, and type 1111 using the B2 key for #1, and then press B9 to confirm.

A confirmation message on your PC will confirm that VarioUltra is now connected. You are now ready to use VarioUltra as a braille display with your screen reading software.

2.5.3 Bluetooth COM Ports for use with JAWS.

If you plan to use VarioUltra with a screen reader such as JAWS, you will need to know the outgoing COM port range during braille display selection and setup.

From the Settings > Devices > Bluetooth location on your computer, find and select the More Bluetooth Options. This will open a Bluetooth Settings dialog with three tabs: Options, COM Ports, and Hardware. Switch to the COM Ports tab, and you should find a list of eight COM ports: four incoming and four outgoing. Make a note of the outgoing COM ports as you will need to specify one of them during the initial braille display setup in JAWS.

Instructions for setting up VarioUltra as a Bluetooth braille display with JAWS follow immediately below.

2.5.4 VarioUltra with JAWS (Bluetooth).

You should first download and install the JAWS VarioUltra driver, which is available on the VISIOBRILLE web site: <https://www.VisioBraille.com>. If you don't install the driver, you will not find VarioUltra listed among supported braille displays, and it will not work with JAWS.

To use VarioUltra with JAWS using a Bluetooth connection:

- 1) Install the VarioUltra driver for JAWS on your computer, and restart JAWS.
- 2) Open the JAWS menu and go to menu Options > Braille. A dialog window appears labeled Braille Basic Settings.
- 3) Enter ALT+B to select Add Braille Display. You can also tab through the buttons to find and select it.
- 4) A new Select Components dialog window appears. Scroll down the long list of supported braille displays to find VarioUltra 20 or VarioUltra 40. Press space to check the box at whichever display option you choose, and then press enter to move to the next window.
- 5) Remember the steps covered in the previous section 2.3.2 to confirm outgoing COM port numbers? This is where you need to remember which ports are outgoing, and select any one of them from the list displayed in JAWS. Press enter to confirm your choice.
- 6) Next, select your primary device. For our example, we will pick VarioUltra 40. Then select the Finish button.
- 7) Restart JAWS if prompted to do so. VarioUltra should start working immediately when you restart JAWS.

From our experience, we find that setting Braille Mode to Structured, and checking the box to Auto Detect Braille Display Using Bluetooth are

worth doing. You can find both settings under JAWS Settings Center > Braille > General.

2.5.5 VarioUltra v1.33 with an iOS Device (Bluetooth).

For this section, we are using an iPhone 6 with iOS 9.3.2 along with a VarioUltra 40 with version 1.33 software.

Although VarioUltra can be paired with iOS devices running iOS 7 or later through iOS 8.2, doing so requires you to change the Bluetooth emulation to VarioConnect or Pronto. The iOS 8.3 and newer versions include support for VarioUltra, which means the Bluetooth emulation mode can be left in the default setting. If applicable, refer to section 2.3 for instructions on changing the emulation mode to use with iOS devices running version 7 through 8.2.

New for VarioUltra version 1.33 is the ability to initiate pairing from your iOS device. Here are the steps you need to follow:

- 1) In VarioUltra Braille Notetaker, enter command B9+D1 to switch to Computer Braille.
- 2) Next, go to Settings > Bluetooth. If Bluetooth is off, switch it on now. Do not exit from Bluetooth settings.
- 3) On your iOS device, go to VoiceOver > Braille settings. Swipe down to the “Choose a Braille Display and find VarioUltra. Once found, double tap on VarioUltra to initiate pairing. Enter the pin code 1111 when prompted to do so by your iOS device.
- 4) VarioUltra will prompt you to accept the pairing from the iOS device.

2.5.5.1 VarioUltra v1.4 with an iOS Device (Bluetooth)

Initiating pairing from an iOS device is easier than ever with VarioUltra v1.4 software for this we have made a short video on the VisioBraille website.

Here are the written instructions:

- 1) Make sure that Bluetooth is on for both VarioUltra and your iOS device.
- 2) In VarioUltra Braille Notetaker, go to Settings > Bluetooth.
- 3) On iOS device, go to VoiceOver > Braille Settings. Swipe right/down to ‘*Choose a Braille Display*’, and located VarioUltra. Double-tap to initiate pairing.
- 4) The iOS device will prompt you for a pin. Enter 1111, and swipe left/up to double tap on ‘Pair’.

5) On VarioUltra, immediately tap the left thumb key, B9 to accept the pairing.

You're all done! You may now switch to Braille Display mode on VarioUltra and start using it with your iOS device. Please refer to the Appendix section of this user manual for a list of iOS commands that can be entered from VarioUltra.

2.5.6 VarioUltra with an iOS Device (Bluetooth, *old method*).

If your VarioUltra is not yet updated to version 1.33, or if you simply prefer to initiate Bluetooth pairing from the VarioUltra, here are the old instructions. They work for any iOS device using iOS 8.3 or newer.

- 1) In VarioUltra Braille Notetaker, enter command B9+D1 to switch to Computer Braille.
- 2) On your iOS device, go to Settings > Bluetooth, and make sure that Bluetooth is on. Do not exit from Settings > Bluetooth or attempt to do anything else on your iOS device.
- 3) With VarioUltra switched on and in Braille Notetaker mode, go to Settings > Bluetooth and make sure the Bluetooth checkbox is checked. If dots 1 and 4 are present in cell 6, the box is checked. If the parentheses in cells 5 and 7 are separated by a blank cell, the box is unchecked. If it's not, tap the Navystick to the right or press the cursor routing button about the empty checkbox to switch Bluetooth on.
- 4) With Bluetooth on, navigate down a line to the 'Scan' option, and select it by tapping the left thumb key, B9, or by pressing any cursor routing button above the word 'Scan'. This will command VarioUltra to search for Bluetooth devices that are in range.
- 5) After scanning is complete, you will be presented with a horizontal list of Bluetooth devices. The devices listed will include all Bluetooth devices that are in range, plus Bluetooth devices that may have been previously paired with your VarioUltra.
- 6) Use the Navystick to move right and left through this list until you find your iOS device. When you do, navigate down a line with the Navystick and choose the 'Pair' option to initiate the Bluetooth pairing.
- 7) Turn your attention back to your iOS device. If the pairing process started, your iOS device should be prompting you to enter the 4-digit pairing code, which is 1111.
- 8) Enter the code 1111, and if you're using VoiceOver, swipe left to the Pair button on your iOS device, and select it.

9) VarioUltra will tell you that Bluetooth pairing with your iOS device was successful. Navigate down a line to select 'OK', and then switch to Braille Display mode.

10) On your iOS device, go to VoiceOver > Braille settings. If you're new to VoiceOver on an iOS device, this can be found under Settings > General > Accessibility > VoiceOver.

11) Swipe right until you get to the section, "Choose a Braille Display". Keep swiping right until you come to VarioUltra. When you get to VarioUltra in this list, you will hear VarioUltra with your serial number and the words "not connected". double-tap to establish the connection. Your iOS device should confirm that it is connected.

12) When a device connects to VarioUltra, you should feel VarioUltra vibrate to indicate which Bluetooth channel *it* has connected to. For example, if it connects on channel one, VarioUltra will vibrate one time. It will vibrate twice for channel 2, three times for channel 3, and 4 times for channel 4.

13) Still on VarioUltra, press and hold system key 2 (S2) and then tap braille key 4, 5, 6, or 8 to select the appropriate Bluetooth channel 1, 2, 3, or 4. If your iOS device is connected to channel 2, you would press and hold S2, and then tap B5. The braille display will show BT2 My iPhone, or whatever name your device has.

14) If you would like to revert to contracted braille in VarioUltra Braille Notetaker mode, enter command B9+D2 to switch to contracted braille.

VarioUltra should be working fine with your iOS device at this point. If speech is activated on your iOS device, whatever VoiceOver says will be displayed on the braille display. Please refer to the Appendix section of this user manual for a list of iOS commands that can be entered from VarioUltra.

2.5.7 Paste Contents of Clipboard to Mobile Device

When you highlight and copy a block of text – up to 10,000 characters – to the clipboard of the VarioUltra Braille Notetaker, you can now switch to Braille Display mode and paste this text into a mobile device running iOS or Android. This feature was first introduced with VarioUltra 1.33 software, and improved with the new version 1.4.

**** New ** with v1.4: How this feature works.**

This feature simulates the key strokes which would be used to perform the character input of text that is stored on the clipboard in VarioUltra. You can choose between two different methods of key simulation to

transfer your text: *Braille Key Simulation* (introduced with VarioUltra software 1.33) or the new HID Key Simulation (introduced with VarioUltra 1.4 software). Both methods can be used in parallel. It requires the correct language and device specific HID table for HID key simulation selected in menu Settings > Braille Display mode > Key simulation properties. Compared to the older Braille Key Simulation approach, the text transfer with HID key simulation is faster.

2.5.7.1 Braille Key Simulation

The quick instructions are as follows:

- 1) From inside a Braille Notetaker application such as the Word Processor, highlight and copy/cut a selection of text up to 10,000 characters.
- 2) By way of example, highlight the current sentence with command B9+B3B6. Your highlighted sentence will display dot 8 below each braille character.
- 3) If you make a mistake and wish to cancel the highlighting, enter the cancel command B9+B7B8, or just press the D4 button.
- 4) Enter command c+B8B9 to copy or x+B8B9 to cut this highlighted text to the clipboard.
- 5) Switch to Braille Display mode to use your mobile device such as an iPhone.
- 6) If not already done, activate the Bluetooth channel for the connected device by holding system key S2 and then pressing B4, B5, B6, or B8 for the channel in question.
- 7) Within a text window of any application on your mobile device, press S2+D1 on VarioUltra to initiate pasting of your copied text.
- 8) To stop the transfer, press S2+D2.

Note:

- 1) Braille tables need to match on VarioUltra and your mobile device. If you copy contracted text from your VarioUltra, your iPhone needs to be set to contracted braille as well. If not, the braille translation will be affected.
- 2) The braille language needs to be the same also. If you copy Spanish text from VarioUltra and paste to an iPhone that is *programmed* for English, errors will occur such as accented characters not translating correctly.
- 3) The transfer can take some time. In VISIOBRAILLE tests, sending 5,000 characters took about 7 minutes.

- 4) While the S2+D2 command will stop the transfer, there is a point when all text has already been sent. All you can do then is to wait until the end.
- 5) If you copy and paste more than 10,000 characters, only the first 10,000 characters will be sent to your mobile device.

2.5.7.2 HID Key Simulation

**** New ** with v1.4:**

- 1) From inside a Braille Notetaker application such as the Word Processor, highlight and copy/cut a selection of text up to 10,000 characters.
- 2) By way of example, highlight the current sentence with command B9+B3B6. Your highlighted sentence will display dot 8 below each braille character.
- 3) If you make a mistake and wish to cancel the highlighting, enter the cancel command B9+B7B8, or just press the D4 button.
- 4) Enter command c+B8B9 to copy or x+B8B9 to cut this highlighted text to the clipboard.
- 5) Switch to Braille Display mode to use your mobile device such as an iPhone
- 6) If not already done, activate the Bluetooth channel for the connected device by holding system key S2 and then pressing B4, B5, B6, or B8 for the channel in question.
- 7) Within a text window of any application on your mobile device, press S2+D4 on VarioUltra to initiate pasting of your copied text.
- 8) To stop the transfer, press S2+D5.

Note:

- 1) Bluetooth pairing must be initialized from the other device (iOS / Android). If you initiated pairing in the past from VarioUltra, you will need to remove the pairing information on VarioUltra and pair again, only this time initiate the pairing from your other device.
- 2) During Bluetooth pairing and when in use, VarioUltra must be in VarioUltra native mode (emulation VarioUltra). This is a default setting so unless you have changed it in the past, you shouldn't need to worry about this step.
- 3) With Android: in addition to BrailleBack you must install BRLTTY for Android 5.2 or higher.
- 4) In menu Settings > Braille Display Mode, option key simulation properties you must select a HID table which matches with your device and language, i.e. Apple_US_.U2H for iPhone.

- 5) Braille tables need to match on VarioUltra and your mobile device. If you copy contracted text from your VarioUltra, your iPhone needs to be set to contracted braille as well. If not, the braille translation will be affected.
- 6) The braille language needs to be the same also. If you copy Spanish text from VarioUltra and paste to an iPhone that is *programmed* for English, errors will occur such as accented characters not translating correctly.
- 7) The transfer can take some time. Sending 5,000 characters can take about a few minutes, also depending on the type of mobile device.
- 8) While the S2+D2 command will stop the transfer, there is a point when all text has already been sent. All you can do then is to wait until the end.
- 9) If you copy and paste more than 10,000 characters, only the first 10,000 characters will be sent to your mobile device.

2.5.8 VarioUltra with Mac OS & VoiceOver (Bluetooth).

For this section, we are using a MacBook Pro with macOS Sierra and a VarioUltra 40 with version 1.33 software.

New for VarioUltra version 1.33 is the ability to initiate pairing from your macOS device. Here are the steps you need to follow:

- 1) In VarioUltra Braille Notetaker, enter command B9+D1 to switch to Computer Braille.
- 2) Next go to Settings > Bluetooth. If Bluetooth is off, switch it on now. Do not exit from Bluetooth settings.
- 3) On your Mac, go to VoiceOver > Open VoiceOver Utility > Braille > Displays, and select the + symbol to add a new braille display. Your Mac will open a new window and begin searching for braille displays in range.
- 4) Once found, select VarioUltra. An Option button will appear beside the name of VarioUltra. Select this button to enter the pairing code 1111.
- 5) VarioUltra will then prompt you for the same code. Type 1111 using the B2 key for #1. Press B2 four times to enter the code, and tap the left thumb key B9 to accept.
- 6) To revert to contracted braille, enter command B9+D2.

You're all done! You may now switch to Braille Display mode on VarioUltra and start using it with your Mac.

2.5.9 VarioUltra with Mac OS & VoiceOver (Bluetooth, old method).

If your VarioUltra is not yet updated to version 1.33, or if you simply prefer to initiate Bluetooth pairing from the VarioUltra, here are the old instructions. They work for any Mac running OSX Yosemite or newer.

1) On your Mac computer, go to System Preferences > Bluetooth. Enable Bluetooth if it is turned off. Do not exit from Bluetooth Preferences.

2) With VarioUltra switched on and in Braille Notetaker mode, go to Settings > Bluetooth and make sure the Bluetooth checkbox is checked. If it's not, tap the Navistick to the right or press the cursor routing button about the empty checkbox to switch Bluetooth on.

3) With Bluetooth on, navigate down a line to the 'Scan' option, and select it by tapping the left thumb key, B9, or by pressing any cursor routing button above the word 'Scan'. This will command VarioUltra to search for Bluetooth devices that are in range.

4) After scanning is complete, you will be presented with a horizontal list of Bluetooth devices. The devices listed will include all Bluetooth devices that are in range, plus Bluetooth devices that may have been previously paired with your VarioUltra.

5) Use the Navistick to move right and left through this list until you find your Mac computer. When you do, navigate down a line with the Navistick and choose the 'Pair' option to initiate the Bluetooth pairing.

6) Turn your attention back to your Mac computer. If the pairing process started, your Mac computer should be prompting you to enter the 4-digit pairing code, which is 1111. Enter the code, and then navigate to the Pair button and select it.

7) VarioUltra will tell you that Bluetooth pairing with your Mac was successful. Navigate down a line to select 'OK', and then switch to Braille Display mode.

8) On the Mac, go to System Preferences > Accessibility and select the "Open VoiceOver Utility..." button.

9) Select "Braille" inside the VoiceOver Utility dialog by moving your cursor down until you hear VoiceOver announce "Braille" or by hitting hotkey "B".

10) Under the braille section, switch from the "Layout" tab to the "Displays" tab. To do this, tap the tab key until you hear VoiceOver say "Layout", at which point cursor to the right to hear "Displays", and press the space bar to select.

11) Tap the tab key again to enter the braille display table. Tap the tab key again to hear "Add", and select by hitting the space bar.

12) At this point, your Mac will search for paired devices. When VoiceOver announces that a new line has been added, scroll down

with CTRL-OPTION-SHIFT and down arrow on the Mac. When you hear “VISIOBRAILLE VarioUltra”, select the “Select” button to connect.

13) On VarioUltra, Braille Display Mode, press and hold system key 2 (S2) and then tap braille key 4, 5, 6, or 8 to select the appropriate Bluetooth channel 1, 2, 3, or 4. If your Mac device is connected to channel 2, you would press and hold S2, and then tap B5. The braille display will show BT2 My MacBook, or whatever name your computer has.

Your VarioUltra and Mac computer should now be working.

2.5.10 VarioUltra with an Android Device (Bluetooth).

The following instructions assume you have already enabled the Talkback screen reader, and that you have downloaded, installed, and enabled BrailleBack. If not, please refer to the Android Accessibility Help Center at <https://support.google.com/accessibility/android/> for instructions. It is very important that BrailleBack be switched on before starting the pairing process.

Make sure that the VarioUltra emulation is set to VarioConnect.

- 1) On Android, switch on BrailleBack.
- 2) On Android, go to Settings > Connections > Bluetooth, and make sure that the check box under “My Device” is checked so that the device is visible to VarioUltra and other devices. This will remain active for 2 minutes.
- 3) On VarioUltra, go to Settings > Bluetooth. Making sure that the Bluetooth checkbox is checked, select the option to scan for devices in range.
- 4) When VarioUltra displays the results of devices found, locate your phone name and Navistick down one line to select the Pair option.
- 5) On Android, enter the pair code 1111. When the pairing is successful, BrailleBack should chirp, indicating success.
- 6) Switch VarioUltra to Braille Display mode to connect with your Android device.

If you prefer to connect VarioUltra natively to an Android device, you can achieve this by following these additional instructions:

- 1) On Android, go to the BrailleBack screen and turn off BrailleBack.
- 2) On VarioUltra, change the emulation from VarioConnect back to VarioUltra.
- 3) On Android, go the BrailleBack screen and turn on BrailleBack.

4) BrailleBack should reconnect to VarioUltra. Best of all, if you're using a VarioUltra 20, your display will now be formatted for 20 cells instead of 24. Thanks to customer Scott McCormack for his assistance testing this functionality.

**** New ** with v1.4:** A further option is to install additionally BRLTTY for Android 5.2 or higher. Then you can pair VarioUltra also with VarioUltra emulation. And you can initialize the Bluetooth pairing from the Android device to use HID key simulation, providing you with the option to wake up your Android device from standby mode.

Finally, if you wish to use the braille keyboard of VarioUltra for braille input on the Android device, please enter a character via braille keys and follow the instructions on the Android.

2.6 Switching Between Connected Bluetooth Devices

Switching between connected devices on VarioUltra is achieved in Braille Display Mode. Press and hold S2, tap and release the appropriate braille key, and then release S2.

To switch between USB and the four channels of Bluetooth (BT), do the following:

- _ USB: S2 + B1
- _ BT1: S2 + B4
- _ BT2: S2 + B5
- _ BT3: S2 + B6
- _ BT4: S2 + B8

When switching to the USB channel, the braille display will show USB. When switching to one of the Bluetooth channels, the braille display will show something like, "BT1 My iPhone", or whatever name your device is recognized as. If you see brackets either side of the device name, it means the device is paired, but not in range.

If Bluetooth was off before attempting to connect with a previously paired device, selecting the device will force Bluetooth to switch on automatically. When this happens a message on the braille display will ask you to wait while Bluetooth is switched on, and then it will display the Bluetooth channel and device name information. It only takes a second or two.

2.7 Mapping Bluetooth Channels. Let's say that your iPhone is connected on Bluetooth channel 3, but you want it to be on Bluetooth channel 1. It's easy to change it. For example: a new device is

connected to Bluetooth channel 3 (BT3) and you want to assign it to Bluetooth channel 1 (BT1). To change it, follow these short instructions: Press S2 + B6. VarioUltra shows the channel and the device name. While the hint message is shown, press B4 for about a second and release. VarioUltra assigns the device to Bluetooth channel 1 (BT1). Note: If BT1 was holding another device, that device is automatically assigned to BT3. In other words, the channels are swapped.

2.8 Using VarioUltra with Linux

Our thanks to VarioUltra user Scott McCormack for his contributions to this section.

The assumption is you are somewhat familiar with using Linux, and that you're comfortable working from the command line.

REQUIREMENTS:

Braille support under Linux is provided by an application called BRLTTY. Most Linux distributions come with a version of BRLTTY. However, since VarioUltra support was only added in version 5.3 and most distributions come with older versions, it will be necessary to install an updated version of BRLTTY to get VarioUltra to work. For the purposes of this instruction, we are using Ubuntu 14.04, which comes with BRLTTY 5.0. Even the newest Ubuntu 15.10 only comes with 5.2. Most people are probably running older versions of BRLTTY.

Confirming your BRLTTY version. From the command line type:

```
brlty -V
```

Note the capital V. This will print out the version number of BRLTTY along with some other information, and then return you to the command line. If you get 'brlty: command not found' you don't have BRLTTY installed at all. This means you can proceed to the download and install steps.

Remove Old Versions. If your distribution came with BRLTTY installed and it isn't version 5.3 or later, you should remove it before installing a new copy. To do this, you will need to use the package management tools included with your distribution to remove the existing copy of BRLTTY. If you are not using a debian based distribution such as Ubuntu, your instructions will vary. Debian/Ubuntu users type:

```
sudo apt-get remove brlty
```

You will be prompted for your password and prompted to confirm the removal of BRLTTY and any associated packages. Press enter or type y to proceed and once everything is removed you should be returned to the command prompt. If you try and run BRLTTY now you should get a no such file or directory error, or command not found

Downloading and unpacking BRLTTY source. Now we need to download BRLTTY to our Linux machine. You can access the download page at <http://mielke.cc/brlTTY/download.html>

(correct as of this writing on April 27, 2016) and you want to download the source file in .tar.gz format. You can download directly from the command line if you have the wget command installed (most distributions have it installed) by entering:

wget <http://mielke.cc/brlTTY/archive/brlTTY-5.3.1.tar.gz>

This will download the 5.3.1 source files in .tar.gz format which is the current version as of this writing. Once you have the file downloaded you should have a file called brlTTY-5.3.1.tar.gz sitting in your directory

To unpack the file, enter:

```
tar -xzf brlTTY-5.3.1.tar.gz
```

Once the file is unpacked you'll be returned to the command line and will now have a new directory called brlTTY-5.3.1 change into this directory.

Compile and Install. This section comes directly from the BRLTTY manual: <http://mielke.cc/brlTTY/doc/Manual-BRLTTY/English/BRLTTY-3.html#ss3.2>

Change into the brlTTY-5.3.1 directory created earlier. Enter the following commands and wait for each to complete successfully before proceeding to the next.

```
sudo ./configure
```

```
sudo make
```

```
sudo make install
```

Each of the preceding commands will generate a lot of output. Examine the last 10 or so lines of output for errors which are usually denoted with multiple * asterisk characters.

Test run. Connect your VarioUltra via the USB cable to your Linux box; a bunch as messages may appear on your console as the VarioUltra is set up. Once the messages stop appearing you may hit enter to redisplay the command prompt.

Now that we have BRLTTY installed, let's test it. Enter the following to start BRLTTY:

```
sudo brlTTY
```

BRLTTY should show a version number, make a 'bloop' sound, and your VarioUltra should spring to life. If it does congratulations you now have braille inside a Linux environment.

Killing BRLTTY: You can stop brlTTY at any time by typing:

```
sudo killall brlTTY
```

Run BRLTTY as a service. Running BRLTTY as a service is useful as it will start automatically on system boot and will start up when a compatible display is connected allowing us to set it and forget it.

The procedure for installing BRLTTY as a service varies depending on the distribution in use. In the build directory there is a directory called 'Autostart' this directory contains startup scripts for various service managers BRLTTY supports.

For Ubuntu 14.04 we use the Upstart system so we want to copy the brltty.conf file from Autostart/Upstart to /etc/init by changing to the Autostart/Upstart directory and typing:

```
sudo cp brltty.conf /etc/init
```

now we should be able to start brltty by typing

```
sudo service brltty start
```

and stop brltty by typing

```
sudo service brltty stop
```

GUI. Want to use your VarioUltra while in the GUI? You can! Just run the orca screen reader while BRLTTY is running. Without orca running your VarioUltra will display 'screen not in text mode' while you are in the GUI.

Uninstalling BRLTTY:

If for any reason you need to remove your freshly installed BRLTTY, change to the BRLTTY source directory and issue the following command:

```
sudo make uninstall
```

Using the VarioUltra braille keyboard in the GUI. It is necessary to have the xbrlapi application installed. As of this writing, we haven't quite figured out how to compile this from the source. If you have installed the Ubuntu package, it works fine even with the BRLTTY 5.3.1 we have use to make the VarioUltra work. To install it, just issue the following command at the command line: `sudo apt-get install xbrlapi`

Note:

_ The key maps are not the same as in the text mode, e.g. the left thumb key (B9) is mapped to backspace along with B8. Additionally, all chord commands must be entered with the right thumb key (B0)

_ The braille keyboard will not work on the GUI login screen so a standard keyboard must be used to login.

2.9 Suppressing Connection Messages.

When connecting to or switching between devices with S2 plus the appropriate braille key, VarioUltra displays a message that contains channel information. The message will say things such as "USB", "BT1 VISIOBRAILLE iPhone", etc.

It is possible to suppress these messages if preferred. From the Braille Notetaker mode main menu, go to Settings > Braille Display Mode > Show a message if a device was connected, and uncheck the box. Press B9 to confirm.

Chapter 3: Braille Notetaker Mode.

By now, you already know that VarioUltra is a very smart braille display. Another benefit of VarioUltra ownership is the Braille Notetaker functionality, which includes a suite of applications including:

1) Word Processor: use this application to create new files and save them as Rich Text Format (RTF) Text (TXT), or one of two braille formats (BRL and BRF). Also, use this application to open Word DOC/DOCX files and PowerPoint PPT/PPTX files.

a) **** New ** with v1.4: you can now open PPS documents (PowerPoint slide show format) inside the word processor app.**

2) PDF Viewer: use this application to open and read accessible PDF documents, even ones that are password protected.

3) Excel Viewer: use this application to open and read Excel XLS/XLSX documents. Read by row or column, and open and read any cell comments. You can also switch between worksheets of a workbook.

4) Calculator: whether you need help with a basic calculation or conversion, or need to enter complex scientific equations, this application is for you.

5) Timers: this application includes a variety of timers, a stop watch, and alarms.

6) File Manager: use this application to access the files and folders stored on VarioUltra's 32GB of internal storage. Also use this application to access files on a connected USB stick.

7) Settings: if there's a changeable setting for VarioUltra, you'll find it here. Whether you're changing braille tables or pairing via Bluetooth with a new device, it's here.

8) Help: this is where you will find electronic copies of this user guide and the quick reference guide. You will also find the product serial number in the About section. Remember also that context sensitive help is available throughout VarioUltra.

These applications are presented in a vertical list in the Main Menu.

1) If you enter an application and want to return to the Main Menu, make a long press of S3.

- 2) From within an application, tap and release S3 to enter the Command Menu. This is where you'll find menus such as File and Edit. A short tap of S3 exits the Command Menu and returns to the application.
- 3) To move around the menus, tap the outer edges of Navistick to move in the desired direction.
- 4) As you scroll through the Main Menu, you will find other information in addition to the application name. This includes "MI" (Menu Item) at the beginning of the line, a single letter hotkey, the app name, and the shortcut command for accessing this application from anywhere.

You can select the app or menu item by:

- 1) Tapping the left thumb key, B9.
- 2) Pressing a cursor routing button above the application name.
- 3) Typing the single letter hotkey.
- 4) Pressing in on the Navistick.

If you're new to braille notetakers and new to VarioUltra, the stress-free way to start is to work with these menus. There are commands for most things in VarioUltra, but memorizing them should be a gradual thing, not an overnight goal.

3.1 Command Menus.

Some of the Braille Notetaker applications include Command Menus, which is what we use to refer to menus such as File, or Edit. To access these menus inside an application, tap system key S3. To exit back to the application, tap S3 again.

Some applications do not have command menus. In the case of the PDF Viewer and the Excel Viewer, a file must be open to access command menus.

Command Menus Summary:

1) Word Processor

- a) File menu
- b) Edit menu
- c) Insert menu
- d) Navigate menu
- e) Tools menu

2) PDF Viewer – must open a file to access command menus

- a) File
- b) Edit
- c) Go To
- d) Find

e) Tools

3) **Excel Viewer** – must open a file to access command menus

a) File

b) Navigation

c) Find

d) Tools

4) Calculator

a) Math Functions

b) User Constants

c) Conversion

d) Edit

e) View

f) Tools

5) Timers

a) No command menus

6) File Manager

a) File

b) Edit

c) View

d) Tools

7) Settings

a) No command menus

8) Help

a) No command menus

Refer to application chapters for more detail about command menus.

3.2 Braille Tables / Supported Braille.

This section provides information about supported braille tables in VarioUltra Braille Notetaker, and instructions for changing or selecting them.

3.3 Unified English Braille (UEB).

**** New ** with v1.4:**

With the introduction of version 1.4, VarioUltra now includes support for Unified English Braille (UEB). Note that this first implementation of UEB contains some converting errors when typing UEB inside an RTF document. We continue to work on fixing these known errors.

The system default remains US English Contracted Braille, though you can set UEB as your preferred default if you wish. The user profile settings feature in VarioUltra is used to facilitate this:

1) Pressing system key 1 (S1) and dot 1 (B1) loads the default Profile #1, which provides US English Contracted Braille and Computer Braille tables.

2) Pressing system key 1 (S1) and dot 2 (B2) loads the Profile #2, which provides Unified English Braille (UEB) and Computer Braille tables.

Note:

These profiles dictate which braille is used in Braille Notetaker mode.

The Master Switch feature – explained in section 3.4 – allows you to toggle between US English Contracted (Grade 2) and Computer Braille (Default, Profile #1), or

UEB and Computer Braille (Profile #2).

1) To select Computer Braille, hold down B9 and then press display button 1 (D1).

2) If the default Profile #1 is loaded, hold down B9 and press display button 2 (D2) to select US English Contracted Braille.

3) If Profile #2 is loaded, hold down B9 and press display button 2 (D2) to select UEB.

Remember: braille tables do not apply when working with BRF and BRL braille formats.

3.4 Master Switch: Changing Settings.

**** New ** with v1.4:**

The Master Switch lets you switch quickly between Computer Braille, and either US English Contracted Braille (Grade 2), or UEB. This depends on which profile you have selected. If you have never knowingly changed the profile, then the default US English Contracted Braille is what you have.

1) To select Computer Braille, hold down B9 and then press display button 1 (D1). When selecting this mode, a message will tell you Master Switch is on.

2) If the default Profile #1 is loaded, hold down B9 and press display button 2 (D2) to select US English Contracted Braille. When selecting this mode, a message will tell you Master Switch is off.

3) If Profile #2 is loaded, hold down B9 and press display button 2 (D2) to select UEB. When selecting this mode, a message will tell you Master Switch is off.

You can change either or both the input (typing) and output (reading) braille code. Here are the Instructions:

1) In VarioUltra, go to Settings > Braille > Default Braille Codes.

- 2) In the dialog, uncheck the “Master Switch” checkbox. This will make the controls for selecting and changing braille codes, visible. To clarify, if the checkbox remains checked, all you will see below “Master Switch” are the options OK and Cancel.
- 3) With the checkbox unchecked for “Master Switch”, move down the list to “Language” and confirm that English is selected.
- 4) Move down the list to “Reading Default” and select USA English Contracted Braille, or the newly added Unified English Braille (UEB).
- 5) Move down the list to “Writing Default” and select USA English Contracted Braille, or the newly added Unified English Braille (UEB).
- 6) Confirm by pressing B9. Note that all menu items should now be presented in USA English Contracted Braille or UEB, depending on your choices selected in sections 4 and 5.
- 7) Open Word processor application (hold down system key S1, or access from the main menu). Once inside the word processor, open command menu by tapping system key S3, and go to command menu item Tools > Grade 2 > Settings.
- 8) In the dialog, uncheck the “Master Switch” checkbox to make the controls for selecting braille codes visible. To clarify, if the checkbox remains checked, all you will see below “Master Switch” is OK and Cancel.
- 9) Move down the list to “Converter” and select USA English Contracted Braille, or the newly added Unified English Braille (UEB). If you prefer an alternative setting, select it instead.
- 10) Move down and check the check box “Type in Contracted Braille”.
- 11) Move down and check the check box “Read in Contracted Braille”.
- 12) Confirm by pressing B9.

Now the braille output for the presentation of menu items, system messages, texts in PDF Viewer, Excel Viewer and doc, docx, rtf, txt, ppt, pptx and pps files in word processor are set to either USA English Contracted Braille (Grade 2) or the newly added UEB; this depends on your choices made above. Note that text input in RTF or TXT files must now be made in USA English Contracted Braille or UEB, depending on your selections.

3.5 Default Braille Codes

The Default Braille Codes section can be found under Settings > Braille. This is where you will find various options for changing the way you read and type braille with VarioUltra. Menu list items include:

- Master Switch Computer Braille – this is new with version 1.3 software and needs to be unchecked to see other menu options.

- Language
- Reading braille code
- Writing braille code
- Text Box / Menus / Messages braille code
- Technical braille message on/off
- Confirm button OK
- Confirm button Cancel

Here are additional details for each of these menu list items:

1) Master Switch Computer Braille. By default, the checkbox is checked. When checked, the only options displayed are OK and Cancel. To view other menu items, uncheck the box by pressing the cursor routing button at cell 6, or tap the right edge of Navistick. The purpose of the Master Switch is to allow quick changing between Computer Braille and another of the available Braille codes, such as English Contracted (grade 2). Refer to the next section 3.1.2 for details on changing the Master Switch settings.

2) The next item to be displayed is the language of the device. By default, all VarioUltra units in the USA are set to English. Unless you speak other languages, this setting should never be changed.

3) The next option governs the braille code used for Reading. The choice of braille code here will be used inside menus, dialog boxes, messages, and in PDF and Excel documents. When the language is set to English, the codes displayed here include:

- a) USA English Uncontracted Braille, 1 of 5
- b) USA English Contracted Braille, 2 of 5
- c) UEB Grade 2, 3 of 5
- d) UEB Grade 1, 4 of 5
- e) Computer Braille, 5 of 5

4) When you see the preferred braille code, tap the left thumb key B9 to confirm and exit back to the Braille sub-menu, or move the Navistick down to the next option.

5) The next option is for the braille code to use for Writing. This code will be expected whenever you type inside dialog boxes and editable documents such as RTF, TXT, and BRF. When the language is set to English, the default code is USA Computer Braille, 1 of 3. Use the Navistick to move right for USA English Contracted Braille, 2 of 3, or USA English Uncontracted, 3 of 3.

6) When you see the preferred braille code, tap the left thumb key B9 to confirm and exit back to the Braille sub-menu, or move the Navistick down to the next option.

7) Text Box / Menus / Messages braille code is a checkbox option. When checked, this option ensures that text boxes, menu items, and messages are displayed using the same braille code as the Reading braille code specified above. It is checked on by default. If you uncheck this option, VarioUltra will display all text boxes, menu items, and messages in Computer braille.

8) Computer braille message on/off is a checkbox. When checked, VarioUltra will display a hint message whenever technical braille is displayed. Uncheck the box if you do not want to see such hint messages.

9) Confirm button OK. Tapping the left thumb key B9 or pressing a cursor routing button above the word OK will accept all changes and return to the Braille sub-menu.

10) Confirm button CANCEL. Tapping the left thumb key B9 or pressing a cursor routing button above the word CANCEL will cancel all changes and return to the Braille sub-menu.

3.6 Braille in BRF and RTF Documents

When you select the Braille Ready Format (BRF) for your document, VarioUltra enters a “What You Braille is What You Get” mode.

Essentially, no conversion is made in this mode so you can type however you prefer, whether that be grade 1, grade 2, computer braille, some combination of them all, or in a shorthand braille code you invented for yourself.

3.7 Braille Inside Menus, Messages, and Dialogs

By default, the text that appears inside text boxes, messages, dialog boxes and menus is displayed using the same braille code that you use for reading. If you would prefer that this information be displayed in computer braille instead, you will need to uncheck the box for “Display text of text boxes”. Alternatively, just use the Master Switch Computer Braille to activate computer braille input with B9+D1.

Chapter 4: Word Processor Application.

In addition to previously described methods for opening the Word Processor from the Main Menu, you can also enter the shortcut command w+B9B7B8. Since it's the most used application, the Word Processor can also be opened from anywhere in the Braille Notetaker by a long press of S1.

The Word Processor application can be used with:

_ Word DOC and DOCX files. These can be read and edited. If edited, files need to be saved as RTF.

_ PowerPoint PPT and PPTX files. These files are *read* only and cannot be edited.

_ **** New ** with v1.4:** PowerPoint Show PPC and PPSX files.

_ Rich Text Format (RTF) files. This type of document can be read, edited, and created.

_ Text (TXT) files. This type of document can be read, edited, and created.

_ Read or create BRF braille documents.

_ Read BRL documents.

4.1 Typing a Document.

The factory default file format is BRF, which is a braille file. With BRF files, you can freely type whatever you want, regardless of accuracy and regardless of braille code. It can even be Unified English Braille (UEB). If there are no other opened documents and/or this is your first time using the Word Processor application, the application opens a new blank document, with the cursor at the first braille cell.

Things to remember:

_ Align the palms of your hands in the direction of the front corners of VarioUltra. When you do this, your fingers should align perfectly with VarioUltra's ergonomic keyboard.

_ For space, use the right thumb key, B0.

_ For backspace, press B7.

_ For return, press B8.

_ To move the cursor, use the Navistick, or press a cursor routing button above the character where you wish to place the cursor.

_ To move backwards or forwards through your document, press D2 to advance backwards, and press D5 to advance forwards.

_ New text is always inserted at the current cursor position. To ensure that your cursor is at the end of text, enter command B9+B4B5B6.

_ So long as the document is not read-only, it's possible to set the input mode to "Append". This means text is always inserted at the end of the document, regardless of the cursor location. Find this setting under Tools > Input Mode > Set Append Mode.

4.2 Navigating within a Document.

As previously mentioned, pressing D2 and D5 within a document will move the display backwards and forwards through a document. There are other options for moving around a document. Note that in most cases, the command to move backwards is the mirror image of moving forwards. Example: moving to the beginning of your file is achieved with command B9 + B1B2B3. The mirror image of this command is B9+B4B5B6, which is the command to move to the end of your file.

Here then are some other commonly used navigation commands. As a reminder, B9 is the left thumb key; B0 is the right thumb key.

- _ Move to beginning of file: B9+B1B2B3
- _ Move to end of file: B9+B4B5B6
- _ Move the display left: D2
- _ Move the display right: D5
- _ Next Character: command B9+B4 or Navistick right
- _ Previous Character: command B9+B1 or Navistick left
- _ Next Word: command B9+B5
- _ Previous Word: command B9+B2
- _ Next Sentence: command B9+B6
- _ Previous Sentence: command B9+B3
- _ Next Line: command B9+B4B5 or display key D3 or Navistick down
- _ Previous Line: command B9+B1B2 or display key D1 or Navistick up
- _ Beginning of Line: command B9+B1B2B3B7
- _ End of Line: command B9+B4B5B6B8
- _ Next Paragraph: command B9+B4B6
- _ Previous Paragraph: command B9+B1B3
- _ Next Page: command B9B0+B5B6
- _ Previous Page: command B9B0+B2B3
- _ Jump to Highlighted Text: k+B9B8

When the cursor is positioned within a word, sentence, or paragraph, a previous command will always move the cursor to the first character of the current unit of text. A subsequent previous command will move back by the chosen unit of text.

4.3 Remembering Last Reading Position.

New with VarioUltra version 1.33 is the remembering of your last reading position inside documents in the Word Processor. It's an automatic setting that applies when you close the document prior to shutting down VarioUltra. Otherwise the document will reopen with the cursor at the beginning of the document.

4.4 Display All File Types.

By default, the Word Processor app only displays text-based documents such as RTF and DOC/DOCX files when you choose to open an existing document. To change what type of files you see, follow these additional instructions.

- 1) From File > Open, press D4+D6.
- 2) Once inside the list of files, press display buttons D4+D6; the current path will be displayed.

3) Move down one line with Navistick. The display will show “Text Files (*.rtf, *.txt, *.doc, *.docx, *.ppt, *.pptx) 1 of 3”.

4) Scroll right with the Navistick to select either “Braille Files (*.brf, *.brl, *.bru) 2 of 3” or “All Files (*.*) 3 of 3”. You must open a file after making these changes for the setting to remain.

5) Any change you make to the type of files to be displayed will now be remembered by VarioUltra. You will need to repeat these instructions if you change your mind in future.

4.5 Editing PowerPoint Documents.

PowerPoint (PPT and PPTX) are read-only files that cannot be edited. If you wish to edit a PowerPoint document with VarioUltra, open and save as an RTF document. This is a powerful tool for students and anyone else who attend PowerPoint presentations.

4.6 Command Menus.

Tap S3 to enter or exit from the command menus. The Word Processor application has 5 menus: File, Edit, Insert, Navigate, and Tools. Read on to learn about the content of each of these menus.

4.6.1 File Menu

The File Menu for Word Processor includes the following options:

- _ New
- _ Open
- _ Close
- _ Save
- _ Save As
- _ Protect Text
- _ Previous File
- _ List Open Files

Additional information and instruction now follows for the File Menu options.

New. To avoid the menu in future, enter shortcut command is n+B9B8.

1) New. Once selected, VarioUltra will prompt you for a file name. The name “document” will be shown. Position the cursor after this name and press B7 to delete it, or just write over it. Remember that you must use uncontracted braille when creating file names.

a) Navistick down one line to change the path, or folder, where the document is to be saved. The default is Flashdisk.

b) The next line down contains a horizontal list of file types. Use Navistick to move left or right through the choices, which include: RTF, TXT, and BRF.

c) Navistick down to find OK or CANCEL. Select OK to accept the document name and settings and return to the new document. Press cancel to abort.

2) Open. To avoid the menu in future, enter shortcut command is o+B9B8.

a) Select this option, and you will find yourself in the Flashdisk internal storage. Use Navistick to move in and out of folders, or to move up and down through lists of files.

b) Find the file you want, and press in on Navistick to open it. You can also tap B9.

c) To cancel, enter command B9B0+B7B8. This will return you to the Word Processor.

3) Close. To avoid the menu in future, enter shortcut command is u+B9B8.

a) To close the current document, choose File > Close from the menu.

b) If your document was modified, you will be asked if you want to save it first. Scroll down with Navistick to answer YES or NO.

c) Your current file will be closed; the current cursor position is automatically saved as reading position when you reopen the document. You are taken back to the word processor. Note that if or when you choose to close the only open file, you will be taken back to a blank document in the word processor after closing the file.

4) Save. To avoid the menu in future, enter shortcut command is s+B9B8.

a) To save the current document, choose File > Save from the menu.

b) When Save is selected, VarioUltra saves the document in the currently selected folder. A message says "File Saved". It is a good idea to save your documents regularly to avoid rare, unexpected data loss.

c) To change the file name or path, choose the Save As option instead.

5) Save As. To avoid the menu in future, enter shortcut command is a+B9B8.

a) To save as, choose File > Save As from the menu.

b) An edit will appear with the current file name. Delete the old name and type the new name here. Remember: you must use uncontracted braille here to avoid use of any forbidden characters.

c) To change the path or save location, scroll down with the Navistick. You will be taken to a field which presents the path. If the path is ok, scroll down with Navistick.

d) To change the path, select the Browse button. This will open a new dialog where you can select the desired folder.

e) The next line down lets you change the file type. Select from the list of file types, moving left or right with the Navistick.

f) Confirm with OK, or press B9B0+B7B8 to cancel.

6) Protect/Unprotect Text. To avoid the menu in future, enter shortcut command z+B9B8.

a) This menu option is a toggle.

b) If the menu option says Protect, it means your document is editable.

c) If the menu option says Unprotect, it means your document is Read Only.

7) Previous File. To avoid the menu in future, enter shortcut command -+B9B8.

a) To move to the previous opened document, go to File >Previous File.

b) When selected, VarioUltra switches to the last opened document you were working with.

8) List Open Files. To avoid the menu in future, enter shortcut command l+B9B8.

a) To list all currently open documents, go to Fil > List Open Files.

b) When selected, a horizontal list of all documents is shown.

c) Use the Navistick to move left or right among the list of open documents.

d) When you get to the file you wish to use, tap B9. You will then be returned to this open document in the Word Processor.

4.6.2 Edit Menu.

The Edit Menu for Word Processor includes the following options:

_ Cut

_ Copy

_ Paste

_ Delete

_ Mark Block Start/End

_ Highlight All

_ Find

_ Find Next

_ Replace

_ Set Bookmark

_ Jump to Bookmark

Additional information and instruction now follows for the Edit Menu options.

1) Cut. To avoid the menu in future, enter shortcut command x+B9B8.

- a) Highlight the text you wish to cut.
 - b) Go to Edit > Cut to remove the highlighted text and place it on the clipboard.
- 2) Copy. To avoid the menu in future, enter shortcut command c+B9B8.
- a) Highlight the text you wish to copy.
 - b) Go to Edit > Copy to copy the highlighted text to the clipboard.
- 3) Paste. To avoid the menu in future, enter shortcut command v+B9B8.
- a) Position the cursor at the desired location within a document, or within a text box in VarioUltra.
 - b) Go to Edit > Paste to copy contents of the clipboard at the cursor position.
- 4) Delete. To avoid the menu in future, enter shortcut command B9+B7.
- a) Highlight the text you wish to delete.
 - b) Go to Edit > Delete to delete the highlighted text.
- 5) Mark Block Start/End. To avoid the menu in future, enter shortcut command B9+B1B4.
- a) Before you can copy or cut or delete text, you need to highlight it. Use this feature to mark the beginning and end positions for highlighting.
 - b) Position the cursor at the beginning of text that is to be highlighted. Go to Edit > Mark Block Start/End to mark the beginning position.
 - c) Position the cursor at the end of text that is to be highlighted. Go to Edit > Mark Block Start/End to mark the end position.
 - d) You're now ready to cut, copy, or delete the highlighted text.
- 6) Highlight All. To avoid the menu in future, enter shortcut command %+B9B8.
- a) Go to Edit > Highlight All to highlight all text in the current open document.
 - b) To cancel the selection, enter command B9B0+B7B8.
 - c) Otherwise, you're now ready to cut, copy, or delete the highlighted text.
- 7) Find. To avoid the menu in future, enter shortcut command ?+B9B8.
- a) Go to Edit > Find to open search text window.
 - b) Enter the word or string of characters that you wish to find, and tap B9.
 - c) You will be returned to the document at the first instance of the word or text string. The cursor will be position on the first letter of the found text.
 - d) If you repeat the exercise, VarioUltra will take you to the next occurrence of the search string, if one exists.

8) Find Next. To avoid the menu in future, enter shortcut command 3+B9B8.

a) Go to Edit > Find Next to search the previous search entry.

9) Replace. To avoid the menu in future, enter shortcut command h+B9B8.

a) Go to Edit > Replace to search for a chosen word or string of characters.

b) Scroll down a line with Navistick to check the box, or not, to Match Case.

c) Scroll down a line with Navistick to check the box, or not, to search for Whole Words Only.

d) Scroll down a line with Navistick to check the box, or not, to search backwards.

e) Scroll down a line with Navistick to check the box, or not, to Replace.

f) Scroll down a line with Navistick to type the word or character string to replace with.

g) Scroll down a line with Navistick to choose OK, or CANCEL.

10) Set Bookmark. To avoid the menu in future, enter shortcut command =+B9B8.

a) Position the cursor where you would like to set a bookmark.

b) Go to Edit > Set Bookmark.

11) Jump to Bookmark. To avoid the menu in future, enter shortcut command m+B9B8.

a) From anywhere within an open document that contains a bookmark, go to Edit > Jump to Bookmark.

b) VarioUltra takes you to the saved bookmark position.

4.6.2.1 More About Highlighting Text.

Highlighting is used to select or mark specific blocks of text for further editing. It's a prerequisite for many of the editing functions explained in this manual, such as copying or cutting text to the clipboard.

You can choose to highlight by character, word, sentence, line, paragraph, page, all text in the document, or just specific chunks of text. The commands to highlight each of these units of text *follow* below.

1) Highlight current character: B9+B1B4

2) Highlight current word: B9+B2B5

3) Highlight current sentence: B9+B3B6

4) Highlight current line: B9+B1B2B4B5

5) Highlight current paragraph: B9+B1B3B4B6

6) Highlight current page (assuming there are page breaks in the document): B9+B2B3B5B6

7) Highlight the entire document:

a) The first option is to go the command menu and then select menu item "Edit/Highlight all".

b) The second option is to use the command B9 with B3B4B6B8

8) Highlight a specific block of text:

a) Place the cursor on the first character of the block, and select command menu item "Edit/Highlight beginning/end of block".

b) Place the cursor on the last character of the block, and select command menu item "Edit/Highlight beginning/end of block".

c) The shortcut B9+B1B4 will also highlight the beginning or end of a block.

d) Inside the file manager, you can highlight a file or folder by moving to it in the file and folder list, and pressing B0, the right thumb key.

Note: Highlighted blocks remain highlighted until another highlighting command is executed or the Cancel command B9+B7B8, or display button D4 is pressed. Moving the cursor through the text will not remove the highlighting. Highlighted text blocks will be indicated on the braille display by dot 8 below each character.

4.6.4 Insert Menu.

The insert menu includes a variety of things you can add to a document, including the following:

- o New Line

- o New Paragraph

- o New Page

- o Date

- o Time

Additional information and instruction now follows for the Insert Menu options.

1) New Line. To avoid the menu in future, enter shortcut command B9+B4B5B8. Inserts a new blank line at the cursor position in your document. Accessible in the menus at Insert > New Line.

2) New Paragraph. To avoid the menu in future, enter shortcut command B9+B4B6B8. Inserts a new paragraph at the cursor position in your document. Accessible in the menus at Insert > New Paragraph.

3) New Page. To avoid the menu in future, enter shortcut command B9+B5B6B8. Inserts a new page at the cursor position in your document. Accessible in the menus at Insert > New Page.

4) Date. To avoid the menu in future, enter shortcut command 5+B9B8. Inserts the system date at the cursor position in your document. Accessible in the menus at Insert > Date.

4.6.5 Navigate Menu.

The Navigate menu provides some additional options for moving around a document. The Navigate menu includes the following items:

- Sentence Left
- Sentence Right
- Jump to Highlighted Text

These options are also listed in *Section 4.2 Navigating Within a Document*.

Sentence Left and Sentence Right have the same result as Previous and Next Sentence. Jump to Highlighted Text meanwhile, does just that. If you highlight some text within a document, choose the Edit > Navigate > Jump to Highlighted Text option, or enter command k+B9B8.

4.6.6 Tools Menu.

The Tools menu includes the following items:

- o Braille and Display Options
- o Word Wrap On/Off
- o Show Formatting Characters
- o Follow Cursor During Continuous Reading
- o Use Soft Line Breaks
- o Grade 2
- o Settings
- o Contract File
- o Decontract File
- o Braille Document Settings
- o Strip Formatting When Opening a BRF File
- o Add Formatting When Saving a BRF File
- o Braille Converter
- o Allow 8-Dots for Input (Support for BRU files only)
- o Position in Text
- o Input Mode
- o Overwrite Mode
- o Append Mode

Additional information about the Tools menu items now follows:

- 1) Braille and Display Options

- a) Word Wrap On/Off. When checked, Word Wrap is on and words will not be split at the end of the braille display. When unchecked, words will be split.
- b) Show Formatting Characters. When checked, VarioUltra will display formatting characters such as line break, paragraph, etc. If unchecked, formatting characters will be replaced by spaces.
- c) Follow Cursor During Continuous Reading. When checked, the braille display will follow the cursor during continuous reading. Uncheck the box and the braille display will not move to the cursor position until continuous reading is interrupted.
- d) Use Soft Line Breaks. This option lets you set artificial line breaks in the text, avoiding the need to move left or right on long lines. If you set soft line breaks to the length of your braille display, you need only use the next and previous line commands to move through the document.
- e) When done making your selections, scroll down to the OK option and select it. Otherwise, select CANCEL to abort your changes.

2) Grade 2

- a) Settings. Contains Master Switch settings for Typing and Reading of braille in the word processor. When checked, all braille in the word processor for text-based formats such as DOC, RTF, or PowerPoint, will be displayed using Computer Braille. Uncheck the box and you can specify other braille tables to use.
- b) Contract File. You receive an uncontracted braille document that *you* wish to convert into US English Contracted braille. Use this option to do just that, and then save the document as something else. Long files may take some time to complete.
- c) Decontract File. The reverse of Contract, is to Decontract. Simply put, if you have a document presented in US English Contracted Braille or UEB, and you'd like to convert to uncontracted braille, use this feature. Long files may take some time to complete.

3) Braille Document Settings

- a) Strip Formatting When Opening a BRF File. Decide whether VarioUltra maintains VRF file information such as characters per line, lines per page, etc., or if the text should be presented without this formatting.
- b) Add Formatting When Saving a BRF File. Decide when saving a BRF file whether line breaks and form feeds are entered automatically, based on your values for characters per line, and lines per page.
- c) Braille Converter. Choose the desired braille table to be used for braille conversion. Use the Navistick to move left or right through the list of available braille tables.

d) Allow 8-Dots for Input (Support for BRU files only). This option requires that your braille document type is set to BRU instead of BRF. BRF formatted files do not support the entry of 8-dot braille.

4) Position in Text. When selected, provides information about the cursor position in the document in both absolute and percentage terms. Scroll down a line with Navistick to enter a new cursor position and move to that location. You can specify a column, line and page within a document.

5) Input Mode. In Overwrite Mode, text entry occurs at the cursor position. In Append Mode, text entry occurs at the end of the document, no matter where the cursor happens to be in the document.

4.7 Exit Word Processor.

To exit the Word Processor and return to the main menu, press and hold system key S3.

Chapter 5: PDF Viewer.

In addition to previously described methods for opening the PDF viewer from the Main Menu, you can also enter the shortcut command y+B9B7B8 to open this application from anywhere in the Braille Notetaker.

The PDF Viewer application can be used to:

- 1) Open accessible PDF documents
- 2) Open password-protected PDF documents, so long as you know the password
- 3) Copy text from an open PDF document, to the clipboard.
- 4) Save file content as a Text file (TXT)

Note:

Copy-protected PDF files do not allow copying or saving content as a text file.

5.1 Command Menus.

Many of the command menu items for the PDF Viewer are the same as the Word Processor. Any options unique to the PDF Viewer are covered in this section. Otherwise, please refer to section 4.6 Command Menus, under the Word Processor application chapter.

5.2 Starting PDF Viewer and Opening a Document

The first time you use the PDF Viewer application, it presents the content of the internal storage (Flashdisk) for you to select a file to open. Browse

through any available files or folders to find the PDF document you wish to access, and tap B9 or press the Navistick to open it.

Notes:

- 1) When a PDF file is open, starting the PDF Viewer takes you to this document.
- 2) Opening a PDF document from within the File Manager will start the PDF Viewer application automatically.

If you are in an open PDF document and wish to open another, you need to access File > Open within the command menu, which you access by tapping S3. In the file and folder dialog that appears, search for and select the desired PDF document. When opening a new PDF document, any previously opened PDF document will be closed automatically.

**** New ** with v1.4:**

Within the document line breaks, tabulators and other information about the document structure are shown by special braille characters. With the option in menu Tools > Settings > Checkbox Show Formatting, you can hide these characters.

5.3 Opening a Password Protected PDF File

When you attempt to open a password-protected PDF file, VarioUltra will prompt you to enter a password. Enter the password and tap B9 to open the file. If you do not know the password, or enter an incorrect password, VarioUltra will not open the PDF file for you.

5.4 Navigating Within a PDF Document

The commands for reading in a PDF file are like those used in the Word Processor *application*. You can move the cursor forwards or backwards through the text by character, word, sentence, line, paragraph, or page. While it is possible to achieve these movements through menu item “Go To”, the quickest and most efficient approach is to enter a shortcut command. In some cases, there is more than one option, such as using the display keys or Navistick button.

Cursor Movement Shortcut List:

- 1) Next Character: command B9+B4, or Navistick right
- 2) Previous Character: command B9+B1, or Navistick left
- 3) Next Word: command B9+B5
- 4) Previous Word: command B9+B2
- 5) Next Sentence: command B9+B6
- 6) Previous Sentence: command B9+B3
- 7) Next Line: B9+B4B5, or display key D3, or Navistick down
- 8) Previous Line: B9+B1B2, or display key D1 or Navistick up
- 9) Next Paragraph: command B9+B4B6

- 10) Previous Paragraph: command B9+B1B3
- 11) Next Page: command B9+B5B6
- 12) Previous Page: command B9+B2B3

When the cursor is positioned within a word, sentence, or paragraph, the command “previous” will always move the cursor to the first character of the current word, sentence, or paragraph. A subsequent “previous” command will move back by the chosen unit of text.

5.5 Page Navigation

The navigation commands outlined in the previous section are generally all you need for moving within a document. Entering commands B9+B5B6 to move forward one page or B9+B2B3 to move back one page is easy enough. However, for long documents you may find that moving to a specific page is quicker. Here are the short steps to achieve this:

- 1) Tap S3 to enter the menus and select Go To > Page > Go To Page Number.
- 2) When the dialog appears, enter the page number you wish to move to, and confirm with OK.
- 3) When you move to a new page, the reading position cursor will move to the beginning of that page.

If you enter an invalid page number such as a page number that is greater than the maximum page number, an error message will be shown. To obtain information about how many pages there are in a document, enter the menus again and select File > Information.

5.6 Reading a Document with Columns

If the document you are attempting to read contains columns, it's possible that the reading order will be presented incorrectly. If this happens, the solution is as follows:

Tap S3 to enter the menus and go to Tools > Settings.

Select the Reading Order option and set it to “newspaper”.

With this setting, the PDF Viewer will analyze the text structure and attempt to present it in the correct order. While it works in most cases, there are always exceptions to the rule because of how the PDF document may have been originally created. The default option is to always open new files with the default setting, since this works for most documents.

**** New ** with v1.4:**

If the text order is not satisfactory, please select another reading order and then reopen the PDF document. Three reading order options are available: Default, Newspaper, and Top-Down.

5.7 Link Navigation.

If the creator of the opened PDF document has defined links or bookmarks, you can navigate to the text position they are pointing to. Note that VarioUltra only supports links that point to somewhere in the current opened document; links to external sources such as a web site or another document are not supported.

Navigate to a link by pressing the left thumb key B9, or by pressing in on the Navistick, the linked function is executed and you leave the reading position.

Here are the instructions necessary to navigate to a link:

- 1) Tap S3 for the menus, and select Go To > Link > Next Link Previous Link.
- 2) The linked text is shown and the reading position moves to the link.
- 3) To execute the link and jump to the assigned text (i.e. margin note), tap the left thumb key B9 or press in on the Navistick.
- 4) Shortcut D4D6 takes you to the next link, and shortcut D1D3 takes you to the previous link.

Important: The cursor (Reading position) must be positioned exactly on the link. Otherwise you will remain at the current reading position when attempting to activate the link.

5.8 Bookmarks.

If the creator of the opened PDF document has defined links or bookmarks, you can navigate to the text position they are pointing at. Bookmarks flag text positions within the document. Please note that it is not possible to add additional bookmarks from within VarioUltra.

Here are the instructions necessary to navigate to a bookmark.

- 1) Tap S3 for the menus and select Go To > Bookmarks.
- 2) Select the desired bookmark from the list, and VarioUltra will take you to that position in the document.

5.9 Reading Position and Other Document Information.

The reading position in VarioUltra is highlighted by a virtual cursor. Tap S3 for the menus and select Tools > Position in Document. This will present document information such as page number, line, and column.

**** New ** with v1.4:**

Please note that it is not possible to save the reading position inside a PDF document. When you close, and reopen a PDF document, you will be placed back at the beginning of the file.

Additional document information can be obtained by accessing command menu item Files > Information. For example, you can learn about bookmarks, and find out whether the document is copy protected.

5.10 Save PDF Document as a Text File.

For PDF documents that are not copy protected, it is quick and easy to save the document as a text file (TXT). To do so, tap S3 for the menus and select File > Save as text file. Like the save function in the word processor app, a dialog opens where you can enter the file name and specify the save location.

Note: copy protected PDF files cannot be edited or saved as a text file.

5.11 Highlight and Copy Text in a PDF File.

As an alternative to saving an entire PDF file as a text file, VarioUltra lets you highlight and select a section of text to copy to the clipboard. The copied text can then be pasted into another document.

While you can go through command menu options for highlighting and copying, the quicker approach is to use shortcut commands.

- 1) To mark the beginning and end points of a block of text, first position your cursor at the desired start position and enter shortcut command B9+B2B3B5 to confirm.
- 2) Next, position your cursor at the desired end-position, and again enter shortcut command B9+B2B3B5 to confirm.
- 3) Copy the text block to the clipboard with shortcut command c+B8B9.
- 4) Insert your copied text into another document with shortcut command v+B8B9.

Note: it is not possible to edit or copy text from copy protected PDF files.

5.12 Find.

With the find feature it is possible to search for characters, words, or parts of text within an opened document. Once found, it is possible to set the reading position to the location.

Here are the instructions for the Find feature:

- 1) Open the command menu with S3 and select menu item Find > Find new.
- 2) A text box appears where you can enter your search string. If case sensitivity is necessary, check the option Match Capitals.
- 3) Select the Search Now option to start. VarioUltra will search from the current reading position to the end of the document.

- 4) If the search string is not found, a corresponding message will be displayed. Confirm with OK.
- 5) If the search string is found, a corresponding message will be displayed. Confirm with OK to change the reading position to this search position.
- 6) To find the next occurrence, use shortcut: 3+B8B9.

5.13 Exit PDF Viewer.

To exit the PDF Viewer, select command menu item File > Exit PDF Viewer. Another way to exit to the Main Menu is to simply press and hold system key S3.

Chapter 6: Excel Viewer.

In addition to previously described methods for opening the Excel Viewer (formerly the Excel Viewer) from the Main Menu, you can also enter the shortcut command x+B9B7B8 to open this application from anywhere in the Braille Notetaker.

The Excel Viewer can be used to:

- 1) Open and read Excel XLS and XLSX documents
- 2) Copy text from an open document, to the clipboard.
- 3) Save file content as a Text file (TXT)

6.1 Command Menus.

Many of the command menu items for the Excel Viewer are the same as the Word Processor. Any options unique to the Excel Viewer are covered in this section. Otherwise, please refer to section 4.4 Command Menus, under the Word Processor application chapter.

6.2 Starting Excel Viewer and Opening a Document.

The first time you use the Excel Viewer application, it presents the content of the internal storage (Flashdisk) for you to select a file to open. Browse through any available files or folders to find the XLS or XLSX document you wish to access, and tap B9 or press the Navistick to open it.

- 1) When an XLS or XLSX file is open, starting the Excel Viewer takes you to this document.
- 2) Opening an XLS or XLSX document from within the File Manager will start the Excel Viewer application automatically.
- 3) When you open a password protected XLS or XLSX file, you will be prompted to enter the password. An incorrectly entered password will result in an error message.

4) There may be times when cell content is not displayed properly. This can be especially true if the cells have complex formulas or are linked to other cells.

If you are in an open XLS or XLSX document and wish to open another, you need to tap S3 for the menus, and select File > Open. In the file and folder dialog that appears, search for and select the desired XLS or XLSX document. When opening a new document, any previously opened document will be closed automatically.

6.3 Save Excel Files as a Text File.

Saving an Excel document as a text file (TXT) is simple. Tap S3 for the menus and select File > Save as Text File. Like the save function in the word processor app, a dialog prompts you to enter the file name and specify the save location. Confirm with the Save option and the content of your Excel file will be saved in TXT format.

Note:

- 1) A semicolon is used to separate the content of each cell on a given row.
- 2) Each row is placed on a separate line.
- 3) If the Excel document has multiple sheets, the content of all sheets will be saved in the new text file.
- 4) Each sheet is represented as a new paragraph in the new text file.

6.4 Copying Cell Content to the Clipboard.

To copy the content of an individual cell on to the clipboard, make sure you are in the cell you wish to copy and use the global copy command, c+B8B9. You can then paste the contents of the clipboard into a document in the word processor using the paste command, v+B8B9.

6.5 Excel Document Information.

To obtain information about the currently opened Excel document, open the command menu (S3) and select menu item File > Information.

VarioUltra can tell you the following information about your file:

- 1) File name and path.
- 2) The number of worksheets.
- 3) Name of the worksheet.
- 4) Cell coordinates that have content on the current worksheet.

6.6 Reading by Cells, Row, or Column.

Reading content in the Excel Viewer is possible by cell, by row, or by column. By default, when you open an Excel file the Excel Viewer displays the content of the first cell (A1) of the active worksheet. A

variety of navigation commands are used to read the content of individual cells, or the content of all cells on a given row or column. There are additional options that will result in row and column information being included as a heading when reading cell by cell.

6.7 Reading by Cell.

Reading content cell by cell is achieved by moving the Navistick left and right along a row, or up and down within a column.

When opening an Excel file for the first time, the VarioUltra reading cursor will default to cell A1. Using the Navistick, move one cell to the right and the braille display will present the content and the cell coordinate, which should now read B1. Moving one cell to the left will return you to cell A1. In a similar way, using the Navistick to move down one cell within the column will take you to cell A2. The braille display will display content for this cell, along with the cell coordinate.

If you wish to move to a specific cell coordinate within the current worksheet, enter command g+B8B9, and a dialog will prompt you to enter the cell coordinate. Tap B9 and VarioUltra will go to this cell coordinate. This option can also be found in the command menu under menu item Navigation > Cell.

Note: In the command menu item Tools, you can adjust additional settings for the Excel Viewer, and obtain additional information about the current cell such as the row and column number, and any cell comment if one exists.

6.8 Reading by Row.

When reading by row, VarioUltra will display the content of all cells on that row. You can use the Navistick or D2 and D5 buttons to move left and right along the row. There are shortcut commands for moving the display up and down by row, and moving to the first or last row.

If you wish to move the display to a specific row in the worksheet, use the command g+B8B9. In addition to the shortcut commands that follow below, you can find navigation commands in the command menu under menu item Navigation > Row.

Next row (down): B4B5 or D3

Previous row (up): B1B2 or D1

First row: B1B2B3 or D1D4

Last row: B4B5B6 or D3D6

The braille display shows the coordinates of the cells in the row, i.e. A1 – D1. The contents of the single cells stand side by side in one line and

are separated by vertical line. Use the Navystick or D2 and D5 buttons to scroll along the row.

With the general copy command c+B8B9, you can copy the current row to the clipboard.

6.9 Reading by Column.

When reading by column, VarioUltra will display the content of all cells in that column. Cells are displayed horizontally and are separated with the underline symbol. You can use the Navystick or D2 and D5 buttons to move left and right within the column. There are shortcut commands for moving the display left and right by column, and moving to the first or last column.

If you wish to move the display to a specific column in the worksheet, use the command g+B8B9 as outlined in the Reading by Cell section to move to a cell in that column. In addition to the shortcut commands that follow below, you can find navigation commands in the command menu under menu item Navigation > Column.

Next column (right): B5

Previous column (left): B2

First column: B1B2B3B7

Last column: B4B5B6B8

The braille display shows the coordinates of the cells of the column, i.e. A1 – A6. The contents of the single cells stand side by side in one line and are separated by underline. Use the scroll functions as explained in section 6.8 to read cell by cell.

With the general copy command c+B8B9, you can copy the current column to the clipboard.

6.10 Reading Files with Multiple Worksheets.

Some Excel files have more than one worksheet. To read cells, rows, or columns of cells within a given worksheet, you must first move to it. You can move to the next or previous sheet, or you can open the dialog “Go to Sheet” with b+B8B9, where you can select the name of the desired sheet. The navigation commands can also be found under menu item Navigation > Sheet in the command menu.

Next sheet: B5B6

Previous sheet: B2B3

When you first move within the opened Excel file between worksheets the Excel Viewer presents the first cell (A1) of each sheet. If you have switched to a worksheet and moved to another cell position (e.g. A10), returning to this worksheet in future will return to the last presented cell of the sheet.

6.11 Find and Find next.

With the find option, you can search for text or parts of text in the cell content.

You can determine whether the text is searched for only within the cells of the current worksheet, or within all worksheets in the currently opened Excel file. With another option, you can determine whether the search mode should search by row or column. With the by-row option, the search string is searched within the sheet from top to bottom. With the by-column option, the search string is searched from left to right.

To get started, open the command menu with a brief press of the system key S3, and then select menu item Find > Find New, which opens a dialog. Enter the search string, and then specify the search mode to begin the search. Assuming the search string is found, the cursor will move to the appropriate cell position and display the cell coordinates and content on the braille display.

It is also possible to “Find next”. This can be found in the command menu, under menu option Find > Find next. You can also use the shortcut command, 3+B8B9 (number 3 with B8B9), or use display buttons D1D4D6. This will repeat the search within the sheet per the search mode specified earlier.

6.12 Define Column Heading.

You can assign the cell contents of a row to become headings of the columns.

In the sheet move to the row or to one cell of the row, in which the cells contain the entries you want to define as column headings. Open command menu and select the menu item “Tools > Set current row as column heading”.

The result is, that in future you get this column heading in addition to the cell content and the cell coordinates. This additional information is set in brackets.

6.13 Define Row Heading.

You can assign the cell contents of a column to become headings of the rows.

Move to the column or to one cell of the column in which the cells contain the entries you want to define as row headings. Open the command menu and select the menu item Tools > Set current column as row heading. In future, these assigned row titles will appear in addition to the cell content and the cell coordinates. This additional information is set in brackets.

6.14 Edit or Delete Heading Definition.

If you define another row as column headings, this replaces the former column heading definition. If you define another column as row heading this replaces the former row heading definition.

If you want to delete all headings in the current sheet, open the command menu and select menu item Tools > Clear current sheet headings. Headings that you have defined in other worksheets of the Excel file are not affected by this command and remain unchanged. The Excel Viewer application saves the heading information for up to 1,000 sheets in a database called ssvviewer.sdf, which can be found in the USER folder. This ensures that the assigned headings are not lost when you open the Excel file again in future.

6.15 Reading Cell Comments.

The cells of Excel files can on occasion have a cell comment. While this comment is not presented along with regular cell content, you do have access to it. To get it, open the command menu and select the menu item Tools > Show current cell comment. Alternatively, use the shortcut command m+B8B9 to read the cell comment.

Since reading cell comments requires an extra command, it is important to know whether a cell has a comment to begin with. To get this additional information while browsing through the sheet cell by cell, do the following:

- 1) Open the command menu and select the menu item Tools > Settings.
- 2) Activate the check box "Display notification for cell comments"
- 3) On the braille display, an asterisk (*) will appear in front of the cell coordinate to indicate when a cell has comment.

6.16 Exit Excel Viewer

To exit the Excel Viewer, select command menu item File > Exit Excel Viewer. Another way to exit to the Main Menu is to just press and hold system key S3.

Chapter 7: Calculator.

In addition to previously described methods for opening the Calculator from the Main Menu, you can also enter the shortcut command c+B9B7B8 to open this application from anywhere in the Braille Notetaker.

General information about the Calculator application:

- 1) Simple and scientific calculations can be performed.
- 2) Always use Computer Braille.
 - a) **** New ** with v1.4:** The calculation line only supports computer braille input, even when you have switched to a contracted braille.
- 3) Input figures and symbols and then press B8, or type the equals sign. The calculation and result will be shown on the braille display.

- 4) To delete the previous calculation and carry out a new one, open the menus by tapping S3 and select Edit > Clear Calculator Line. Alternatively, use shortcut command e+B9.
- 5) When you open the calculator, the display will show either the last-performed calculation, or a blank field containing "0".
- 6) Numbers and operators are input directly.
- 7) Decimals can be input either with a decimal point (default) or a comma. The comma can be set as a user specific setting within menu item, Tools > Options > Comma Instead of Decimal Point.

As with other VarioUltra applications, options can be found in the Command Menu or via shortcut commands. Advanced mathematical (scientific) functions can also be accessed in this manner, and are addressed later in this chapter.

7.1 Command Menus.

Tap S3 to access the command menus for the Calculator. There are six menus in total, containing the following options:

Math Functions

1. Basic Functions menu
 - a. Addition
 - b. Subtraction
 - c. Multiplication
 - d. Division
2. Advanced menu
 - a. Percent
 - b. Square Root
 - c. Power
 - d. Exponential
 - e. Natural Logarithm
 - f. Logarithm to Base 10 Log
 - g. Modulo
 - h. Sine
 - i. Cosine
 - j. Tangent
3. Expressions menu
 - a. Pi
 - b. Euler
 - c. Bracket Open
 - d. Bracket Close

4. Execute Calculation menu

7.2 Entering Numbers and Operators

Note that all numbers and operators must be entered using Computer Braille. A list of common symbols and numbers 1-9 are shown below with their respective braille codes.

Symbols:

+ (plus) symbol: B3B4B6

- (minus) symbol: B3B6

* (multiply) symbol: B1B6

/ (divide) symbol: B4B3

. (Decimal point) symbol: B4B6

= (equals) symbol: B1B2B3B4B5B6

((open parenthesis) symbol: B1B2B3B5B6

) (close parenthesis) symbol: B2B3B4B5B6

Numbers:

1 B2

2 B2B3

3 B2B5

4 B2B5B6

5 B2B6

6 B2B3B5

7 B2B3B5B6

8 B2B3B6

9 B3B5

0 B3B5B6

7.3 Inputting Calculations.

Input your calculation in the line displayed and press B8 or the “equals sign”. The equals sign will be inserted and the calculation and its result will be displayed after it.

Notes:

1. The result can be used as the basis for another calculation with the appropriate operator.
2. If a new value is to be entered, the previous result will be overwritten.
3. If an error occurs, a corresponding message will appear on the display.

4. The previous 10 calculations are automatically saved in the Results list (Calculations list) – use the Navistick up / down or D1 / D3 to go through this list.
5. Remember that shortcut command e+B9 will clear the calculator line.

7.4 Editing Calculations.

Correcting errors in a calculation is done in much the same way that text is corrected in the word processor. If you just entered something wrong, just tap B7 to backspace and type again. If you realize the error after entering other information, use cursor routing to move the cursor to that position and amend as required.

Notes:

1. B7 deletes the character to the left of the cursor.
2. B9B7 deletes the current character.
3. If a character to the left of the = sign is edited, entering B8 or the = sign again will perform the new calculation.
4. If a number is input on the right of the = sign it will appear on a new line.
5. If something other than a number is input to the right of the = sign the result will also appear in the new line.
6. Spaces can be input freely.
7. A negative will be indicated with the - sign; a + sign cannot be used.
8. When a correction has been made, the new result will be calculated and displayed by pressing B8 or the = sign.

7.5 Navigating within Current and Previous Calculations.

It is possible to move within a calculation by moving the cursor with B9+B1 or B9+B4. You can also move left and right with the Navistick.

The previous 10 calculations are kept in the calculations list. Use Navistick up and down or D1 and D3. Previous calculations can be edited to perform further calculations.

New entries are added to the end of the list. Once the list reaches 10 results, the first result will be deleted to make way for the new incoming result.

The following commands are available:

1. Previous calculation: Navistick up, D1, or command menu item View > Calculations list > Previous entry.
2. Next calculation: Navistick down, D3, or command menu item View > Calculations list > Next entry.
3. Last calculation: Command menu item View > Last entry of calculations list

4. Clear calculations list: Shortcut command $u+B9$, or command menu item Edit > Clear calculations list.

7.6 Using the Clipboard.

Calculations and equations can be copied to the clipboard using the global command for copy, $c+B8B9$. You can paste using the global command for paste, $v+B8B9$. If you use command $z+B8B9$ instead, just the answer will be copied to the clipboard for subsequent pasting into the word processor.

7.7 Settings.

There are two settings under command menu item Tools > Options. They are as follows:

1. The number of positions after decimal point (or comma) to show on the display.
2. Choose between the use of a decimal point or comma.

7.8 Memory List and Memory Functions.

A memory list is available that can contain up to 10 calculations. These calculations can be called up and edited for use in other calculations. New entries are added to the end of the list, and when more than 10 are added, the first result is deleted to make space for the newest entry. In addition, the usual pocket calculator memory functions (M+, M-) are also available. These values are also added to the memory list.

The following commands are available:

1. Add calculation to memory list: $l+B9$, or command menu item Tools > Memory functions > Add to memory list.
2. Previous entry in memory list: $y+B8B9$, or command menu item View > Memory list > Previous entry.
3. Next entry in memory list: $y+B9$, or command menu item View > Memory list > Next entry.
4. Last memory value: $m+B9$, or command menu item View > Last memory value.
5. Clear memory list: $r+B9$, or command menu item Edit > Clear memory list.
6. Add value to the memory: M+ plus $B8B9$, or command menu item Tools > Memory functions > M+ add to last memory value.
7. Subtract value from memory: M- + $B8B9$, or command menu item Tools > Memory functions > M- subtract from last memory value.
8. Insert last memory entry: $i+B8B9$, or command menu item Tools > Memory functions > Insert last memory entry.

9. Insert last memory entry into calculator line and then clear it: r+B8B9, or command menu item Edit > Insert and clear last memory entry.

Example 1:

To add to memory, the result of a sum that calculates the total price of an item with sales tax, follow these instructions:

1. The net price of the item is 100 and the sales tax is 6 percent.
2. Input everything between the quotes: "100 + 6%100"
3. Enter command a+B9 to add the result to the memory list.

To carry out other similar price calculations, all we need to do is enter command y+B9 or y+B8B9 to recall the saved formula, edit the "100" value and perform the calculation by tapping B8.

Example 2:

When checking cash register entries, we add up the individual calculations by entering + plus B8B9 (plus symbol and B8B9 together) after each calculation.

The final value will be displayed by entering command r+B9.

Subsequent use command r+B9 will display the previous subtotal.

7.9 Scientific Mathematical Functions.

Mathematical functions and operators can be input directly, or via command menu item Math functions > Basic functions, or command menu item Math functions > Advanced.

Calculations involving division and/or multiplication take precedence over those containing addition and subtraction (BODMAS precedence). The inclusion of parenthesis allows calculations to be ordered. The minus sign must be used to denote a negative number, e.g. 3×-2 .

A list of functions, their operators and examples now follow.

7.10 Basic Calculations.

1. Addition (plus): $2+3$
2. Subtraction (minus): $3-2$
3. Multiplication (times): $3*2$
4. Division (divided by): $7/8$
5. Percent (x per cent of y): $7\%50$
6. Parenthesis: $3*(7+5)$
7. Square root: $\text{sqrt } 36$

7.11 Powers, Logarithms, Etc.

1. Powers (to the power of x): $2\text{pow}3$

2. Exponent (10 to the power x): 2×10^{-5}
3. Common logarithms (to base 10): $5 \cdot \log 70$
4. Natural logarithms: $2 / \ln 10$
5. Euler: e^{-3}
6. Pi: $\pi \cdot 36$
7. Modulo: $5 \bmod 4$
 - a. The mod function displays the modulus or remainder of x/y .
 - b. Example: 5 divided by 4 gives a remainder of 1 (i.e. $5 \bmod 4 = 1$).

7.12 Trigonometric Functions.

1. Sine (in degrees): $\sin 90$
2. Sine in radians: $\sin(4+7)$
3. Hyperbolic sine: $\sinh 0,75$
4. Arcus sine degrees (Inverse): $\sin^{-1} 0,5$
5. Cosine (degrees): $\cos 90$
6. Cosine in radians: $\cos(4+7)$
7. Hyperbolic cosine: $\cosh 0,75$
8. Arcus cosine degrees (Inverse): $\cos^{-1} 0,75$
9. Tangent (degrees): $\tan 45$
10. Tangent in radians: $\tan(4+7)$
11. Hyperbolic tangent: $\tanh 0,75$
12. Arcus tangent degrees (Inverse): $\tan^{-1} 0,5$

7.13 User Constants.

The variables x, y, and z can have any constant values assigned to them.

For example, they can be used to denote specific factors frequently used in your calculations. The variable will then be used instead of a number, e.g. \sqrt{x} will calculate the square root of this assigned value x. To enter x, y or z you can either type this character directly into the calculation, or select the corresponding item from the command menu.

To define a value for the variable x, open command menu item User constants > x > insert value of calculator line in x, or use shortcut command 1+B8B9. Such assignments can be helpful if you work frequently with large numbers.

The following commands are available within command menu item User constants > x:

1. Insert x into calculation (hotkey: x)
2. Insert value of x into calculator line

3. Insert value of calculator line in x – shortcut command 1+B8B9
4. Show x entry – shortcut 1+B9

This is the same for the variables y respectively z. The corresponding shortcuts are combined with number 2 respectively number 3.

7.14 Conversions.

The Conversions option and its functions allows various conversions to be made. For example, how many centimeters are there in 17 inches? To calculate this, type the number 17 and then open command menu item Conversion > Inches to centimeters. The correct answer (43.18) will be displayed in this case.

Note: Answers report back the value only. Symbols relating to the dimension (inches, centimeters, etc.) are not displayed. The dimension is defined by the selected conversion command.

7.15 Exit Calculator.

To exit the Calculator and return to the main menu, press and hold system key S3.

Chapter 8: Timers.

In addition to previously described methods for opening the Timers application from the Main Menu, you can also enter the shortcut command t+B9B7B8 to open this application from anywhere in the Braille Notetaker.

General information about Timers:

1. Can be used for time measurement and alarms
2. Includes a countdown timer, a stopwatch, and four alarm clocks.

Setting Time and Date: if you're looking for instructions on changing time and date, please refer to section 10.6. Otherwise, read on for details on the timer and alarm functions in VarioUltra.

8.1 Timer.

The timer allows a specific time to be counted down. A tone is emitted when the end time is reached. The timer application contains various edit boxes and buttons to set the time, watch the time pass while the timer is running, and to stop and start the timer.

To start the timer, proceed as follows:

1. From the main menu, select menu item Timers > Timers (countdown).

2. The timer will open at an “elapsed” field giving the running time in minutes and seconds. When opened for the first time or when the timer is stopped, this will read 00:00:00.
3. The timer duration is set to 10 minutes (00:10:00). This can be changed in the “Set duration” edit box to a maximum of 23:59:59.
4. Select “Start” to switch the timer on and begin the countdown. The “Start” option is no longer available and “Stop” appears instead, which allows the running timer to be stopped.
5. During countdown, the “elapsed” field shows how much time has elapsed starting from 0 and ascending, and the “remaining” field shows the time remaining.
6. When the end time is reached, a tone will be emitted once. The elapsed time field will have been reset to 00:00 and the “Start” button is once again available.
7. Selecting “OK” or “Cancel” will only close the timer dialog; if the timer is running it will continue to do so in the background, emit a tone when the end time is reached.

The following shortcuts are available in the open timer (main view):

1. Start timer = s+B9
2. Stop timer = o+B9

Hints for inputting the time in the “Set duration” edit box:

1. Input the time using format HH:MM:SS.
2. If no hours are to be input, input MM:SS.
3. If a figure greater than 60 is input for minutes, the corresponding time in hours and minutes will appear.
4. The timer can run for a maximum of 23:59:59 hours; longer periods are not possible.
5. If an invalid time is input, the time will be reset to 00:20 (i.e. 20 seconds). A hint message will display telling that values less than 20 seconds are not supported.

8.2 Stopwatch.

The stopwatch allows time to be recorded and is accurate to the second. It counts from 0 upwards and can be consulted, paused and restarted at any time. The count can also be accompanied with acoustic signals.

The main view of the stopwatch contains a dialog, various edit boxes, and buttons to follow the passage of time, consult the end or interim time, and to start, pause and stop the stopwatch. All commands can also

be executed by selecting the appropriate entry entries from the command menu.

To start the stopwatch, proceed as follows:

1. From the main menu, go to menu item Timers / Stop watch.
2. The main view of the stopwatch will open at a “Time” field giving the elapsed time in hours, minutes and seconds. When opened for the first time or when a new measurement is begun, this will read 00:00:00. When a measurement is stopped or paused, the end or interim time will be displayed.
3. Press the “Start” button to start the stop watch and begin the measurement; the “Start” button will no longer be available, and the main view will now display “Pause” and “Stop” buttons which can be used to pause or stop the measurement. When paused, a “resume” button will appear in the place of the “Pause” button, which will resume the measurement.
4. The time measurement can be accompanied with acoustic signals. Open the command menu by pressing S3 and then select menu item Tone Signals, and then the corresponding entry.
5. The “Display End time/Interim” button opens a message which, during a measurement, gives the interim time at that moment. The command is executed when the measurement is paused, which gives the interim final time, and when the stopwatch is stopped, which gives the final time.
6. Close the dialog with “OK” to return to the main view.
7. “OK” or “Cancel” will close the stopwatch dialog. If the stopwatch has been started it will continue to measure time, and any set tones will continue to be emitted; to stop it, the stopwatch main view must be opened again (from Main Menu, select menu item Timers > Stop watch).
8. When VarioUltra is switched to standby while the stop watch is running, the stop watch will continue silently.
9. To stop the measurement, press “Stop” in the main view.

Within the open stop watch (main view) the following shortcuts are available:

1. Start stopwatch = B4
2. Stop stopwatch = B6
3. Pause measurement / resume = B5
4. Consult end or interim time = B8
5. While stopwatch is running, follow time on the Braille display with command t+B9.
6. Seconds beep on = B1
7. 10 second beep on = B2

8. No beeps = B7

These shortcuts can be pressed during time measurement.

Once started the stop watch will continue even if VarioUltra is switched to standby mode, or running another application.

8.3 Alarm Clock.

Four independent alarm clocks can be configured here. Each can be set individually with its own wake-up time and with the weekday it should ring. Alarms are given as tone signals and/or vibration. The names of the four alarm clocks, which are also displayed at wake-up time, can be determined by the user. The alarms are switched off by default.

To set an alarm, proceed as follows:

1. From the main menu, select menu item Timers > Alarm clocks. A dialog will open displaying the names and status of the four alarms.
2. To amend the settings of, for example, Alarm 1, select its button.
3. Another dialog will open. Use the Check box "Active" to switch the alarm on or off.
4. In the "Name" edit box the alarm (Alarm 1) can have another name assigned, e.g. "normal alarm".
5. Enter the wake time in the next edit box; 08:00 is the default time and can be overwritten.
6. Use the appropriate check box to determine the weekday the alarm should go off.
7. The "Sound on" check box is activated by default.
8. The sound for the alarm can be selected from a list of short wav-files. The path will be given in the "Sound file" field.
9. Select "Choose signal" if a different sound is to be set as the alarm signal. A file list will open – move up and down the list to select the desired file (cf. File manager). The TIMALARM.WAV, BELL.WAV or ROOSTER.WAV files are recommended. Press B9 or Return to confirm the default button "Apply", which will close the dialog. The new alarm is now selected and its path given in the "Sound file" field.
10. The "Vibration on" check box is unchecked by default. When checking you get a list with pre-defined vibration patterns. Move left or right to select the desired pattern and confirm OK.
11. Confirm with "OK" to finish the settings and exit the alarm dialog with "OK".

When the wake-up time arrives VarioUltra will sound the selected alarm and/or vibrate according to the selected pattern. A message will also be displayed with the alarm name. If the alarm is ignored VarioUltra will

sound the alarm every 10 seconds for up to 3 minutes. You can “snooze” the alarm by pressing any key except B9. In this case, the dialog closes and the alarm activates again 10 seconds later.

To quit the alarm press B9 or confirm the OK button in the dialog.

8.4 Exit Timers.

To exit Timers and return to the main menu, press and hold system key S3.

Chapter 9: File Manager.

In addition to previously described methods for opening the File Manager application from the Main Menu, you can also enter the shortcut command f+B9B7B8 to open this application from anywhere in the Braille Notetaker.

The File Manager can be used to:

1. Browse the content of the internal storage (Flashdisk)
2. Browse the content of a connected USB Stick (Stick)
3. Create or Delete folders
4. Rename files or folders
5. Delete Files
6. Open supported file types in their respective application
7. Get file or folder information (Properties)

9.1 Command Menus.

There are four menus in the File Manager application, each containing a variety of options.

They are as follows:

1. File
 - a. Open
 - b. Properties
2. Edit
 - a. Copy
 - b. Highlight
 - c. Highlight All
 - d. Invert Highlight
- e. Find
- f. Set Anchor Position
- g. Jump to Anchor Position
- h. Toggle Anchor Position
- i. Zip Archive

- j. View
- 3. Filter
- 4. Sorting
- a. Tools
- 5. Zip Progress

9.2 Navigating Around File Manager.

When you enter the File Manager application, you will have access to the 32GB of internal storage, which is called Flashdisk.

**** New ** with v1.4:**

Note that file and folder names are always shown in Computer Braille.

At the root position, you will find Flashdisk and the Temp folder. Beside each name you will find a number range (eg 1 of 2), followed by the date and time of creation. Note that the date and time stamps rely upon VarioUltra's time and date being correct.

1. Tap the top or bottom edge of Navistick to move up or down in the list.
2. Once you reach the bottom or top of list, VarioUltra stops moving in that direction.
3. To enter the Flashdisk or a folder, tap the right-side edge of Navistick.
4. To exit out of a folder, tap the left edge of Navistick to return to the previous location.
5. If you locate a file you would like to open, and it's a supported file type, just tap B9, or press in on Navistick. VarioUltra will open the appropriate application and display the file for you.

9.3 Create a New Folder.

Creating a sub-folder in VarioUltra is a simple process. For this step-by-step set of instructions, we will walk through the steps required to create a sub-folder within the Edit folder.

1. From within File Manager, make sure you are at the uppermost level of the file list on the folder called Flashdisk. Enter this folder by moving the Navistick to the right; a single tap to the right should do it.
2. Within the Flashdisk folder you will find the Edit folder. Scroll up or down with the Navistick until you find the Edit folder. Enter this folder by moving the Navistick to the right; a single tap to the right should do it.
3. Since the Edit folder is very likely empty, VarioUltra will display a message telling you as much.
4. At this point, open the command menu (S3) and select menu item File > New folder.

5. A dialog will open and you will find yourself in an edit box where the new folder name can be entered. Note that a suggested name “Newfolder” will be present.
6. You can either accept this suggested name, or overwrite with your preferred name.

**** New ** with v1.4:** please use Computer Braille (B9 + D1) here to avoid using any forbidden characters.

Confirm with “OK” to accept and exit back to the file list. Your new folder has been created and should be visible to you in the file list.

You can reach the New Folder dialog in future with the shortcut n+B8B9. The dialog also contains the last used save location; you can also change the path if you wish.

9.4 Open a File or Folder.

The Open command is used to open files and folders. When a folder is opened, the files and sub-folders will be displayed in a list. When a file is opened the user is transferred to the appropriate application:

1. DOC, DOCX, TXT, BRF, BRL, RTF, PPT, PPTX, PPS, PPSX files open the Word Processor
2. XLS and XLSX files open the Excel Viewer
3. PDF files open the PDF Viewer

Here are the step-by-step instructions to open a file or folder:

1. From within the file list, scroll up or down to the file or folder you wish to open.
2. Once you are on the file or folder you wish to open, enter the command menu with S3, and then select File > Open.
3. If you are opening a folder, the folder opens to show the content in a file list.
4. If you are opening a file, the file will open inside the appropriate application.

You can use the shortcut o+B8B9 in future to open the selected file or folder.

9.5 Opening Files from Within the Word Processor Application

By default, the Word Processor app only displays text-based documents such as RTF and DOC/DOCX files.

**** New ** with v1.4:** PowerPoint PPT, PPTX, PPS, and PPSX files are also supported.

To change what type of files you see, follow these additional instructions.

1. From within the Word Processor, follow the instructions 1 through 3 above to get to the file tree.
2. Once inside the list of files, press display buttons D4+D6 to access the other options in the dialog; the current path will be displayed.
3. Scroll down once using the Navistick, and the entry below the path will be the File Type list; the factory default is "Text Files (RTF, TXT, DOC, DOCX) 1 of 3".
4. Now scroll right with the Navistick to select either "Braille Files (BRF) 2 of 3" or "All Files (*.*) 3 of 3". You must open a file after making these changes for the setting to stick.
5. Any change you make to the type of files to be displayed will now be remembered by VarioUltra. You will need to repeat these instructions if you change your mind in future.

You can now use the Navistick to scroll back up to the file list. If, for example, you chose to display All Files, you will now see BRF files in addition to any text-based file formats.

9.6 Delete a File or Folder

With the delete command, you can delete files and/or folders from the storage media. Deleting a folder also deletes files saved within that folder. When deleting large files or folders that contain several files, note that deletion process may take some time. A flashing pattern will appear on the first braille cell to indicate when VarioUltra is busy. Do not attempt to switch off or otherwise interrupt VarioUltra until this flashing pattern stops.

Note: Deleting a file or folder from VarioUltra is final—there is no recycle bin. However, if the file you have deleted is still open in the Word Processor it will still be on the RAM memory and can therefore be saved from there. To delete the document completely from RAM memory, you must also ensure it is closed within the Word Processor.

Here are the step-by-step instructions to delete a file or folder:

1. In the file list, use the Navistick to move to the file or folder you wish to delete
2. Open the command menu (S3) and select menu item File > Delete.
3. A dialog will open with a security question and a message about the number of files in the folder and/or the file size. Select the "Yes" option to confirm the deletion.
4. Deletion of multiple files or folders at one time is also possible. Please refer to the Edit Menu section elsewhere in this manual for instructions on highlighting multiple files/folders.

The shortcut command B9+B7 can also be used to open the Delete dialog.

Note: If you receive a message that a file or folder cannot be deleted, it may be because it contains files with activated attributes that make the file(s) hidden or read-only. Please refer to the “Properties” section below for instructions on changing these attributes.

9.7 Rename a File or Folder

Changing the name of a file or folder is simple.

Here are the step-by-step instructions to rename a file or folder:

1. In the file list, use the Navistick to move to the file or folder you wish to rename.
2. Open the command menu (S3) and select menu item File > Rename.
3. A dialog will open with an edit box, which contains the name of the file or folder you wish to rename.
4. Enter the new name, being careful not to change the extension in the case of files. Select OK to confirm the change.

9.8 Create a New Blank Document

A blank document can be created as either a regular text-based file (RTF, TXT), or as a Braille Ready Format (BRF) file. The default setting is BRF.

**** New ** with v1.4:** new documents can only be created within the word processor application.

Before creating a blank document, you should decide which option you prefer: the default BRF, or RTF. Note that VarioUltra remembers your choice so creating a new blank document in future will skip these steps unless you wish to change the file format.

Here are the instructions to create a new blank document:

1. Open the command menu by tapping S3.
2. Select File > New.

A dialog will open, with a text field where you can give your file a name.

**** New ** with v1.4:** please ensure that your file name is entered in computer braille (B9 + D1). Some contracted characters lead to invalid file names, and are therefore not allowed. If you try to use contracted braille, a warning message may be displayed, saying “Could not create file”. The only way to quit this message is to press a routing button above any braille cell EXCEPT the first braille cell.

Move down to the file type list and then scroll horizontally and select either BRF to create a braille document, or RTF to create a Rich Text Format document.

Confirm with OK.

The file will now be saved in the selected file format with the current save location. You will then be placed in the newly created file. To save the file at any time, use the shortcut command s+B8B9.

You can create new documents in future with the shortcut n+B8B9.

9.9 Opening Documents

The word processor of VarioUltra can open the following file formats: doc, docx, rtf, txt, and brf.

**** New ** with v1.4:**

Power Point PPT and PPTX, as well as PowerPoint Slides PPS and PPSX documents are also supported.

With txt format, all ANSI, UNICODE, and UTF8 files will be opened correctly. For doc and docx formats, as well as PowerPoint, files are always opened in reading mode. When editing such a document it changes the format type to .rtf and saves in that format to protect the formatting of the original file.

Note: to open a document correctly the word processor needs 2 to 3 times more free memory space than the file size of the document. As such, attempts to open a file of 10MB in size may not open. If you want to open several documents, we recommend you open the largest one first. Also, please bear in mind that large documents can take time to open. A braille pattern on the first braille cell will flash to indicate VarioUltra is busy. Do not attempt to switch off VarioUltra or otherwise interrupt the process when this cell is flashing.

Using shortcut command o+B8B9 in future will open the Open File dialog and position you in the file list.

9.10 Introduction.

Like Windows Explorer and Macintosh Finder, the File Manager application allows you to:

1. Highlight, delete, copy, or rename files
2. Create new folders
3. Move files from one folder to another
4. Adjust the sort order of files
5. Zip files or folders, and unpack a zip file

You can access the File Manager from anywhere in Braille Notetaker mode by entering global command f+B7B8B9, or from the main menu by entering hotkey “f”.

Additional details on the File Manager can be found in section 12, “Command Menu”.

9.11 Entering and Navigating the File Manager.

When you enter the File Manager, you will find yourself in a vertical list of files and folders that are stored in the internal storage of VarioUltra. The list view is identical to the way files and folders are presented when using the Open and Save As options in the Word Processor Command Menu. As a reminder, we get to the Command Menu at any time by tapping the system key S3.

There are multiple options for moving up and down this list:

1. To move down: Tap down on the Navistick, press the display button D3, or press the command B9B6.
2. To move up: Tap up on the Navistick, press the display button D1, or press the command B9B3.

By default, this will access all files and folders in the root directory of the internal storage. Inputting a character or string of characters in quick succession will move the display to the first file or folder that begins with the character or string of characters that you have entered.

When you are on a folder in the list, tapping right on the Navistick or entering command B9B4 will move to the right, one level down from the root directory. Tapping left on the Navistick or entering command B9B1 goes left, and up a level. The uppermost level of VarioUltra’s internal storage will display the internal storage folder (Flashdisk) as well as any USB memory stick (Stick) that may be plugged in. The next level down contains either the “Edit” folder or other folders and files.

Note: The internal storage media folder "Flashdisk" is presented as "VarioUltra / Storage" when you connect VarioUltra to a computer via USB.

9.12 Additional Information about Files and Folders.

When you are on a folder or file in the list, you can obtain additional information such as the last modified date, size, and file type. You can configure what is displayed and how much is displayed by going to main menu > Settings > Presentation > Templates > File resp. Folder. The letter “z” will appear in front of any file or folder that is part of a zip archive.

Note: VarioUltra will always open the application for a corresponding file. As such, the PDF Viewer opens PDF files, the Excel Viewer opens XLS

files, and the Word Processor opens DOC, DOCX, RTF, TXT, and BRF files.

**** New ** with v1.4:** PowerPoint PPT, PPTX, PPS, and PPSX formats are also supported. Note: while it is technically possible to open a PDF document from inside the word processor application, we advise against it as you will invariably encounter extraneous control characters.

9.13 Using File Manager with External USB Stick.

Accessing a USB stick is as simple as inserting the USB stick into the standard USB port on the left side of VarioUltra, and then entering File Manager to locate “Stick” in the list of storage media.

Note: most standard USB sticks will only insert when facing the right way up. This is to say that if you turned the stick upside down the stick would not fit properly. There are so-called mini USB sticks that are totally flat on both sides of the part that gets inserted into VarioUltra. There is potential therefore that the stick is inserted upside down. If this happens the stick will not be seen in File Manager. Should this happen to you, reinserting the stick the right way up should solve the problem.

9.14 Using VarioUltra as an External Drive on a PC.

Like all VISIOBRAILLE braille displays, VarioUltra is Human Interface Device (HID) compliant, which means that connecting to a PC as an external drive requires only that a USB cable be connected to the USB-C connection on VarioUltra, and to a standard USB connection on the PC. A double beep will emit from the PC as connection takes place, at which point you can open Windows Explorer to view the contents of VarioUltra. This means that after connecting the device, Windows Explorer will display an entry called VarioUltra, with a sub-folder VarioUltra Storage. This folder is essentially the Flashdisk folder referenced elsewhere in this section. Use of standard computer functions can be performed on this storage, including copy, paste, remove, rename, move, etc.

Note:

1. It does not matter whether VarioUltra is in Braille Notetaker or Braille Display mode when using it as an external drive. You can even switch between modes without difficulty.
2. As of this writing, using VarioUltra as an external drive is only possible on a PC with the Windows operating system. We hope to see similar support added to the Mac operating system in the future.

9.15 Exit File Manager.

To exit the File Manager and return to the main menu, press and hold system key S3.

Chapter 10: Settings Menu.

VarioUltra Settings and related submenus contain a variety of options that you can customize to your personal preferences. In addition to the various methods outlined earlier in this manual on how to access Settings, you can also enter shortcut command s+B9B7B8 to access it from anywhere inside the Braille Notetaker.

Among other things, use Settings to:

1. Set the time and date
2. Manage Bluetooth pairings
3. Adjust power management
4. Change braille tables
5. Reset factory default settings

10.1 Settings Sub Menu Items.

Within Settings, you will find the following sub menu items:

1. Alerts
2. Braille
3. Display Settings
4. Keyboard
5. Date and Time
6. Power Management
7. IO Profiles
8. Braille Display Mode
9. Bluetooth
10. System

Note:

1. The System sub menu is new with VarioUltra version 1.33. If you're using an older version of the software, you will not find this item in your Settings.
2. If you're ever unsure about any menu item, use command B9+B2B6 for Context Sensitive Help.

10.2 Settings > Alerts Menu.

The Alerts menu lets you select your preference for audible tones versus vibration for times when VarioUltra needs to communicate that something has happened, or is happening. For example, when a Bluetooth device connects to VarioUltra. An option to adjust the volume of audible tones is also available. Note that these are global in nature.

The Alerts Menu includes:

1. Volume
2. Vibration On/Off (Checkbox)
3. Ok
4. Cancel

10.2.1 Alerts > Volume.

The volume of beeps can be adjusted from 0 to 100. Tap the left or right edge of Navistick to decrease or increase the volume in increments of 10. Values lower than 0 or higher than 100 will result in an error message. To save your setting, scroll down 2 lines to the OK option, and select it to confirm and exit back to the Settings menu. To exit without making changes, scroll down 3 lines to CANCEL, and select it to cancel changes and return to the Settings menu.

10.2.2 Alerts > Vibration On/Off.

This is a checkbox item. Tap the left or right edge of Navistick to toggle the Vibration feature on and off. Note that if set to off, this feature disables the vibration functions including the silent alarm option. To save your setting, scroll down 2 lines to the OK option, and select it to confirm and exit back to the Settings menu. To exit without making changes, scroll down 3 lines to CANCEL, and select it to cancel changes and return to the Settings menu.

10.3 Settings > Braille Menu.

The Braille menu lets you change the way braille is managed and displayed.

The Braille menu includes:

1. Braille Presentation
2. Cursor
3. Default Braille Codes
4. Standard Braille Tables
5. Hide Braille Dots 7 and 8
6. Activate/Deactivate Master Switch Computer Braille

As with all menus in VarioUltra, you can scroll up and down with the Navistick or with display keys D1 and D3. To scroll left and right, again use the Navistick, or display buttons D2 and D5.

10.3.1 Braille > Braille Presentation.

The Braille Presentation menu contains options to set the left and right margins, choose whether the braille display should jump or drag when

the left and right margins are reached, and choose whether system messages are shown with Word Wrap.

These settings are valid both when editing texts in the word processor and in edit boxes. When reading (scrolling) with display buttons D2 or D5, these settings are ignored.

Note: The settings made in the Presentation dialog are ignored in the word processor when the “Show Whole Word” function has been activated.

10.3.1.1 Braille > Left/Right Margin.

Margin settings can be useful when creating or proofreading documents. VarioUltra allows you to set a left and/or a right margin via the Settings > Braille > Presentation menu. When you enter Presentation, the first option presented on the display is for the left margin; the right margin setting is one line down.

Whichever margin you wish to set, the process is the same. The braille display will show an edit box into which you type how many characters from the edge you wish the margin to be. The number you enter here represents the number of characters from the edge of the left or right side of the braille display that the margin will start from or end at.

10.3.1.2 Braille > Line Jump/Drag.

When the cursor moves next to a margin, VarioUltra will move the display left or right accordingly. If movement is set to jump, VarioUltra will scroll one line to the left or right. If you have a 20-cell model, your display will move left or right by 20-characters; naturally, the 40-cell model will move the display left or right by 40-characters. If movement is set to drag, VarioUltra scrolls the braille display one character to the left or right in place, with the cursor remaining at the respective margin.

To toggle between the two modes, go to Settings > Braille > Presentation > Jump. If the checkbox is checked, the default Jump mode is set.

Uncheck the box by scrolling to the right with the Navistick, or by pressing any cursor routing button. The process is the same to check the box again.

10.3.1.3 Braille > Show Messages With/Without Word Wrap.

This option is self-explanatory. When selected from the menus, it presents a single line with a checkbox. If the box is checked, messages will be displayed with word wrap on. Uncheck the box and words may be split at the end of a line.

Note: this mostly affects the VarioUltra 20 because most messages fit on a single line of the VarioUltra 40 display.

10.3.1.4 Braille > Dot Strength.

With the introduction of VarioUltra software version 1.4, a new feature is unlocked for some newer VarioUltra units built since late 2016.

With this horizontal list, you can choose between three dot strength options. The default is Medium.

Dot strength means that the dots of the braille cells appear softer or more pointed, depending on the option you choose. The choices affect the strength used to push up the braille dots.

10.3.2 Braille > Cursor menu.

The Cursor option contains settings relating to the appearance of the cursor in Edit Mode and Reading Mode. The types of cursor styles include dot 7, dots 7 and 8, or any other shape you choose. Finally, the cursor you choose can be static, inverted, or flashing at a user adjustable blink rate.

Reading Mode

Reading Mode applies whenever a write-protected file is opened.

Options you can change include:

1. Cursor shape. Enter the dot pattern you prefer to read when a cursor is displayed. Default is dot 8.
2. **** New ** with v1.4:** to hide the cursor, delete the content of this edit box with B9B7 and immediately confirm OK.
3. Inverted On/Off (Checkbox). When checked, the dot pattern selected for the cursor will be inverted. If you selected dots 78 for the cursor and then inverted it, dots 123456 would be shown instead.
4. Flashing (Checkbox). Off by default, check the box to toggle between a non-moving or a flashing cursor.
5. Flash Rate: Enter the flashrate in milliseconds. Enter a value between 200 and 2000. Only appears if Flashing checkbox is checked.
6. Ok. Select this option to save changes and exit to the Cursor menu.
7. Cancel. Select this option to abort changes and exit to the Cursor menu.

Edit Mode

Edit Mode applies whenever you open or create a document that is not write-protected, and inside any edit box. Options you can change include:

1. Cursor shape. Enter the dot pattern you prefer to read when a cursor is displayed. Default is dots 7 and 8.
2. Inverted On/Off (Checkbox). When checked, the dot pattern selected for the cursor will be inverted. If you selected dots 78 for the cursor and then inverted it, dots 123456 would be shown instead.

3. Flashing (Checkbox). Off by default, check the box to toggle between a non-moving or a flashing cursor.
4. Flash Rate: Enter the flashrate in milliseconds. Enter a value between 200 and 2000. Only appears if Flashing checkbox is checked.
5. Ok. Select this option to save changes and exit to the Cursor menu.
6. Cancel. Select this option to abort changes and exit to the Cursor menu.

Grade 2

Reading Mode applies when working within a grade 2 file. Options you can change include:

1. Cursor shape. Enter the dot pattern you prefer to read when a cursor is displayed. Default is dot 7 and 8.
2. Inverted On/Off (Checkbox). When checked, the dot pattern selected for the cursor will be inverted. If you selected dots 78 for the cursor and then inverted it, dots 123456 would be shown instead.
3. Flashing (Checkbox). Off by default, check the box to toggle between a non-moving or a flashing cursor.
4. Flash Rate: Enter the flashrate in milliseconds. Enter a value between 200 and 2000. Only appears if Flashing checkbox is checked.
5. Ok. Select this option to save changes and exit to the Cursor menu.
6. Cancel. Select this option to abort changes and exit to the Cursor menu.

10.3.3 Braille > Default Braille Codes.

Use this entry to switch between the various Braille Codes related to the language you are using. The option Computer braille is related to the selected Braille table. Once selected, menu items, dialogs, and system messages are then presented with the chosen braille code. Note that this setting is not related to the Set Braille Tables option for reading or writing in the word processor.

Here are the instructions for changing the braille codes:

1. Select main menu item Settings > Braille > Default Braille Codes to open the dialog.
2. Uncheck the check box "Master Switch Computer Braille".
3. Select the desired entries in the lists.

For Non-English versions of VarioUltra, the list "language" will be visible. This lets you select the language of the braille code.

In the list "reading default" you can select the braille code to be used for the braille presentation of menus, dialogs, and system messages.

In the list “writing default” you can select the braille code to be used when typing text into edit boxes.

With the check box “Display Text of Text Boxes in Reading Braille Code”, you can set the option so that the desired reading braille code is also used for the presentation of the entries of edit boxes and info fields.

Notes:

1. Note: Some edit boxes (i.e. path information, email addresses, passwords, etc.) continue to use computer braille. In these cases, a message appears letting you know.
2. Depending on the selected language, available options may vary. For example, grade 2 is not supported with all languages.
3. With the Master Switch function, you easily can switch between this braille code setting and the default computer braille setting.
4. It is possible to set several profiles using the Settings > IO Profiles covered in **section 10.8**. Once set, you can very quickly switch between different braille tables.

10.3.4 Braille > Standard Braille Tables

The braille you type and read is determined using braille tables. These tables define which braille dots are used to display a character in braille, and whether encoding of a character in Unicode is required, as it is for regular braille.

The 8-dots in a braille cell equate to 256 different combinations. Of the more than 65,000 characters that could be printed from a computer in UNICODE, only 256 can be assigned. This means that in different languages, braille is assigned differently to certain characters and letters.

For example:

1. English/American Computer Braille has other assignments which can be found in the braille tables US.b2u and US.u2b. US refers to the language US English, U refers to Unicode, and B refers to braille.
2. The Europa.b2u input table interprets input via the braille keyboard for German-European Braille, and writes the assigned UNICODE symbol.
3. The Europa.u2b table interprets the UNICODE for the character encoding and displays the assigned braille character on the braille display for German-European Braille.
4. The same is true for braille tables of other languages.

From main menu item Settings > Braille, select Standard Braille Tables to open the dialog. A list will first present the current input tables (i.e. US.b2u) and output tables (i.e. US.u2b). Move right / left with the Navistick to select the desired entry.

10.3.5 Braille > Hide and Display Braille Dots 7 and 8

From main menu item Settings > Braille, select Hide Braille Dots 7 and 8 to select whether braille dots 7 and 8 will be displayed or hidden.

If Hide is selected, braille dots 7 and 8 will not be displayed when reading on the braille display. This means that computer braille characters which contain dots 7 and 8 will not be displayed correctly and dot 8 will not appear when text is highlighted.

If Display is selected, braille dots 7 and 8 will be displayed whenever they appear in the text. As such, computer braille will be displayed correctly.

10.4 Settings > Display Settings

From main menu item Settings > Display Settings, you will find a variety of options relating to:

1. Presentation of menu shortcuts
2. Hotkeys
3. Templates
4. Password options
5. Messages

10.4.1 Display Settings > Menu Shortcut Commands

The Menu Shortcut Commands option allows you to determine whether braille and/or display shortcut commands are shown. When navigating through the menus, the shortcut commands for opening or executing a specific option are provided by default. These shortcuts are also provided in the context sensitive help.

**** New ** with v1.4:** when you disable the presentation of shortcuts here, they will no longer be mentioned in the context sensitive help.

There are two options that you can modify:

- _ Show Braille Key Shortcuts
- _ Show Display Key Shortcuts

Moving right or left with the Navistick will change the status of the checkbox. Pressing the cursor routing above the checkbox, or tapping the right thumb key B0 will also change the status of the checkbox.

10.4.2 Display Settings > Hotkeys.

The menus and dialogs in VarioUltra contain accelerators, or hotkeys, which allow you to quickly and easily reach the desired element or item within the dialog or menu. The default setting is to show the hotkey as a separate letter on the braille display. In the case of the Settings option, you should see the letters mi (for menu item), the letter s (representing the hotkey), and the name of the application, which in this case is settings.

The alternative is to highlight the hotkey instead. When this option is selected, a letter within the application name on the braille display will have dot 8 beneath it. This indicates which letter can be used as a hotkey. So in the case of Settings, the first letter S will include a dot 8.

To toggle the appearance of hotkeys, go to menu item Settings > Presentation and scroll down to Hotkeys. Here is what you will find there: The first line under Hotkeys will either show the default option “Show Braille Hotkeys”, or it will show “Highlight Braille Accelerators”. Use the Navistick to toggle left or right between the two choices.

Scroll down a line to set an optional Prefix.

Scroll down a line to set an optional Suffix.

Scroll down to confirm with OK.

Scroll down to confirm with CANCEL.

10.4.3 Display Settings > Templates

The Templates option can be found under menu item Settings > Presentation. Templates allow you to configure the appearance of menu items, dialog controls, files, and folders. The different parts that VarioUltra displays are called segments. With templates, it is possible to change the position and order of these segments, and to configure settings individually or menu items, buttons, checkboxes, textboxes, list boxes, files, and folders. Changes are applied globally.

There are default settings for each element, and they define the position and order of the displayed segments, such as the label, hotkey, shortcut command, etc. You can change and save your own configuration if you wish. If necessary, you can restore the default configuration. Your individual configuration is saved in VarioUltra/USER/Controls.xml

The following subchapters introduce you to the different segment types, and provide instructions for adjusting the default templates for each. The process to alter the default configuration is the same for all segment types. The segments include:

1. Menu item (which appears by default as MI on the braille display)
2. Button
3. Checkbox
4. Textbox
5. Textbox Read Only
6. List Box
7. File
8. Folder

The settings dialog for each template contains the following controls:

1. Info field “braille”. This shows the selected segments (single element information) and their order for the braille presentation. To alter the selection or the order, open the assigned edit dialog.
2. Button “edit”. This opens a dialog to alter the selection and order of the segments, which are shown in the info field “braille”.
3. Button “set to default”. This returns the template settings back to default for just this control. It is not a global restore; changes made to other segments will not be affected.

The sub-dialog “edit” contains a variety of options, which are listed below. Note that the presented options may differ based on previously made selections:

1. List “items”. This shows the segments that are selected for the desired setting. (Same segments as shown in the info field of the previous dialog.) The number in front shows the position of the segment.
2. Select in the list by moving the desired item left or right. Press S3 briefly to open a command menu with functions to alter the segments position, and to show or hide a segment.
3. Edit box “text”. Enter the name of the segment, i.e. the abbreviation “MI” for menu item in the braille presentation. Enter a space after the name, thus separating the segment.
4. Edit box “prefix”. Enter a character or string. This will be displayed directly in front of the segment itself. This will indicate the entry or provide additional information in braille. If you define the same character for prefix and suffix the segment will be displayed between these characters.
5. Edit box “suffix”. Enter a character or string. This will be displayed directly after the segment itself. This will indicate the entry or provide additional information in braille. If you define the same character for prefix and suffix the segment will be displayed between these characters.

Within the edit dialog you can open the command menu by pressing system key S3 briefly. In this command menu, you find the following functions:

1. Move left: Moves the selected list item one position to the left, thus changing the position of the segment.
2. Move right: Moves the selected list item one position to the right, thus changing the position of the segment.
3. Beginning: Moves the selected list item to the first position, thus changing the position of the segment.
4. End: Moves the selected list item to the last position shown, thus changing the position of the segment.

5. Hide this element: Removes the position number of the selected list item thus making the segment invisible. Moves the list item to the end of the list.
6. Show this element: Gives the selected list item the next available position number, thus making the segment visible.
7. Insert text element: creates a new list item as new segment to insert text.
8. Set to default: Resets all list elements and position numbers to their default value.

10.4.3.1 Templates > Menu Item

You can configure the following segments for the presentation of menu items. The segments of the default settings have the following position number:

1 MI, 2 <Hotkey>, 3 <Label>, 4 <Status>, 5 <Shortcut>, <Menuname>

The segments, which are inserted between less than and greater than symbols < > are placeholders for the appropriate segment name. Prefix and suffix characters are shown in the appropriate segment name.

Segments and their meaning:

1. <Status>: Information about submenus.
2. <Menuname>: If you go down to sub menu levels in VarioUltra, this segment will tell you the name of the higher-level menu, or the menu above where you are. For example, if you're in the Templates menu, Menuname would be displayed as Settings.

Example configuration:

For the braille presentation, we want to display M instead of MI. To make this change we would do the following:

1. Open Settings > Presentation > Templates > Menu item.
2. In the dialog, select info field "braille" and select the assigned button "edit".
3. In the list "items" select the entry "1 MI".
4. In the dialog textbox you will see MI displayed. Edit the text so that the letter M is displayed, followed by a single space.
5. Confirm and close all dialogs with "OK".

10.4.3.2 Templates > Button

You can configure the following segments for the presentation of buttons in dialogs. The segments of the default settings have the following position number:

1 CB, 2 <Hotkey>, 3 <Label>

CB stands for “Confirmation Button” and refers to words such as OK, Cancel, Yes, and No, that appear in dialogs in VarioUltra.

10.4.3.3 Templates > Checkbox

You can configure the following segments for the presentation of checkboxes in dialogs. The segments of the default settings have the following position number:

1 CHK, 2 <Status>, 3 <Hotkey>, 4 <Label>

Note that <Status> refers to information that is checked or unchecked.

10.4.3.4 Templates > Textbox

You can configure the following segments for the presentation of edit boxes in dialogs. The segments of the default settings have the following position number:

1 EB, 2 <Hotkey>, 3 <Label>

Note: For braille presentation, the segment <contents> cannot be repositioned or configured. It is always on the last position.

Example configuration:

For the braille presentation, we want hotkeys to be hidden. To make this change we would do the following:

1. Open Settings > Presentation > Templates > text box.
2. In the dialog go to info field “braille” and select the assigned button “edit”.
3. In the list “items” select the entry <hotkey>, which has no position number.
4. Open the command menu by pressing S3 briefly and select “hide this element”.
5. You are back in the list “items” and the entry <accelerator> has no longer a position number and stands at the end of the list. This setting is valid only for edit boxes (no info fields)
6. Confirm and close all dialogs with “OK”.

Remember: The hotkey is shown as single character when visible, or as a highlighted character (with dot 8) when hidden. Please refer to section 10.3.2 Hotkeys for detailed instructions about this option.

10.4.3.5 Templates > Textbox Read Only

You can configure the following segments for the presentation of info fields (textboxes read only) in dialogs. The segments of the default settings have a position number.

1 IF, 2 <Hotkey>, 3 <Label>

Note that the segment <contents> cannot be repositioned or configured. It is always on the last position.

10.4.3.6 Templates > List Box

You can configure the following segments for the presentation of list boxes in dialogs. The segments of the default settings have a position number.

1 LI, 2 <content>, 3 <Label> 4 <Accelerator>

10.4.3.7 Templates > File

You can configure the following segments for the presentation of files in file and folder lists. The segments of the default settings have a position number.

1 LI, 2 <text>, 3 <content>, 4 <size>, 5 <date>, 6 <path> (with “path:” as prefix), 7 <Label>, 8 <Accelerator>

Example configuration:

1. For the braille presentation, we want segment 1 to display “Fi” instead of “Li”. To make this change we would do the following:
2. Open Settings > Presentation > Templates > file.
3. In the dialog go to info field “braille” and select the button “edit”.
4. In the list “items” select the entry “LI”.
5. In the dialog the edit box “text” presents “LI”. Edit this text to display “Fi” and add a single space.
6. Confirm and close all dialogs with “OK”.
7. You are placed back and the info field “Braille” and the entry for this segment has changed.
8. Confirm and close all dialogs with “OK”.

10.4.3.8 Templates > Folder.

You can configure the following segments for the presentation of folders in file and folder lists. The segments of the default settings have a position number.

1 LI, 2 +, 3 <content>, 4 <date>, 5 <Label>, 6 <Accelerator>, <size>, <path>

Note that if the <size> segment is selected for the presentation, the folder size is calculated by browsing the files and folders list. Depending on how many files or sub folders exist, this may take some time.

Example configuration:

For the braille presentation, want the first segment to show “Fo” instead of “Li”, and for the second segment “+” to be hidden. To make this change we would do the following:

1. Open Settings > Presentation > Templates > folder.

2. In the dialog go to info field “braille” and select the button “edit”.
3. In the list “items” select the entry “LI”.
4. In the dialog textbox, edit the entry “LI ” so that it displays “Fo”, followed by a single space.
5. Confirm and close all dialogs with “OK”.
6. You are placed back and the info field “braille” and the entry for this segment has changed.
7. Open the “edit” dialog again, and this time select the segment entry “+”.
8. Delete the “+” In the edit box “text” and confirm with “OK”.
9. Confirm and close all dialogs with “OK”.

10.4.4 Display Settings > Password Options.

For added security, passwords are presented in hidden mode by default. In this mode, all characters are shown as asterisks (*). This mode does not allow you to confirm that the password has been entered correctly. If you would prefer that passwords are shown on the braille display as you enter them, go to Settings > Presentation > Password Options to deactivate the default hidden mode for the password presentation. Passwords will then be shown on the braille display until such time that you return to Password Options and select the hidden mode again.

10.4.5 Display Settings > Messages.

VarioUltra presents messages at different times to provide hints or warnings. Hint messages will contain the letter “h” on the first module; warning messages contain the letter “w”.

Please note the following:

1. Warning messages must be confirmed by pressing any routing key, other than the one for cell number one. An example might be that battery power is low.
2. Hint messages disappear automatically after 5 seconds by default. An example might be that Bluetooth is being activated.
3. If you need more time to read hints, you can freeze the message by pressing the first routing key. Thereafter, a frozen hint message will only clear after you confirm by pressing any cursor routing key, except for the first one.
4. If you do not want to wait the 5 seconds for a hint to disappear, press any cursor routing key except the first one.

If you go to Settings > Display Settings > Messages you will find controls to enable and disable hint messages, deactivate the automatic

disappearance after 5 seconds, or to change the amount of the time until the message disappears.

10.5 Settings > Keyboard.

The Settings > Keyboard menu is where you can change the way certain keys function inside VarioUltra's word processor and edit boxes. It's also where you can adjust settings relating to the Auto Scroll feature and the Key Mapping feature.

10.5.1 Keyboard > B7 Key.

By default, braille key B7 functions as a backspace key. When pressed in the word processor or in an edit box, the cursor moves one character to the left, deleting that character in the process.

To input braille dot 7 as its own character, this check box must be deactivated. When activated, you will not be able to backspace or delete using the B7 key.

10.5.2 Keyboard > B8 Key.

By default, braille key B8 functions as a carriage return key. When pressed in the word processor, a line break will be inserted, and the cursor will be positioned at cell 1 on this new line.

To input braille dot 8 instead, this check box must be deactivated. When activated, you will not be able to enter a carriage return using the B8 key.

10.5.3 Keyboard > Double Stroke.

The "Double Stroke" checkbox activates or deactivates the double stroke function.

When activated, a space will automatically be inserted at the end of a word whenever you press the space bar together with the last character input.

If the word you're typing is VisioBraille, you type letters B A U as normal, but when you type the letter M, you will press the space bar along with braille keys B1B3B4. This will insert a letter M, and a space.

10.5.4 Keyboard > One Hand Mode.

One Hand mode allows the input of text and commands via the braille keyboard, using just one half of the keyboard.

Activating and Deactivating the One-Hand Mode

Under Settings > Keyboard, check the check box "One-hand mode". A new button "one hand settings" becomes visible. Confirm this button to open the dialog with several controls and the options if you want to use a right hand or a left-hand mode. In the one hand settings, you can assign the keys. See information below. The last entries are two buttons to activate either the right-hand mode or the left-hand mode.

Note: As soon as you quit the dialog with OK your one-hand settings are activated and the braille keyboard does no longer react as before.

To deactivate the One-Hand mode uncheck the One Hand Mode check box under Settings > Keyboard.

How the One-Hand Mode works

The functionality of the 10 braille keys are divided into 5 "left-side" and 5 "right-side" functions. You must first press the keys, which create the left part of the character, and then the keys which create the right part of the character.

You can execute the following functions:

1. 5 keys are needed to input the "left" and "right" braille dots.
2. 1 key is used for entering a "blank" key stroke (no left" or no "right" dots)
3. The free other 4 keys can be used for the following functions:
 - a. Additional keys to enter a braille dot. (If necessary for ergonomic reasons)
 - b. "Collecting key": When you press and hold this key, you can press the single keys of the dots one after another. They are interpreted as if they were pressed together. The collecting key himself does not cause an input.
 - c. "Macro": this key is a combination of several Macro keys that can create a braille figure. The user can define which braille figure will be created, when pressing the macro key(s). A maximum of 4 macro keys are possible and this leads to maximum of 15 macro combinations.
 - d. "ignore": this key will not be interpreted.
 - e. Timeout for maximum time: If you press a "left" dot combination without following with a "right" part, then the key input will be ignored after the "Maximum time" and an error sound is emitted. Predefined default is 2 Seconds.
 - f. "empty column": To raise up the input of characters, which have no dots on the "right" part, you can press simultaneously the "empty column" key together with the left dots.
 - g. Double stroke: this software function can be used in the same way and increases the input of blanks.

Example with activated Right hand mode:

B4 is used to enter "B1, B4"

B5 is used to enter "B2, B5"

B6 is used to enter "B3, B6"

B8 is used to enter "B7, B8"

B0 is used to enter "B9, B0"

B9 is used as key "empty column"

B7 is used as key "collect key"

B1,2,3 can be defined as Macro keys

Macros: all Macros are defined in one single String. Single Macros are separated by comma ",".

- Example: B23=B0 means, that if you press B2 and B3 simultaneously together, you cause the input of B0 (space).
- Specification of a Macro:
- <List of input key number>
- <List of created braille dots>
- All other characters are ignored.

The One-Hand mode influences only the input of braille dots. You can enter all kinds of braille combinations. The One-Hand mode is not valid, if VarioUltra is connected as a braille display with braille keyboard to other devices.

Some Experiences when the right-hand mode is activated:

- Delete command: You must simultaneously press B9B8 to backspace-delete the character in a text. Or press B8 key followed by B9 key. This achieves the same result as pressing the B7 key on its own, in regular keyboard mode.
- Space command: You must press first B9 key followed by B0 key to enter the space in a text. This achieves the same result as pressing the B0 key on its own, in regular keyboard mode.
- Confirm command: You must press first B0 key followed by B9 key to confirm a button, menu item etc. This has the same result as pressing the B9 key, in regular keyboard mode.
- Delete current character: You must press first the keys B0, B4, B8 followed by press of B4 key. This has the same result as command B1B4B7B9, in regular keyboard mode.
- Line feed: You must press first B9 key followed by B8 key. This achieves the same result as pressing B8 on its own, in regular keyboard mode.

Example 1: to enter the word "hello":

1. Enter letter h by pressing B4, B5 keys followed by B5 key.
2. Enter letter e by pressing B4 key followed by B5 key.
3. Enter letter l by pressing B4, B5, B6 keys followed by B9 key (empty column because the letter uses dots of only the left braille cell.)
4. Enter letter o by pressing B4, B6 keys followed by B5 key.
5. Enter a space by pressing B9 key followed by B0 key.

Example 2: To open the version information dialog with Command v+B7B8B9B0:

1. Enter the left column of the dot pattern = Press B4, B5, B6, B8, B0 keys.
2. Followed by the right column of the dot pattern = press B6, B8, B0 keys.

10.5.5 Keyboard > Key Mapping

A factory default in VarioUltra is that display buttons D2 and D5 are used to pan the braille display left and right. For those braille readers who are, for example, predominantly right-hand braille readers, their preference might be to switch the function of D2 and D5. When reversed, D2 is used to pan forward, and D5 is used to pan backwards. This is achieved using Key Mapping.

1. With Key Mapping, you can select different predefined settings, such as a setting for swapping the general function of display keys D2 and D5.
2. The “standard” entry is factory default.
3. Use the Navistick to move left and right and select an item. Note that each item label starts with the letters L I, which stands for ‘*list item*’.
4. Use shortcut B9+B1B2B3B7 to move to beginning of list.
5. Use shortcut B9+B4B5B6B8 to move to end of list.
6. Moving from left to right, the choices are:
 - a. Standard, 1/6.
 - b. D2 and D5 Exchanged if Pressed Alone, 2/6.
 - c. D Keys Swapped Left Right, 3/6.
 - d. D2 and D5 Exchanged, L and R Swapped, 4/6.
 - e. L and R Swapped, 5/6.
 - f. Both L and R Activate Right, 6/6.

Note that L and R refer to the left (B9) and right (B0) thumb keys respectively.

10.5.6 Keyboard > Key Debounce

Some people type braille very fast. Some of those people type faster than most braille typists on the planet. For this select group of people, there may be occasions when their fast typing may result in some keystrokes getting lost during typing.

Key Debounce may be able to help. The default value is 50 on a scale of 10 to 100. Lower numbers can help the superfast braille typists out there.

10.5.7 Keyboard > Auto Repeat for Navistick

The Auto Repeat function for Navistick check box provides an automatic repeat function whenever the Navistick is held down to move left, right, up, or down.

When this option is selected, edit boxes appear in the dialog that allow you to specify the initial delay and repeat rate, or number of strokes per second.

10.5.8 Keyboard > Auto Scroll

The Auto Scroll function is used to automatically advance the braille display, at a user-defined rate of speed. When activated, you no longer need to press display buttons to move the display.

When this option is selected, you get an Edit box "Interval" where you enter the time in milliseconds for the automatic press on D5.

To start auto scroll while reading a document, press D2 or D5 for 5 seconds. To stop the function, press D2 or D5 for 5 seconds again.

If the auto scrolling is too slow or too fast, you can increase or decrease the speed while reading. Double tap D2 to decrease the speed by 100 milliseconds. Double tap D5 to increase the speed by 100 milliseconds.

10.6 Settings > Date and Time

In Braille Notetaker mode, you can check the current time and date by tapping system key S4 once or twice respectively. Changing Date and Time settings is done inside menu item Settings > Date and Time.

Things that can be changed include the date, time, date and time format, and the time zone. There are OK and Cancel buttons, that you use to accept changes you have made, or not.

It is necessary to use US English Computer Braille when entering date and time information, otherwise your changes will not take effect.

For most people, entering command B9 + D1 will switch VarioUltra to Computer Braille. Enter command B9 + D2 afterwards to switch back to the braille you were using before. For more information, refer to section 3.4.

10.6.1 Date and Time > Date.

From within the Settings > Date and Time, the first option on the list is Date. You will find a date on this line that follows the format MM/DD/YYYY.

It is necessary to use US English Computer Braille when entering date and time information, otherwise your changes will not take effect. Enter command B9 + D1 for Computer Braille. Enter command B9 + D2 afterwards to switch back to the braille you were using before. For more information, refer to section 3.4.

To make changes, use the cursor routing buttons to position the cursor one character to the right of whatever section of the date you wish to change. If you wish to change the entire date, position the cursor to the

right of the 4-digit year, and backspace with braille key B7 until the date is cleared. Then type the new date following the MM/DD/YYYY format: 2-digit month, slash, 2-digit day, slash, 4-digit year. Confirm your changes by pressing the left thumb key, B9.

10.6.2 Date and Time > Time.

VarioUltra may not ship with the time and date configured for your time zone.

It is necessary to use US English Computer Braille when entering date and time information, otherwise your changes will not take effect. Enter command B9 + D1 for Computer Braille. Enter command B9 + D2 afterwards to switch back to the braille you were using before. For more information, refer to section 3.4.

Here are the instructions for changing the time and date.

1. Go to menu item Settings > Date and Time.
2. The first line shows the current date. To change the date, press the cursor routing button to the right of the number you wish to change and then press the B7 key to backspace. Press B7 as many times as you need to delete the number or numbers you plan to change.
3. The date format is day/month/year, with the year written as a 4-digit year.
4. If you do not need to make other changes, tapping the B9 key after making your changes will return you to the Settings menu. If you wish to make other changes, continue with these instructions.
5. The second option on the list is Time. You will find a time on this line that follows the format HH:MM:SS. To make changes, use the cursor routing buttons to position the cursor one character to the right of whatever section of the time you wish to change. If you wish to change the entire time, position the cursor to the right of the 2-digit seconds, and backspace with braille key B7 until the time is cleared.
6. Now type the new time following the HH:MM:SS format: 2-digit hour, colon, 2-digit minutes, colon, 2-digit seconds.
7. If you do not need to make other changes, tapping the B9 key after making your changes will return you to the Settings menu. If you wish to make other changes, continue with these instructions.

10.6.3 Date and Time > Date and Time Format.

To change the presentation format of time and date, select the appropriate option among the different entries by scrolling the Navistick up or down. You can change the order of the placeholders, or enter other characters to separate the placeholders.

Please note the case sensitivity of the placeholders: d = day, M = month, y = year, H = hour, m = minutes, and s = seconds.

The short date and time format is used in the edit boxes of the various applications. The long date and time format is used when consulting the time or date with system key S4, and the appropriate checkboxes are checked.

10.6.4 Date and Time > Time Zone.

Believe it or not, there are 106 different time zones in the world. Here are some of the more commonly used:

- Hawaii, 3 of 106
- Alaska, 4 of 106
- Pacific, 6 of 106
- Arizona, 7 of 106
- Mountain, 9 of 106
- Central, 11 of 106
- Eastern, 16 of 106
- GMT, 36 of 106
- Germany, 38 of 106

Scroll left or right with Navistick. Press in on Navistick to confirm your choice, and return to the Date and Time menu.

10.7 Settings > Power Management.

Choose this menu to adjust power management settings, and check battery status.

10.7.1 Power Management > Auto Suspend.

With “Auto Suspend”, VarioUltra switches off automatically after a predetermined length of inactivity. For example, if you’re in Notetaker mode and no keys are pressed for some time. The default delay is set to 10 minutes.

- If VarioUltra is in Braille Display mode, and actively connected to a device, Auto Suspend will not occur.
- If VarioUltra is in Braille Notetaker mode, Auto Suspend will always work, even when a device is connected in the background in Braille Display mode.

The settings for Auto Suspend allow you to:

1. Switch the Auto Suspend feature on or off. It is on by default.
2. Set the time delay. The default is 10 minutes.
3. Determine if a warning signal is provided just prior to the device shutting off.

4. When “Auto Suspend After” is checked, the “Minute” option appears on the next line down. The default value is 10. Enter a value 1 minute or greater.

10.7.2 Power Management > Battery.

To access information on the battery status, go to Settings > Power > Battery. The dialog will display the battery level and the battery capacity. For service reasons, this dialog also provides protocols for the charging and discharging cycles.

1. The battery level is displayed in percentage terms. The value drops when in use and rises while being charged. The information provided here is the same as that provided when you double tap system key S3 (Braille Notetaker mode) or pressing S2+B9 (Braille Display mode).
2. The capacity is also given in mAh, and provides information on the battery capacity. It is not a constant value as the capacity changes according to temperature and the age of the battery.
3. The “Write Protocol File” checkbox allows the behavior of the battery to be monitored during the charging and discharging cycles, and allows the file to be written as an “accuolog.txt” file. This should only be done when consulting with VISIOBRAILLE service technicians on servicing issues.

The battery of VarioUltra passes 2 limits during charging and discharging.

1. From a fully charged battery the first limit is announced at 0%, and the device turns off. At this point you should connect to a power supply to switch on and use VarioUltra.
2. If you ignore this, the battery passes the 2nd limit, which means even when you connect to power supply you cannot immediately switch on the device.

If VarioUltra is in use while connected to a USB power source, or USB device, trickle charging of the battery will take place. Note that trickle charging is slower to charge the battery than if VarioUltra were switched off, and charging.

When VarioUltra is switched off and charging, progress of the charging process will be indicated on the braille display. As charging takes place, cells will gradually fill in from left to right, with the next empty cell displaying a flashing cursor, using dots 7 and 8.

- If all cells on your VarioUltra braille display are filled in, showing dots 1 through 8 on every cell, this means your device is 100% charged.

- If half the braille line is filled (from cell 1 to the middle), your device is approximately 50% charged.
- Use best judgement to gauge the approximate charge percentage based on the number of cells displayed.
- If there are less than 5 cells filled in, VarioUltra will not switch on. Wait a few minutes for the minimum charge level to be reached.

To check battery status while using VarioUltra:

1. Braille Notetaker mode: press S3 two times.
2. Braille Display mode: press S2 + B9.

Important:

1. When charging and discharging between battery full and the first limit, the values of 0% and 100% are adjust automatically.
2. If you ignore the warning to connect VarioUltra to power and pass the 2nd limit, the adjustment of 0% and 100% are lost. When this happens, checking battery level will result in “approx” being displayed before the percentage.
 - a. It is necessary to charge, discharge, and charge the battery to clear this.

Charging via PC USB connection only provides 100 mA, whereas charging via a USB adaptor provides 500 to 780 mA. Thus, the charging time is not a constant value. Please use USB adaptors with 5V and up to 2000 mA.

VarioUltra should provide between 8 and 12 hours of use on a full charge. If you experience less than this range, it could be because your battery's 0% and 100% values have been lost. Contact VISIOBRILLE technical support in such cases.

10.8 Settings > IO Profiles.

VarioUltra allows you to store up to 8 different user profiles, and to switch between them. This is useful for times when you want to work with different braille settings, including English with different contracted braille, versus any of the other supported languages.

**** New ** with v1.4:**

The default profile is Profile #1, which uses US English Contracted Braille. If it is not already loaded, you can enable this profile by pressing S1 + B1. Thereafter, use the Master Switch feature to switch between Computer Braille (B9 + D1) and US English Contracted Braille (B9 + D2). A new Profile #2 lets you use UEB instead of US English Contracted Braille. Load Profile #2 with S1+B2. Thereafter, use the Master Switch

feature to switch between Computer Braille (B9 + D1) and UEB (B9 + D2).

The controls found within the IO Profiles dialog include:

1. List Profiles: this shows the numbers and names of the individual profiles. You can load, delete, edit, or rename the selected profile.
2. **** New ** with v1.4:** Save Current Settings. With this option, you save the enabled settings you have selected or changed in menu Settings > Braille > Default Braille Codes, Settings > Braille > Braille Tables, and in word processor command menu Tools > Grade 2 > Settings.
3. Rename: this option opens a dialog with options where you can alter the profile settings, and is only visible with one or more profiles exist.
4. Delete: this option deletes the selected profile, and is only visible when one or more profiles exist.
5. Use Selected Profile: this option loads the settings which are defined within the selected profile. It is only visible when one or more profiles exist.
6. Cancel: closes the dialog.

10.8.1 IO Profiles > Loading a Profile.

If no profiles have been created, the horizontal list is blank and only presents the number 1 to 8 of potential profiles.

**** New ** with v1.4:** If profiles exist, their names and assigned profile number are shown in the list. Use the Navistick to move through the list and select the profile you wish to use.

If you know the number of the desired profile, use the shortcut command S1+B1 through B8 for the corresponding profile. For example, to load profile #2, you would press S1+B2 simultaneously. A message will confirm that the profile has been loaded.

10.8.2 IO Profiles > Create and Save a New Profile.

**** New ** with v1.4:** think of the braille settings that you wish to save as a profile, and then set the desired options.

1. Menu Settings > Braille > Default Braille Codes, i.e. “UEB grade 1” for reading and writing mode and Master Switch unchecked.
2. Menu Settings > Braille > Standard Braille Tables: Select the desired Braille Table which you want to use when Master Switch Computer Braille is enabled. i.e. TBFR2007 for French will allow to toggle between UEB grade 1 and French Computer Braille with the Master Switch option.
3. Word Processor, menu Tools > Grade 2 > Settings: i.e. again UEB grade 1 and check the options for typing and reading.
4. Open Menu Settings > IO Profiles.

- a. In the horizontal Profile list move to a free profile number, means that has no assigned profile name. In case you select an existing profile the settings of this old profile are overwritten by the new settings.
- b. Go down and confirm “Save Current Settings”
- c. A dialog opens and a edit box presents the predefined profile name “new profile”. Overwrite or alter this name to your need, i.e. “UEB with French” and confirm OK.
- d. Now the new profile appears in the profile list and the number in front indicates the assigned profile number.
- e. Close the dialog with CANCEL.

10.8.3 IO Profiles > Use Selected Profile.

**** New ** with v1.4:** Confirm this button to load the selected profile. You can load profiles via keyboard shortcuts, which are S1 + B1 through B8, depending upon the profile number.

10.9 Braille Display Mode Menu.

To use VarioUltra in Braille Display Mode you must slide the Device Mode switch toward you.

Settings relating to the use of VarioUltra as a braille display can be found in menu item Settings > Braille Display Mode, which you access in Braille Notetaker mode.

The menu contains options relating to connecting with devices. Options include:

1. Device Emulation
2. **** New ** with v1.4:** Enable Bluetooth Automatically
3. Vibrate on Device Connected
4. Show Message if Device Connected
5. **** New ** with v1.4:** Key Simulation Properties

10.9.1 Braille Display Mode > Device Emulation.

While most new devices and screen reading software now recognizes VarioUltra as a trusted and known device, some older technology and older versions of screen reading software may not recognize VarioUltra. If you're using technology or software that is affected in this manner, you may need to change the Device Emulation from VarioUltra, to another VISIOBRAILLE display such as Pronto or VarioConnect. This emulation mode lets you disguise VarioUltra a braille display that your older technology or software recognizes.

1. The default setting is 'VarioUltra 1/3 <Device Emulation>'. This setting works for most devices.
2. Use NaviStick to move to the right, and you will find:
 - a. VarioConnect 2/3 <Device Emulation>

b. Pronto 3/3 <Device Emulation>

3. For iOS devices running iOS 7 through iOS 8.2, select the Pronto emulation.

1. For Android devices, select the VarioConnect emulation.

2. **** New ** with v1.4:** if Braille Back and BRLTTY for Android version 5.2 or higher is installed, you can use the default VarioUltra emulation.

10.9.2 Braille Display Mode > Enable Bluetooth Automatically.

**** New ** with v1.4:** check the box for Enable Bluetooth Automatically, and each time you switch on VarioUltra, Bluetooth will be switched on automatically.

With VarioUltra v1.33 and older software versions, switching off the device results in Bluetooth being switched off. Bluetooth remains off until you switch it on again, which can be achieved in Braille Display mode by simply selecting a Bluetooth channel (S2+B4, for example), and in Braille Notetaker mode by checking the box in Settings > Bluetooth.

10.9.3 Braille Display Mode > Vibrate on Device Connected.

When a paired and trusted device is in range of VarioUltra, both devices should connect automatically. When this happens, the default setting is for VarioUltra vibrate when the connection is made. VarioUltra vibrates one, two, three, or four times, to indicate which of the four Bluetooth channels has a connection. The Vibrate on Device Connected option is a checkbox. Uncheck the box to stop the vibration from occurring. When vibration is off, you will need to manually check Bluetooth channels to see if a pair device has connected.

10.9.4 Braille Display Mode > Show Message if Device Connected.

When checked, VarioUltra will display a message if a device is connected. The message appears for 5 seconds.

10.9.5 Braille Display Mode > Key Simulation Properties.

**** New ** with v1.4:** you can select different settings for braille and HID key simulation and assign them each to a paired iOS or Android device. The settings are used automatically when you switch to the assigned Bluetooth channel of the connected device.

Instructions:

1. Open menu Settings > Braille Display Mode and move down to the list “Paired devices”.

2. This horizontal list presents the names of the paired Bluetooth devices. Behind the name, short information of the assigned Bluetooth channel and Braille and HID key simulation settings are shown.

3. Select the desired Bluetooth device with Navistick right / left.

4. Move down and confirm the button “Key Simulation Properties”.

5. A dialog opens. The first option presents the name of the chosen Bluetooth device. With the help of several list you can adjust the desired delay time for Braille key simulation and HID key simulation and select the HID table for the HID key simulation function.
6. Confirm OK to close the dialog and save the properties which are now assigned to the Bluetooth device.
7. You are back in the first dialog. In the list "Paired Devices" you find the assigned properties in short. (BTx, BRL xxms, HID xxms, HID table table.U2H)
8. Close with OK.

You can assign the following properties:

1. Delay of braille simulation (in ms) 30 – 100 (Default: 50 milliseconds)
2. HID table (U2H table contains specific language and Apple or Android keyboard layout information)
3. HID key delay (in ms) 30 – 100 (Default: 60 milliseconds)
4. As an overview, the parameters are shown in addition behind the device name in the list "paired device" in short form: (BRL xxms, HID xxms, HID table table.U2H)

Important:

Please follow the rules below, to ensure that the application of the connected device receives the characters correctly, which are generated by the HID key simulation and transferred via Bluetooth.

1. The app on the connected device must be in foreground and capable of receiving characters, i.e. edit box. (Same when using braille key simulation)
2. The HID table, which you select on VarioUltra in menu settings > braille display mode > key simulation must match to the connected device type (apple iOS or Android) and the used language (English, German etc.) Therefore, different tables are available and the file names give the relevant information. i.e. Apple_US.U2H when an iOS device is connected and the language on both devices is English.
3. The HID table must match to the used language setting of the connected device (English, German etc.) The language setting means the keyboard layout setting. Therefore, different tables are available and the file names give the relevant information. i.e. Apple_US.U2H or Android_US.U2H when the English keyboard layout is used.
4. If the language mismatch i.e. when you select Apple_US.U2H but your connected iOS device has French language and French keyboard layout enabled, the characters of the transferred text will be not correct.

5. Some Android devices differ between the keyboard layout of the software keyboard, means the virtually shown keyboard, and the keyboard layout of a hardware keyboard. For the HID key simulation feature the language setting of the hardware keyboard layout is relevant.
 6. The predefined HID delay of 60 milliseconds had best results in our experience with iOS and Android devices. With this default value, no characters get lost when the option of speech feedback is set to "characters" or "characters and words" in the appropriate screen reader settings of VoiceOver, TalkBack or VoiceView.
 7. If you set the speech feedback to "none" or "words" you can try a HID delay of 30 or 40 ms with iOS devices, and 40 or 50 ms with Android devices. But note, a decreased value increases the transfer speed but with the danger of losing single characters.
- Also, the capacity of the processor of your connected device is responsible for the transfer speed. If in doubt, set a value 10 ms higher.

10.10 Settings > Bluetooth Menu.

Menu item Settings >Bluetooth opens a dialog where you can adjust settings relating to Bluetooth connections, including pairing with other devices.

Options in the Settings > Bluetooth menu include:

1. Bluetooth On/Off (Checkbox): When checked, Bluetooth is activated. When unchecked, Bluetooth is off. If you're not actively connected with a device, switching off Bluetooth can lengthen the number of hours you will get from the battery.
2. Scan: only visible when Bluetooth is on. Scan initiates a scan of devices within range and presents them in a horizontal list after scanning is complete.
3. Device: a list of found Bluetooth devices.
 - a. "Trusted" indicates that pairing has already been established.
 - b. "In Range" indicates that you can start a pairing.
 - c. Pair: a button that starts the pairing process with the selected device.
4. Depending on the pairing process, you will get other messages asking you to enter a PIN code on the other device, or on VarioUltra.
5. The default PIN code is 1111 for most pairing processes.
6. Remove Device: a button that lets you unpair from a device. This option is only visible when at least one paired device is present in the device list.
7. Show Bluetooth Info: a button that opens a dialog with detailed information about the Bluetooth connection. You can change the Device

Bluetooth name if you wish. This is especially helpful in environments where more than one person owns/uses a VarioUltra.

Note: previously paired devices that are no longer in range may continue to appear in the scan results for Bluetooth devices. If you prefer not to see these devices shown, just scroll to the device name in the list, scroll down to the line below the name, and select the Remove Device option.

10.11 Settings > System Menu.

The System Menu contains the following options:

1. Update
2. Disk Cleanup
3. Reset Device

10.11.1 System > Update.

As explained earlier in this manual, updating of VarioUltra software was done by copying the file to a USB stick, connecting it to VarioUltra, and then entering an update command.

Newer versions of VarioUltra software can be achieved by copying the update file to VarioUltra's flash storage ('Flashdisk'), and then entering the update command.

As an alternative to entering the command, version 1.33 software and newer allow you to initiate the update through the Sytem > Update menu.

Remember:

It is always necessary to connect VarioUltra to power when updating. If your device is not connected to power, the update process will not start. If more than one update file is found, you will see a file name and then a number range. Tap B9 or press in on the Navistick to start the update process.

10.11.2 System > Disk Cleanup.

VarioUltra includes 32 GB of flash storage, which is generally enough for all users. If you ever find yourself running out of space, you can make room by removing some less necessary items, such as:

1. OS backups
2. Temporary files
3. Bookmarks and cursor positions

Check any or all checkbox options you find, and then navigate down to the "Cleanup Now" button. Tap B9 or press in on Navistick to start the process of erasing these things.

10.11.3 System > Reset Device.

If you ever change settings to the point that you do not remember how to return to factory settings, or perhaps you're using a borrowed unit and want to clean things up before returning it, follow these instructions to reset VarioUltra.

1. Reset User Settings to Default (Checkbox)
2. Remove All Bluetooth Pairings (Checkbox)
3. Choose the Reset User Settings to Default option to put all settings back to factory default.
4. Choose the Remove All Bluetooth Pairings option to do just that: remove all evidence of previous Bluetooth pairings.

10.12 EXIT SETTINGS

To exit Settings and return to the main menu, press and hold system key S3.

Chapter 11: Help Menu.

Help. The main menu hotkey is h. The global shortcut command is h+B7B8B9

VarioUltra includes a variety of Help options.

First, entering command B9+B2B6 will display context sensitive help for the menu item, application, or dialog box that is presently active on the braille display. Second, the Help Menu contains electronic copies of the VarioUltra User Guide, and the VarioUltra Quick Start Guide. Both files can be found inside the Help menu. Accessing the Help menu can be achieved by navigating to the Help option in the main menu, or use global command H + B7B8B9 from anywhere inside any braille notetaker application.

Selecting either the full VarioUltra User Guide or the VarioUltra Quick Start guide from inside the Help menu will open the file inside the Word Processor application.

In addition to the user documentation, the Help menu also contains an About section, which is where you can confirm the product serial number, and the currently installed software version.

11.1 Exit Help

To exit Help and return to the main menu, press and hold system key S3.

Chapter 12: Contact VISIOBRILLE

Thank you very much for being a VarioUltra customer. While our developers and designers are extremely talented, producing a device like VarioUltra does not happen by accident. We listen to our customers from around the world to make sure we develop products that truly make a difference for them. We find this feedback invaluable to our mission to produce only the very best products and solutions. If you have an idea for something you believe will make VarioUltra even better, please let us know.

If you encounter a problem with VarioUltra, or have a question not addressed in this user guide, please contact us.

VISIOBRAILLE GmbH
Oßmaritzer Str. 4c
D - 07749 Jena
Germany

Tel.: +49 (0) 3641/2816-0
Fax: +49 (0) 3641/2816-416
E-Mail: info@VisioBraille.com or info@varioultra.com
Web: www.VisioBraille.com www.varioultra.com

VISIOBRAILLE in Germany. To subscribe, send an email to info@visiobraille.com, with the word subscribe in the subject line.

Chapter 13: Acknowledgements

We know that not everyone will read this manual, and that only some will read all of it. Whichever reader of manuals you happen to be, please know that development of this manual would not have been possible without the attention to detail.

Thanks also to the many customers who have periodically emailed to let us know about spelling mistakes, grammatical errors, etc. We are indebted to all of you for helping us make this user manual the best it can be.

Chapter 14: Appendices

This section contains miscellaneous information relating to VarioUltra, including command lists for using VarioUltra with different screen readers.

14.1 VarioUltra iOS Commands

This section contains commands that may be entered on VarioUltra while connected to an iOS device, running VoiceOver. The VoiceOver action is written first, followed by the command that must be entered on VarioUltra.

A couple of things to know:

1. Like other VISIOBRILLE braille devices, VarioUltra supports the use of the display buttons (D buttons) to enter commands. So instead of entering Chord-H for the home screen, you could press D125.
2. Standard commands in the industry allow for Chord commands. This means that you press a space bar at the same time as a pattern of dots. So Chord-H simply means pressing a space bar and the dots for letter H on the braille keyboard.
3. The left and right thumb keys are named B9 and B0 respectively. It doesn't matter which one you press when entering Chord commands. As such, our commands will use the word 'Chord to mean either of the two space bars/thumb keys. It doesn't matter which one you use when in braille display mode.

- Double-tap selected item: Press cursor routing button above word, or press the Navistick
- Toggle expanded status description: Status router button
- Move to previous item: Chord B1 or Navistick left
- Move to next item: Chord B4 or Navistick right
- Move to previous item user rotor setting: Chord B3 or Navistick up
- Move to next item using rotor setting: Chord B6 or Navistick down
- Select the item under your finger: Press cursor routing button above word, or press the Navistick
- Home Button: Chord B125
- Back Button, if present: Chord B12
- Move to previous item: Chord B1
- Move to next item: Chord B4
- Move to previous item using rotor setting: Chord B3
- Move to next item using rotor setting: Chord B6
- Select previous rotor setting: Chord B23
- Select next rotor setting: Chord B56
- Move to first element: Chord B123
- Move to last element: Chord B456
- Read page starting at selected item: Chord B1235
- Read page starting from top: Chord B2456
- Go to Status Bar: Chord B234
- Volume Up button: Chord B345
- Volume Down button: Chord B126
- Eject key: Chord B146
- Delete Key: Chord B145
- Return key: Chord B15
- Tab key: Chord B2345
- Toggle Screen Curtain On and Off: Chord B123456
- Pause or continue speech: Chord B1234
- Toggle Speech On and Off: Chord B134
- Scroll Left One Page: Chord B246
- Scroll Right One Page: Chord B135
- Scroll Up One Page: Chord B3456
- Scroll Down One Page: Chord B1456
- Select Text: Chord B356

- Deselect Text: Chord B236
- Pan braille to the left: Chord B2
- Pan braille to the right: Chord B5
- Toggle Announcement History: Chord B1345
- Go to Navigation Center: Chord B46
- Go to Control Center: Chord B25
- Speak page number or rows being displayed: Chord B34
- Switch between braille codes for reading: Chord B1245
- Switch between braille codes for writing: Chord B236
- Enter App Switcher: Chord B125, 2 times
- Close App from App Switcher (3-finger swipe up): Chord B1456
- Open Spotlight Search (3-finger swipe down): Chord B3456
- Two-finger Double Tap: Chord B156
- Double-Tap and Hold: Chord B3678

14.2 VarioUltra BrailleBack Commands

This section contains an updated and revised list of the VarioUltra commands currently available to users of BrailleBack. The list uses VarioUltra labels for keys. Note that BrailleBack uses its own terminology for the various keys found on the VarioUltra display.

BrailleBack Term

For example:

VarioUltra Term

B1 to B8	Dot1 to Dot8
B9 and B0	Space ₁
Navistick	Joystick ₂
D2	Advance Left
D5	Advance right
D1, D3, D4, and D6	Not mentioned ₃

In BrailleBack, B9 and B0 have the same functionality. Navistick press and Joystick Center are the same thing. Although neither the VarioUltra Manual nor BrailleBack Help mention any functionality for D1, D3, D4, or D6, they work as alternative navigation commands. See the notes in the Navigation Commands listed below.

- Move to previous item: Navistick Left. (Note: D3 also performs this action.)
- Move to next item: Navistick Right. (Note: D6 also performs this action.)
- Move to previous line: Navistick Up. (Note: D1 also performs this action.)

- Move to next line: Navistick Down. (Note: D4 also performs this action.)
- Pan right: D5.
- Pan left: D2.
- Scroll forward: B6 + Navistick Down. (Note: Section 15.2 lists B9 + Navistick Down.)
- Scroll backward: B6 + Navistick Up. (Note: Section 15.2 lists B9 + Navistick Up.)
- Top of screen: B7 + Navistick Up.
- Bottom of screen: B7 + Navistick Down.
- Reminder: If the functions of D1 through D6 have been reversed, BrailleBack commands must be altered accordingly.
- Double-tap selected item: Navistick Press
Double-tap item under finger: Press cursor routing key above word.
- Long press current item: B6 + Navistick Press. (Note: Section 15.2 lists B9 + Navistick press.)
- Long press item under finger: Long press cursor routing key above word,
- Back Button: B9+B1+B2. (Note: Section 15.2 calls this item the 'Backspace key'. Activating this command moves the user up one screen. For example: From an open email message to the Inbox.)
- Home Button: B9+B1+B2+B5.
- Open Recent Apps: B9+B1+B2+B3+B5.
- Open Notification Panel: B9+B1+B3+B4+B5.
- Toggle on-screen search: B9+B3+B4.
- Toggle Labeling Menu: B9+B7+B1+B3+B4.
- BrailleBack Help: B9+B1+B2+B3.
- Enter key (While editing text): B9+B8.
- Backspace (While editing text): B9+B7.
- Next section: B9+B2+B3+B4.
- Previous section: B9+B7+B2+B3+B4.
- Next Link/Control/Form Field: B9+B1+B4.
- Previous Link/Control/Form Field, B9+B7+B1+B4.
- Next List: B9+B2+B4.
- Previous List: B9+B7+B2+B4.

Our sincere thanks to VarioUltra user Suzy Triton for her assistance updating the BrailleBack command list section of the VarioUltra User Guide.

14.3 VarioUltra Commands

This section contains a summary of default VarioUltra commands. The action is listed first, followed by the command that must be entered on VarioUltra. Note that if you use Key Mapping to change the function of thumb keys or assignment of display buttons D2 and D5, your command

structure will vary from what is written below.

- Toggles between Sleep Mode (off) and Active Mode (on): Power button tap.
- Reboot VarioUltra: Hold Power button for 15 to 20 seconds.
- Switch off VarioUltra: Press and hold S4, press and release power button.
- Braille Notetaker mode: Slide Display Mode switch away from you, toward back of device.
- Braille Display mode: Slide Display Mode toward you/front of device.
- Go to Main Menu: Long press of S3.
- Switch to Computer Braille: B9+D1.
- Switch to Contracted Braille: B9+D2.
- Display Battery status in Braille Notetaker mode: Two taps of S3.
- Display Battery status in Braille Display mode: S2+B9.
- Stop all applications: B2B5D1D4.
- Initiate Update: B7B8D3D6.
- Help: h+B7B8B9.
- Context sensitive help: B2B6B9.
- Select USB channel: Press and hold S2, tap B1.
- Select Bluetooth channel 1: Press and hold S2, tap B4.
- Select Bluetooth channel 2: Press and hold S2, tap B5.
- Select Bluetooth channel 3: Press and hold S2, tap B6.
- Select Bluetooth channel 4: Press and hold S2, tap B8.
- Select an option, file, or menu item: Cursor Routing Button, or tap B9.
- Move through horizontal list of options: Navistick left or right.
- Move up and down in vertical list or menu: Navistick up or down.
- From within a menu, entering a hotkey will open that application or select the menu item: Type hotkey letter, such as 'w' for word processor.
- Open Word Processor: Long Press S1, or 'w' from within Main Menu, or global command w+B7B8B9 from anywhere.
- Open PDF Viewer: 'p' from within Main Menu, or global command p+B7B8B9 from anywhere.
- Open Excel Viewer: 'x' from within Main Menu, or global command x+B7B8B9 from anywhere.
- Open Calculator: 'c' from within Main Menu, or global command c+B7B8B9 from anywhere.
- Open Timers and Alarms: 't' from within Main Menu, or global command t+B7B8B9 from anywhere.
- Open File Manager: 'f' from within Main Menu, or global command f+B7B8B9 from anywhere.

- Open Settings: 's' from within Main Menu, or global command s+B7B8B9 from anywhere.
- Open Help: 'h' from within Main Menu, or global command h+B7B8B9 from anywhere.
- Close file: B9+B1B3B6B8.
- Space: B0.
- Backspace B7.
- New Line: B8.
- Move cursor to beginning of file: B9+B1B2B3.
- Move cursor to end of file: B9+B4B5B6.
- Move the display left: D2.
- Move the display right: D5.
- Next character: Navistick right, or B9+B4.
- Previous character: Navistick left, or B9+B1.
- Next word: B9+B5.
- Previous word: B9+B2.
- Next sentence: B9+B6.
- Previous sentence: B9+B3.
- Next Line: Navistick down, or D3, or B9+B4B5.
- Previous Line: Navistick up, of D1, or B9+B1B2.
- Beginning of line: B9+B1B2B3B7.
- End of line: B9+B4B5B6B8.
- Next paragraph: B9+B4B6.
- Previous paragraph: B9+B1B3.
- Next page: B9B0+B5B6.
- Previous page: B9B0+B2B3.
- Enter Command Menu: Tap S3.
- Exit Command Menu: Tap S3.
- General cancel command: B9B0+B7B8.
- Highlight current character: B9+B1B4.
- Highlight current word: B9+B2B5.
- Highlight current sentence: B9+B3B6.
- Highlight current line: B9+B1B2B4B5.
- Highlight current paragraph: B9+B1B3B4B6.
- Highlight current page: B9+B1B2B3B4B5B6. This assumes there are line and/or page breaks in the document.
- Highlight the beginning or end of a block of text: B9+B1B4.
- Highlight File in File Manager: B0.
- Remove Highlighting: Double Tap B0.
- Copy: c+B8B9.
- Cut: x+B8B9.
- Paste: v+B8B9.
- Delete highlighted text: B9+B7.
- Find: B9+B1B4B5B6B8.

- Find next: 3+B8B9.
- Save file: s+B8B9.
- Save as: a+B8B9.
- Switch between open files: B9+B3B6B8.
- Display Time: Single tap S4.
- Display Date: Double tap S4.
- Toggle between Edit Mode and Read-only Mode in word processor: z+B8B9.
- Open list of currently open files in word processor: l+B8B9.
- Load specific IO Profile: Press and hold S1, and tap braille key B1 through B8 according to the IO Profile you wish to load.
- Move to top of file list: B9+B1B2B3B7.
- Move to bottom of file list: B9+B4B5B6B8.

14.4 JAWS Commands

This section contains JAWS actions that may be entered on VarioUltra while connected to a Windows PC. The JAWS action is written first, followed by the command that must be entered on VarioUltra.

- Braille Prior Line: D1 or Navistick up.
- Braille Pan Left: D2 or Navistick left.
- Braille Next Line: D3 or Navistick down.
- Braille Toggle Cursor: D4.
- Braille Pan Right: D5 or Navistick right.
- Route Braille to Active Cursor: D6.
- Backspace: B7.
- Enter: B8, or press Navistick.
- Braille Shift Tab: D1+D3.
- Top of File: D1+D4.
- Bottom of File: D3+D6.
- Braille Escape: D1+D5.
- Braille Describe Font: D1+Cursor Routing.
- Route JAWS cursor to PC cursor: D2+D4.
- Braille Enter: D2+D6.
- Windows Start Menu: D3+D4.
- Braille Select Text: D3+Cursor Routing.
- JAWS Delete: D4+D5.
- Braille Tab: D4+D6.
- Braille Bottom: D5+D6.
- Select a Link: D1+D2+D3.
- Select a Frame: D1+D2+D4.
- Keyboard Help: D1+D2+D5.
- Menu Bar: D1+D3+D4.
- Open List Box: D1+D3+D5.
- Mute Synthesizer: D1+D3+D6.
- Minimize All Applications: D1+D4+D5.

- Start JAWS Task List: D2+D3+D4.
- Braille Toggle 8 Dots: D2+D3+D5.
- Select a Heading: D2+D3+D6.
- JAWS Window: D2+D4+D5.
- Close List Box: D2+D4+D6.
- Close Document Window: D2+D5+D6.
- Hotkey Help: D3+D5+D6.
- Previous Document window: D1+D2+D3+D4.
- Next Document window: D1+D3+D4+D5.
- Braille Auto Advance: D1+D2+D3+D5.
- Set Braille Verbosity: D1+D2+D3+D6.
- Braille Grade 2 Translation: D1+D2+D4+D5.
- Braille Grade 2 Expand Current Word: D1+D2+D5+D6.
- Braille Turn Marking Off: D1+D3+D4+D6.
- Say System Time: D1+D3+D5+D6.
- Braille Alt Tab: D2+D3+D4+D5.
- Read Box in Tab Order: D2+D3+D4+D6.
- List Task Tray Icons: D2+D3+D5+D6.
- Windows Keys Help: D2+D4+D5+D6.

14.5 VarioUltra Commands for Mac OSX

Our special thanks to Taylor Jones and Michael Fish from Virginia for their assistance compiling the commands for using VarioUltra with Mac OS and VoiceOver. The Mac OS action is written first, followed by the command that must be entered on VarioUltra. VO is used for VoiceOver.

- Move VO cursor left: B9 plus B1, or Navistick left
- Activates the back button: B9 plus B12
- Activate the delete key: B9 plus B145
- Press the return key: B9 plus B15
- Find text in current window: B9 plus B124
- Toggle contracted braille on or off: B9 plus B1245
- Open VO help menu: B9 plus B125
- Activate item chooser: B9 plus B24
- Start keyboard help: B9 plus B13
- Move the VO cursor to the beginning: B9 plus B123
- Mute VO: B9 plus B134
- Display announcement history: B9 plus B1345
- Scroll right one page: B9 plus B135
- Pause or resume VO speech: B9 plus B1234
- Toggle quick nav on or off: B9 plus B12345
- Read contents of VO cursor: B9 plus B1235
- Go to menu bar: B9 plus B234
- Activate the tab key: B9 plus B2345
- Open the VO utility: B9 plus B136

- Read from the beginning: B9 plus B2456
- Speak the current page in scroll area: B9 plus B34
- Label item: B9 plus B12346
- Toggle screen curtain on or off: B9 plus B123456
- Scroll down one page: B9 plus B1456
- Scroll up one page: B9 plus B3456
- Read text attributes: B9 plus B23456
- Start interacting with item: B9 plus B236, or Display button 6
- Stop interacting with item: B9 plus B356, or Display button 4
- Activate Delete key: B9 plus B7
- Activate Return key: B9 plus B8
- Decrease VO volume: B9 plus B126
- Increase VO Volume: B9 plus B345
- Open shortcut menu: B9 plus B25
- Perform default action: Router keys on item, Navistick Press, or B9 plus B36
- Translates any text typed into a braille display: B9 plus B45
- Toggle expanded status description on or off: Router key 1 or 2
- Previous router setting: B9 plus B23
- Next router setting: B9 plus B56
- Move VO cursor up: B9 plus B3, or Navistick Up, or Display button 1
- Move VO cursor down: B9 plus B6, or Navistick Down, or Display button 3
- Move VO cursor left: B9 plus B1, or Navistick Left
- Move VO cursor right: B9 plus B4, or Navistick Right

Note: with the introduction of version 1.4, VISIOBRAILLE plans to offer a hard-copy braille version of the VarioUltra command list. It will be available upon request for registered customers.

14.6 VarioUltra Menu Structure

Note that similar information can be found on VarioUltra in the Help menu option “Useful Information”.

The purpose of this section is to provide details of the Braille Notetaker menu structure, which you may find helpful when needing to remember where something is located.

Braille Notetaker Mode

MAIN MENU

- Word Processor
- PDF Viewer
- Excel Viewer
- Calculator

- Timers
 - Timer (countdown)
 - Stop watch
 - Alarm clocks
- File Manager
 - Flashdisk
 - Stick (only appears when a USB stick is inserted)
 - Temp folder
- Settings Menu
 - Alerts
 - ⌘ Volume: 75 (adjust up and down by moving Navystick left or right)
 - ⌘ CHK Vibration On/Off
 - ⌘ OK
 - ⌘ Cancel
 - Braille
 - ⌘ Braille Presentation
 - Left margin: 0
 - Right margin: 0
 - CHK Jump
 - CHK Show messages with word wrap
 - Dot Strength
 - OK
 - Cancel
 - ⌘ Cursor
 - Reading mode
 - Cursor shape
 - CHK Inverted
 - CHK Flashing
 - Flash rate (only visible if Flashing checked ON)
 - OK
 - Cancel
 - Edit mode
 - Cursor shape
 - CHK Inverted
 - CHK Flashing
 - Flash rate (only visible if Flashing checked ON)
 - OK
 - Cancel
 - Grade 2 Cursor
 - Cursor shape

- CHK Inverted
- CHK Flashing
- Flash rate (only visible if Flashing checked ON)
- OK
- Cancel

⌘ Default Braille Codes

- CHK Master switch Computer Braille. If this option is checked, all menu options hidden except for OK and Cancel.
- Language (hidden in English versions of VarioUltra)
 - English, 1/2
- Reading Default
 - USA English Uncontracted Braille 1/5
 - USA English Contracted Braille 2/5 (DEFAULT)
 - UEB Grade 1, 3/5
 - UEB Grade 2, 4/5
 - Computer Braille 5/5
- Writing Default
 - USA English Uncontracted Braille 1/5
 - USA English Contracted Braille 2/5 (DEFAULT)
 - UEB Grade 1, 3/5
 - UEB Grade 2, 4/5
 - Computer Braille 5/5
- CHK Display text of boxes in reading braille code
- CHK Warn when technical braille is necessary
- OK
- Cancel

⌘ Standard Braille Tables

- Input Table – list item: move Navistick left or right to change selection
 - Arabic.b2u 1/26
 - Arabic_Wael.b2u 2/26
 - Croation.b2u 3/26
 - Danish.b2u 4/26
 - Dutch.b2u 5/26
 - Europa.b2u 6/26
 - Farsi.b2u 7/26
 - Finnish.b2u 8/26
 - France.b2u 9/26

- Greek.b2u 10/26
- HEB.b2u 11/26
- HebEng.b2u 12/26
- HU.b2u 13/26
- Italian.b2u 14/26
- Kurdish.b2u 15/26
- Kurdish_old.b2u 16/26
- Norwegian.b2u 17/26
- Polish.b2u 18/26
- Portugal.b2u 19/26
- Russian.b2u 20/26
- Spain.b2u 21/26
- Swedish.b2u 22/26
- TBFR2007.b2u 23/26
- Turk.b2u 24/26
- Ucranian.b2u 25/26
- US.b2u 26/26 (**Default** for English language version of VU)

– Output Table – list item: move Navistick left or right to change selection

- Arabic.u2b 1/31
- Arabic_Wael.u2b 2/31
- Croation.u2b 3/31
- Danish.u2b 4/31
- Dutch.u2b 5/31
- EurHebArab.u2b 6/31
- Eurobraille Unicode.u2b 7/31
- Europa.u2b 8/31
- Farsi.u2b 9/31
- Finnish.u2b 10/31
- France.u2b 11/31
- Greek.u2b 12/31
- Hebarb.u2b 13/31
- Hebarb8-p.u2b 14/31
- Hebunified.u2b 15/31
- HU.u2b 16/31
- Italian.u2b 17/31
- Kurdish.usb 18/31
- Kurdish_old.u2b 19/31
- Norwegian.u2b 20/31
- Polish.u2b 21/31
- Portugal.u2b 22/31
- Russian Unicode.u2b 23/31
- Russian.u2b 24/31

- Spain.u2b 25/31
 - Swedish.u2b 26/31
 - TBFR2007.u2b 27/31
 - Turk.u2b 28/31
 - US Unicode.u2b 29/31
 - **US.u2b 30/31 (Default for English language version of VU)**
 - USARAB.u2b 31/31
- Hide Braille Dots 7 and 8
 - Display braille dots 7 and 8 – press B9 or Navistick to switch on or off
- Activate/Deactivate Master Switch Computer Braille. This is the same as pressing command B9+D1 and B9+D2 to switch between Computer Braille and contracted braille
- ✂ Display settings
 - Menu shortcut commands
 - CHK Show braille key shortcuts
 - CHK Show display key shortcuts
 - OK
 - Cancel
- ✂ Hotkeys
 - Hide 1/3
 - Show 2/3
 - Highlight 3/3
- ✂ Places dot-8 below the hotkey letter within the word
- ✂ EB prefix
- ✂ EB suffix
- ✂ OK
- ✂ Cancel
- Templates
 - ✂ Menu item
 - Edit
 - Set to defaults
 - OK
 - Cancel
 - ✂ Button
 - Edit
 - Set to defaults
 - OK
 - Cancel
 - ✂ Checkbox
 - Edit

- Set to defaults
 - OK
 - Cancel
- ✧ Textbox
 - Edit
 - Set to defaults
 - OK
 - Cancel
- ✧ Textbox read only
 - Edit
 - Set to defaults
 - OK
 - Cancel
- ✧ List Box
 - Edit
 - Set to defaults
 - OK
 - Cancel
- ✧ File
 - Edit
 - Set to defaults
 - OK
 - Cancel
- ✧ Folder
 - Edit
 - Set to defaults
 - OK
 - Cancel
- Password options
 - ✧ CHK Show clear password in braille
 - ✧ OK
 - ✧ Cancel
- Messages
 - ✧ CHK Show hints
 - ✧ CHK Hide after timeout
 - ✧ Timeout: 5000 (equals 5 seconds)
 - ✧ OK
 - ✧ Cancel
- Keyboard
 - ✧ CHK B7 is backspace
 - ✧ CHK B8 is carriage return
 - ✧ CHK Double stroke
 - ✧ CHK One Hand Mode

- ✂ One Hand Mode Settings
- ✂ Key Mapping
 - Standard 1/6
 - D2 and D5 exchanged if pressed alone 2/6
 - Display keys swapped left-right 3/6
 - D2 and D5 exchanged if pressed alone, Left and Right thumb keys swapped 4/6
 - Left and Right thumb keys swapped
 - Both Left and Right thumb keys activate Right thumb key action 6/6
- ✂ Key Debounce time (ms): 20
- ✂ CHK Autorepeat for Navistick and Qwerty keyboard
 - Initial delay: 1000
 - Repeat rate: 4
- ✂ CHK Autoscroll On/Off
- ✂ OK
- ✂ Cancel
- Date and Time
 - ✂ Date: MM/DD/YYYY
 - ✂ Time: HH:MM:SS AM/PM
 - ✂ Edit Date and Time Format
 - ✂ Time Zone: 106 to choose from
 - Hawaii 3/106
 - Alaska 4/106
 - Pacific Time 6/106
 - Arizona 7/106
 - Mountain Time 9/106
 - Central Time 11/106
 - Eastern Time 16/106
 - GMT 36/106
 - Germany 38/106
 - ✂ OK
 - ✂ Cancel
- Power management
 - ✂ Auto suspend
 - ✂ CHK Auto suspend after...
 - ✂ Minutes: 10 (only visible if Auto Suspend checked on)
 - ✂ OK
 - ✂ Cancel
- Battery
 - ✂ Battery level: %%%
 - ✂ Capacity: 1000 (Max)
 - ✂ CHK Write Protocol File

- ✂ OK
 - ✂ Cancel
- IO Profiles
 - ✂ Profiles: profile 1 of 8 (default) USA English Contracted Braille; profile 2 of 8 UEB Grade 2
 - ✂ Save Current Settings
 - ✂ Rename
 - ✂ Cancel
- Braille Display Mode
 - ✂ Device Emulation
 - VarioUltra 1/3 Device Emulation
 - VarioConnect 2/3 Device Emulation
 - Pronto 3/3 Device Emulation
 - ✂ Enable Bluetooth Automatically
 - ✂ Vibrate on Device Connected
 - ✂ Show a message if a device was connected
 - ✂ Paired Devices
 - ✂ Key Simulation Properties
 - ✂ OK
 - ✂ Cancel
- Bluetooth
 - ✂ Bluetooth On/Off
 - ✂ Scan
 - ✂ Device list
 - Will populate if devices are paired and/or in range after scan
 - ✂ Pair
 - ✂ Remove
 - ✂ Show Bluetooth info
 - ✂ OK
 - ✂ Cancel
- System Update
 - ✂ Update Files 0/0
 - Will populate if a VarioUltra update file is present
 - ✂ Cancel
- Disk Cleanup
 - ✂ Says “Collecting Data” when you first enter this part of the menu. Says “Nothing to cleanup!” when empty.
 - ✂ Potentially Unneeded Files: 117934kb (sizes will vary)
 - ✂ CHK Remove OS Backups (106362kb)
 - ✂ CHK Remove software backups (11560kb)
 - ✂ CHK Remove temporary files and logfiles (12kb)
 - ✂ Cleanup now

- If any options are checked, pressing Navistick or B9 starts the cleanup
 - Returns to Cleanup Memory when done
 - ✂ Cancel
- Reset device
 - ✂ CHK Reset user settings to default
 - ✂ CHK Remove all Bluetooth pairings (only visible if something paired)
 - ✂ CHK Reset bookmarks and cursor positions (only visible if bookmarks and cursor positions have been remembered)
 - ✂ Cancel
 - ✂ Reset and Restart Device
 - ✂ Message: “Restarting ...”
- Help
 - ✂ Manual VarioUltra
 - Quick Start Guide VarioUltra
 - User Guide VarioUltra (RTF)
 - User Guide VarioUltra (PDF)
 - ✂ Installation instruction and system commands
- New in this version
- Useful information
 - ✂ Menu structure and shortcuts
- About VarioUltra
 - ✂ Software version
 - ✂ Operating system
 - ✂ BIOS
 - ✂ Bootloader
 - ✂ UID
 - ✂ Serial number
 - ✂ OK

END OF VARIOULTRA USER GUIDE.