Overview of the Brailliant 14

Introduction

Congratulations on your purchase of the Brailliant 14, the new Braille display from HumanWare.

The Brailliant 14 is a Braille terminal that can be used with virtually any screen reader on the market, including screen readers installed on or already part of mobile device operating systems (smartphones and tablets). The Brailliant 14 can also work in application mode, where you can use one of the applications present in the device. The data in the device may be synchronized with your other devices over the Internet using servers (like Gmail server, any internet provider server, etc.). This unique feature allows for using your notes instantly after turning on the device, and still keep them synchronized with all your data on other devices.

The Internet connection for synchronization is performed over Bluetooth Low Energy and a smartphone with a data plan, thus does not take much power from the phone or Brailliant.

Unpacking the Brailliant

The package contains the following items:
- Brailliant 14 unit with a preinstalled lanyard
- USB cable
- AC adapter
- Companion CD
- Carrying case

Figure 1: Brailliant 14

Physical Description

The BI 14 model has a 14-cell Braille display, 8-dot Perkins-type Braille keyboard, along with a joystick and a number of additional keys for navigation. It includes the following elements:

Top surface
Braille display
The Braille display with 14 cells is located on the top surface, near the middle of the device. Behind each Braille cell is a small sensor known as the cursor routing sensor (Active Touch Sensor).

Braille Keyboard
The Braille Keyboard's 8 keys are located above the Braille display. The left-most key is called **BACKSPACE**, or sometimes **dot 7**, and the right-most key is called **ENTER**, or **dot 8**. The Space bar is located in the middle, just below the Braille display. The Braille keyboard can be used to type Braille or perform commands (in combination with other keys – like with space). The commands depend on the screen reader used. Internal Brailliant applications have shortcuts described in the Application Mode section.

Joystick
The joystick is located on the top surface, near the rear edge of the device. The joystick has 5 functions: left, right, up, down and action. The action is performed by pressing the joystick cap into the unit.

Front Edge
Thumb keys
The four keys facing you are normally operated by your thumbs so we call them "Thumb keys" to differentiate them from the main keyboard keys. These thumb keys are used in conjunction with the Braille display when reading and navigating. They can be operated using your thumbs without moving your fingers from the Braille display.

The thumb keys are named as follows: **PREVIOUS, LEFT, RIGHT** and **NEXT**.

Left Edge
Power button
The **Power** button has a tactile dot in the middle and is slightly raised. It is located towards the back of the device on the left edge. To turn the device on or off, press and hold this button for approximately 3 seconds. The Brailliant 14 will confirm with a beep that it is powering on or off. The word "Starting" will be written on the Braille display during the booting process.
The Power button is also used to reset the Brailliant (when kept pressed for about 15 seconds) and to open the menu (a short press).

Micro USB port
In the middle of the left edge, next to the **Power** button, you will find a rectangular USB port. Use the cable that came with your Braille display to connect your Brailliant to a PC. You can also charge the Brailliant's battery through USB.

Rear Edge
Application/Terminal mode switch
On the rear to your left is an App/Terminal switch. Turn it to your right to use the unit with any screen reader (mobile or PC). Turn it to your left (closer to the edge of the device) to use the applications included in your Brailliant 14.

Charging the Battery

IMPORTANT: Prior to first use, you must charge the device for a minimum of 8 hours without using it. After its first use, it will take up to 5 hours to fully charge the battery.

The Brailliant has a built-in rechargeable Lithium Ion Polymer battery. To charge the battery, connect the Brailliant via USB to your PC or a power outlet using a USB AC adapter. Battery life of your Notebook will not be affected significantly as the current used is very low. The Brailliant will display "charging" on the Braille display when connected to power. You can use the Brailliant while charging, and you can view the battery status in the internal menu. Once fully charged, the Brailliant is ready for 10 hours or more of continuous operation on Bluetooth.

You can use any universal USB AC adapter to charge the Brailliant. Just insert the USB cable's rectangular connector into the adaptor's USB port, insert the micro USB connector into the micro USB port on the left side of your Brailliant, then plug in the adapter into an AC outlet.

Connecting the AC adapter or the USB cable attached to your computer while the device is turned off will wake it up and "charging" will be displayed. It will change to "battery full" when charged completely.

Please fully charge your Braille display before the first use.

The Brailliant's battery management system includes a battery protection circuitry that prevents it from being damaged by total discharge. If the battery is low, the Brailliant will warn you with a beep before switching off automatically.
Never try to replace the battery yourself. This will likely damage the device and void the warranty.
If your device is in need of repair, please contact your local dealer or HumanWare.

Powering On/Off

Holding the *Power* button for approximately 3 seconds will turn on/off the device. A beep will be heard, and "starting" will be written on the Braille display.

When holding the *Power* button for approximately 15 seconds the device will reset.
If there is no action on the device (no communication with the PC and no user action on the buttons) the device will turn off after the "auto-power-off" period expires. This counter/period will reset every time data is received from the PC or a user action occurs.

Installation and Connectivity

Interface Ports

Depending on the operating system, you can connect your Brailliant via various interfaces to your PC. Use the USB port to communicate with PCs or Notebooks or the built-in Bluetooth interface for your mobile devices. If you use USB to connect to a Notebook or PC, the Brailliant battery will be recharged in the process.

USB Port

USB connectivity is supported by Windows computers (32 and 64 bits).

Plug the rectangular USB Connector into your PC. Plug the small Micro USB Connector at the other end of the USB cable into the Brailliant micro USB port. This is the small rectangular socket on the left side.

Please install the Brailliant device drivers prior to connecting the Braille display to your PC. You will find the drivers on the installation CD.
Then, when you connect your Brailliant for the first time, it will be recognized automatically.

Once the Brailliant 14 has been connected to the USB port and the driver installed from the supplied CD, the Braille display will be connected as if it was connected to a serial port; the driver is simulating what is known as a virtual serial port. This has the advantage that the Brailliant can be used with screen readers that can only support serial Braille displays.

Installing this driver means that one USB port on the computer will be perceived as a serial port, e.g. as COM3. To ascertain which virtual COM-port has been created, go to the Start menu on the PC, select Settings > Control Panel > System; on the 'Hardware' tab select 'Device manager' and look through the list of ports.

If using JAWS, install the JAWS driver.

Bluetooth Interface

Bluetooth is a wireless connection. Similar to USB, Bluetooth simulates a virtual COM port.

Wireless technology, along with the Brailliant's long battery life, provides total freedom and independence from wires within the range of a Bluetooth connection. Bluetooth is now a common interface for mobile phones, PDAs and Notebook PCs. PCs can be upgraded with Bluetooth using a Bluetooth USB Dongle which automatically installs itself on Windows 7, Windows 8, Windows 10 (and above) when plugged in.

When two Bluetooth devices are connected for the first time, they have to be "paired". This is for security reasons. Later, the devices will recognize each other automatically, if allowed by the user.

In the Bluetooth environment of a PC you will find the Brailliant as:
Brailliant BI 14 650014XXXXXX
where XXXXXX is the serial number of your unit.

Connecting to a PC or Notebook (in Terminal Mode)

Your Brailliant can be used as a Braille display with popular PC screen readers such as JAWS, Supernova, etc. The PC or Notebook must provide either USB or a wireless Bluetooth interface (built-in or by using a USB Bluetooth dongle). We recommend Windows 7, Windows 8 or Windows 10 for Bluetooth.

How to find out which virtual serial port is provided by a Bluetooth or USB interface in Windows:

1. Open the Control Panel (Start/Settings/Control Panel).

2. Select "System" from the list.
3. In the window now opening, select the tab "Hardware".
4. On this tab, click on "Device manager".
5. In the Device manager's tree view, open the branch "Ports (COM and LPT)"
6. Search for something similar to "standard serial over Bluetooth port (COM 13)". There may be more of these. Take note of the number after the COM.
7. This number is the number of the virtual COM port the device is connected to. The screen reader wants to know this port.

On Bluetooth you will see two ports, one outgoing and one incoming. The outgoing port is the one we want to use to connect.
When connected using Bluetooth, the serial port used by your device may also be found in the Properties of your connected device in the Bluetooth Manager.

Some screen readers do not support higher values of COM Ports. In that case you may want to change the port number. Do this by selecting the "Port (COM and LPT)" branch in Device manager as described above, and right-click on the Port you want to change (Shift F10 will do the same). The context menu opens and you can click on "Properties". Then click on the tab "Port settings" and click on the "Advanced" button. In the window now opening is a List Box "COM Port Number" where you can choose a free port number. Numbers not available will be marked.

JAWS
A JAWS driver is included on the Brailliant installation CD. The latest version can be downloaded from our website's support section:
www.humanware.com

Installation instructions are included in the driver package.

Other Screen Readers
The Brailliant is compatible with other screen readers. Please consult our website's support page for additional information: http://www.humanware.com

Pairing the Brailliant as a terminal with a mobile phone

The Brailliant can be paired with mobile phones as a Bluetooth Braille display. The pairing has to be initialized from the phone, just as you would to pair with any other keyboard or Bluetooth device. Please note that another connection with your phone will be performed over Bluetooth Low Energy for application data synchronization, using a special application called BrailliantSync.

Please don't mix the two – look for the terminal connection in the screen reader's menus and for the data synchronization Bluetooth Low Energy connection in the BrailliantSync app.

For more information, refer to the user guide of your mobile phone screen reader.

Brailliant 14 Menu

The Brailliant Menu is activated with a short press of the power button when using it in the terminal mode.
While in the menu, use the joystick *LEFT* / *RIGHT* or PREVIOUS / NEXT thumb keys to navigate the menu. The *UP* and *DOWN* joystick movements or LEFT and RIGHT thumb keys are used to perform various actions depending on the type of menu. To enter the selected menu item, you need to use joystick *DOWN*, *ENTER* (dot 8) or *SPACE,* yet another way to choose an item is to touch

the cursor routing sensor above its name. To exit a menu, use joystick *UP* or *ESC* shortcut (Space with E). First letter navigation is available too: in long menu items, simply pressing the first letter of the item you are looking for makes it fast to jump to those items. This makes for an extremely efficient experience. In large menus or long lists of notes, the first letter navigation is very useful.

There are 3 different types of menu items:

Read only: System provides information that cannot be modified.

Toggle: Allows you to toggle settings using the *LEFT* and *RIGHT* thumb keys.

List: Good for choosing one item from a list. Use touch cursor above the element you want to choose.

Watch

Time watch is one of the applications – this menu item is available only in application mode. See description of Watch in Application Mode section below.

Notes

Notes is one of the applications – this menu item is available only in application mode. See description of Notes in the Application Mode section below.

Battery

This option displays battery charge information as a percentage of full charge. When panned the display will show if the unit is being charged or not at the moment.

Stop Watch

Stop Watch is one of the applications found on the Brailliant 14. See description of Stop Watch in the Application Mode section below.

Connections

Connections is a menu item used to switch between various devices currently connected to your Brailliant 14 over Bluetooth or USB. There may be up to five devices connected at the same time. In this menu, you will be able to switch between these devices.

Settings

This option displays and lets you choose the Brailliant's operating parameters:

Auto power off ⠁⠥⠞⠕ ⠏⠪⠻ ⠕⠋⠋

A toggle that allows for changing the time of inactivity before the unit switches off automatically, between 3 minutes, 5, 10, 15, 20, 30, 45, 60 minutes and off.

Sleep ⠎⠇ ⠑⠑⠏

A toggle that allows for changing the sleep time (period of inactivity before the braille display becomes inactive), between 3 minutes, 5, 10, 15, 20, 30, 45, 60 minutes and off. Press any key to wake your device when in sleep mode.

Sound ⠎⠕⠥⠝⠙

A toggle that allows for changing between sounds ON or OFF. When sounds are off the unit will not inform with sound cues about actions it performs (like switching on and off, etc.).

Vibration ⠧⠊⠃⠗⠁ ⠞⠊⠕⠝

A toggle that allows for changing between vibration ON or OFF. When vibration is off, the unit will not inform with vibration about actions it performs (like actions of the touch cursor routing keys etc.).

Cursor sens ⠉⠥⠗⠎⠕⠗ ⠎⠑⠝⠎

A toggle that controls sensitivity of the active touch cursor. You can set off (no touch cursors) or 1 to 5. Please experiment with these settings to find the right sensitivity for you.

Cursor vib ⠉⠥⠗⠎⠕⠗ ⠧⠊⠃

A toggle that controls whether there should be vibration feedback when the touch cursor is activated. You can set it to off (no vibration on touch cursors) or to length of 1 to 5. Please experiment with these settings to find the right vibration length for you.

Computer Braille ⠉⠕⠍⠏⠥⠞⠻ ⠃⠗⠇

A toggle that allows for choosing an 8-dot computer Braille table from a list of available languages/types. An 8-dot sign marks the item that is selected.

Literary Braille ⠇⠊⠞⠻⠜⠽ ⠃⠗⠇

A toggle that allows for selecting a 6-dot literary Braille table from a list of available languages/types. An 8-dot sign marks the item that is selected.

Default Braille ⠙⠑⠋⠁⠥⠇⠞ ⠃⠗⠇

A list that allows for selecting either literary or computer Braille table as default when opening a note (existing or new).

Language ⠇⠁⠝⠛⠥⠁⠛⠑

A list that allows for selecting language from a list of available languages. The language that is selected is marked by an 8-dot sign.

One hand mode ⠿⠀⠿⠀⠀⠿⠀⠿⠀⠀⠿⠀⠿⠀⠿

> A toggle that enables or disables one hand mode for users restricted to the use of a single hand. You will be notified if one hand mode is enabled when turning on your Brailliant. An 8-dot sign marks the item that is selected.

About ⠿⠀⠿⠀⠿⠀⠿⠀⠿⠀

This option displays the device's firmware version and serial number. It includes an option for starting the firmware upgrade process – please use with caution: any interruption during the upgrade may render the device unusable until sent for service to an authorized workshop.

Application Mode

Brailliant 14, being a Braille terminal, can work autonomously when switched to application mode (with the switch at rear of the unit). When in Application mode, there are some more menu items available than in the already described terminal mode:

Watch This app simply shows time and date. When you enter the Watch app you will see system time (that is synchronized with the phone via Brailliant Sync app – see the "Synchronization of the Brailliant 14 data" section below). The *NEXT* thumb key scrolls the display to show the date instead. Return to time display with *PREVIOUS* key.

Notes ⠿⠀⠿⠀⠿⠀⠿⠀

This application keeps your notes. Notes may be downloaded and synchronized with a server, and via the server with all your other devices (a PC, tablet, phone etc.).

After entering the Notes menu item you will see a list of folders – one per account, starting with "local". This "local" folder is stored on the device only and will not get synchronized. Other folders are created when you first connect the device to the BrilliantSync application. In this app, you can define your accounts and name the folders that will correspond to the accounts. See "Synchronization of the Brailliant 14 data" section below.

In any folder (local or synchronized), you will find a list of notes that belong to the account that corresponds to the folder. Typically, you will find there all notes that were stored in a given account.

In case there are no notes on this account, you will see "empty".

To create a new note, use Space + N command.
To delete a note, press Space + D.

Browse the notes with the usual scrolling methods (joystick or thumb keys) and enter into a note using the Space key or joystick down. When in the note, you may edit it using the following shortcuts:

Editing function	Shortcut key
New line	Enter or Joystick action
Backspace	Backspace or Space + B

Editing function	Shortcut key
Previous line	Space + dot 1, joystick up
Next line (paragraph)	Space + dot 4, joystick down
Previous word	Space + dot 2
Next word	Space + dot 5
Previous character	Space + dot 3 or joystick left
Next character	Space + dot 6 or joystick right
Begin of the note	Space + dots 1-2-3
End of the note	Space + dots 4-5-6
Save without exit	Space + S
Save and exit	Space + E
Exit without saving	Space + Z
Switch Computer/Literary Braille	Space + dot1 + dot2 + dot4 + dot5

While editing a note, its text may be displayed on the Braille display in Computer Braille or Literary Braille. Switching between the two may be done by pressing Space + G. Specific Braille conversion rules table may be set in Settings.

While in a note, the cursor is represented by dots 7 and 8 in literary Braille mode and by dot 8 while in Computer Braille mode.

Stop Watch ⠠⠎⠞⠕⠏ ⠠⠺⠁⠞⠉⠓

This application shows the time elapsed since a space key press. Space starts and stops the stop watch. Accuracy of measurement is 0.1 s (one tenth of a second).

Use the Space + C to reset the stop watch.

Synchronizing Brailliant 14 Data

Brailliant 14 notes can be synchronized with your Google Mail account, etc. This makes it easy to access your notes at any moment without all the hassle of accessing them through your smartphone (for that you would need to switch both devices on, wait until they connect, and finally reach the Notes app in your phone – in Brailliant 14, you just switch the device to application mode and you're ready to view your existing notes or write new ones).

For synchronization, you need to use the BrailliantSync app from the Apple AppStore (Google Play Store app to be available soon).

When first used, you need to set up the connections in the BrailliantSync app:

1. Define your note accounts (for example Google account) by giving in email address, server name, user name and password plus port number and your displayed name that will also be

seen as the corresponding folder name in the Brailliant 14.

2. Connect to your Brailliant 14 device by choosing "Select device" and selecting the serial number of your device from the displayed list. The Brailliant 14 must be on when doing this. Choose one (the only one usually, unless your neighbor also uses a Brailliant BI14).

Once the connections are defined, you no longer need to worry about the BrailliantSync application on your phone. It can keep running in the background, and synchronizations will not require you to go back to the app. You just have to make sure it is running in background (for example, you may need to restart it after you reboot your phone).

The actual synchronization is activated from the Brailliant 14.

1. When in menu enter "Notes" - Space-S will sync the accounts (it will create accounts that did not exist before on the device). You only need to perform this if an account does not exist on your device. So typically, you would do that only if you have added a new account or changed your existing accounts in the BrailliantSync app. The synchronization may be stopped by pressing Space + C.

2. From this time on, the synced accounts will exchange note content (between the device and the server) every time you switch the Brailliant 14 to terminal mode. If you only want one or few accounts synchronized, you may disable synchronization for all other accounts in the BrailliantSync app.

3. If there is a need for immediate synchronization, for example you want synchronize immediately after editing a note to view it on your PC, do the following: when in the menu, enter "Notes" and then one of the notes folders. While in the note list, press Space-S to synchronize the notes. All the notes from the selected account will be synchronized.

Each time notes are synchronized, the Brailliant 14's system time is also synchronized with the phone time.

Please note that if you have a large number of notes and/or if your notes are long, you may have to wait up to an hour for a full synchronization (this happens if the notes are synchronized for the first time). Please don't interrupt the process (status of the process is reported on the BrailliantSync App screen).

Also, please remember to set the sleep time long enough for the first synchronization.

Whenever you want to delete a note from your device, you can use the Space + D command when on the note's title in the note list. This note will be deleted from your device and, after a synchronization, from the respective server.

If you wish to remove an unused account from your device, go to the account list, choose the account for deleting and press the Space + D command. The account will be deleted and all the notes within will disappear from your device. They will not disappear from the server of the account, even after being synchronized.

Upgrading the Brailliant 14 Firmware

There may come a point where you will need to upgrade your Brailliant 14 firmware. Please note that this is a delicate procedure that requires you to follow the instructions systematically. Any interruption during the upgrade process may render the device unusable until sent for service to an authorized workshop.

To upgrade your Brailliant 14 Firmware:

1. Download the Brailliant 14 upgrade file and make sure you remember its location on your disk.

2. Install the Brailliant BI 14 Updater on your PC from your Brailliant 14 CD or from our website at www.humanware.com/Brailliant_support

3. Run the Brailliant BI 14 Updater on your PC.

4. Connect your Brailliant 14 to your computer with a USB cable. Your computer should now recognize your Brailliant.

5. Turn on your Brailliant 14.

6. Make sure you are in Application mode – the switch in the rear of your device should be in the **left position** (the position closest to the edge of your Brailliant). Switch to Application mode now if you are in Terminal mode.

7. Scroll to the About menu of your Brailliant and press Enter.

8. In the About menu, scroll to the Upgrade item and press Enter.

9. On your PC, click the **Choose…** button in the bottom left portion of the Brailliant 14 Updater window.

10. A file explorer window will open. Find and open the firmware upgrade file you downloaded at step 1. This file should be a **.dfu** file.

11. Click the Upgrade button in the bottom right portion of the Brailliant 14 Updater window.

12. Wait until the upgrade process is completed. This may take several minutes.

13. Once the upgrade process is complete, press and hold the Power button for 15 seconds. Your Brailliant will close.

Your Brailliant 14's firmware is now up-to-date.

Technical Specifications

Navigation components
    4 thumb keys
    1 joystick (up, right, down, left, action)
    8-key Braille keyboard
    1 Space bar
    14 touch cursor routing keys
    14 Braille cells

Long-life battery
    Lasts 10 hours or more
    Recharges from PC through USB port
    Auto shut-off
    Lithium-ion polymer battery
    Compatible with any standard USB A/C adapter
    Voltage rating: 3.7V

Connectivity
    USB 2.0
    Bluetooth V2.1 + EDR Class 2
    Bluetooth 4.0

Portability
    166 x 100 x 23 mm / 285 g / 0.63 lbs

Compatibility
    Windows computers (32 and 64 bits)
    JAWS and other screen readers
    Apple products with iOS 10 or macOS 10.12 and VoiceOver (MAC, iPhone, iPad, iPod Touch)

End User License Agreement

By using this product (Brailliant 14) you agree to the following minimum terms.

1. <u>License Grant</u>. HumanWare grants to End User a non-exclusive, non-transferable right and license to use the Software on this product.
2. <u>Ownership of Software</u>. End User acknowledges that HumanWare retain all right, title and interest in and to the original, and any copies, of software which is incorporated into this product. End User agrees not to: modify, port, translate, decompile, disassemble, reverse engineer, or make public in any way the software of this Product.

Manufacturer Warranty

Manufacturer Warranty
This device is a high quality product, built and packaged with care. All units and components are guaranteed against any operational defects as follows:

US and Canada: One (1) year

Continental Europe and UK: Two (2) years

Australia and New Zealand: One (1) year

Other countries: One (1) year

Warranty covers all parts (except battery) and labor. If any defect should occur, please contact your local distributor or the manufacturer technical assistance line.
Note: Warranty terms may periodically change, please consult our website for the latest information.

Conditions and Limitations:
Please keep your bill of purchase in a safe place as it may be required for a warranty repair or replacement. Please retain your original. If the unit has to be returned, please use the original packaging. This warranty applies to all cases where the damage is not a result of improper use, mistreatment, negligence or acts of God.

North America: In addition to the warranty, you can also purchase a Service Contract to prolong coverage for one year and also benefit from the cleaning service. Please refer to our web site: http://www.humanware.com/, contact us by E-mail at us.info@humanware.com or call 1(800) 722-3393

Customer support

For customer support, please contact the HumanWare office nearest you or view our web site at: www.humanware.com

North America: 1(800) 722-3393 or send an email to us.support@humanware.com
Europe: (0044) 1933 415800 or send an email to eu.support@humanware.com
Australia / Asia: (02) 9686 2600 or send an email to au.sales@humanware.com