

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. It can also be used with a tablet without a data plan as long as it is connected to Wi-Fi.

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 5-way button and several 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 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 Braille applications have shortcuts described in the Application Mode section.

5-way button

The 5-way button is located on the top surface, near the rear edge of the device. The 5-way button has five functions: left, right, up, down and action. The action is performed by pressing the 5-way button in its center.

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 Braille 14 will confirm with a beeping 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 Braille 14 (when pressed and held for approximately 15 seconds).

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 Braille 14 to a PC. You can also charge the Braille 14's battery through USB.

Rear Edge

Application/Terminal Mode Switch

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

Charging the Battery

IMPORTANT: Please fully charge your BI-14 before your first use. 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 five 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. The battery life of your PC will not be affected significantly as the current used is very low. The word “charging” will appear on the Braille display when it is connected to power and turned off. The last cell will indicate the charging status. All 8 dots will be raised once fully charged. For example, if dots 1,2,3,7 are shown, this will indicate 50% charged. 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.

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 needs 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 appear 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. Your device will beep twice when there is one minute left in the power-off time period. This counter/period will reset every time data is received from the PC or a user action occurs.

Installation and Connectivity

Interface Ports

You can connect your BI-14 via USB or Bluetooth to your PC or Bluetooth for your mobile devices. If you use USB to connect to a Notebook or PC, the Brailliant 14 battery will be recharged in the process.

USB Port

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

Please install the BI-14 driver prior to connecting the braille display to your PC. Please visit the support page on <http://www.humanware.com> to download the drivers.

Then, when you connect your BI-14 for the first time, it will be recognized automatically.

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

Once the Brailiant 14 driver has been installed, and the Brailiant 14 has been connected to the USB port, the braille display will stay 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 Brailiant 14 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, such 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.

Bluetooth Interface

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

Wireless technology, along with the Brailiant's long battery life, provides total freedom and independence from wires within the range of a Bluetooth connection (range is approximately 30 feet). 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 Brailiant as:

Brailiant BI 14 650014XXXXXX

where XXXXXX is the serial number of your unit.

Connecting to a PC or Notebook (in Terminal Mode)

Your Brailiant can be used as a Braille display with popular PC screen readers such as JAWS, Supernova, and others. 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.

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 like "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 for Brailliant 14 is included with the JAWS software. The latest version can be downloaded from HumanWare's website's support section at 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 must 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 confuse the two – look for the terminal connection in the screen reader's menus and the data synchronization Bluetooth Low Energy connection in the BrailliantSync app.

Waking Up Your iOS Device Using Brailliant 14

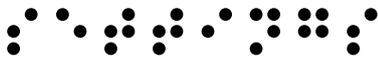
When using your Brailliant 14, you may wake up your iOS device and initiate a connection between the Brailliant 14 without touching the iPhone or iPad. For this, you need the Brailliant 14 to be connected to the Brailliant Sync app (see "Synchronization of the Brailliant 14 data" section below). This connection is maintained by the devices, so you only need to establish it once. To perform the wake-up, turn the Mode switch to Terminal mode position. If already in Terminal mode –turn it to Application mode and back to Terminal mode. The iPhone or iPad that runs Brailliant Sync software synced with your Brailliant 14 will wake up for a few seconds, and your iOS device will initiate Terminal connection.

Connections



Connections is a menu item used to switch between various devices currently connected to your Brailiant 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



In Settings, you choose the Brailiant's operating parameters:

Auto power off

Allows user to set the time of inactivity before the unit turns off automatically, between 3 minutes, 5, 10, 15, 20, 30, 45, 60 minutes and off.

Sleep

Allows user to change 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. This feature keeps the unit on; only the braille display will stop showing after the elapsed time, which saves battery life.

Sound

Allows user to set 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

Allows user to change 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 to off (no touch cursors) or 1 (most sensitive) to 5 (least sensitive). Please experiment with these settings to find the right sensitivity for you.

Cursor vib

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 the length of 1 to 5. Please experiment with these settings to find the right setting for you.

Braille cursor blink

Enables the braille text cursor to blink when editing notes. The cursor, either dot 8 or dots 7

and 8 will blink when this is on.

Computer Braille ⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

Allows user to choose 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 ⠠⠠⠠⠠⠠⠠⠠⠠⠠

Allows user to select 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 ⠠⠠⠠⠠⠠⠠⠠⠠⠠

Allows user to select either literary or computer Braille table as default when opening a note (existing or new).

Language ⠠⠠⠠⠠⠠⠠⠠⠠⠠

Allows user to select a language from a list of available languages. The language that is selected is marked by an 8-dot sign.

One hand mode ⠠⠠⠠⠠⠠⠠⠠⠠⠠

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 Brailiant. An 8-dot sign marks the item that is selected. More information is available under the one-handed mode section.

New line indicator new line ind

Allows a user to identify new lines. When enabled all eight dots are shown on the one cell. This can also be turned off so it does not affect your flow and speed of reading. When turned off it will remove eight dot cell.

App mode beep ⠠⠠⠠⠠⠠⠠⠠⠠⠠

When this option is activated, the device will make a beeping sound each time a connection is established between your BI-14 and an iOS device.

About ⠠⠠⠠⠠⠠⠠⠠⠠⠠

Displays the BI-14's firmware version and serial number. It includes options for starting the firmware and memory upgrade process. Press Space or the 5-way button down when the memory version is active to check if your memory is up to date. (only works when device is connected using an iPhone).

The firmware upgrade can only be performed with a new version of firmware in a file available on a Windows computer and using the BI-14 Updater Software. Please use the firmware upgrade with

caution: **any interruption during the upgrade may cause the device to become unusable until sent for service to an authorized workshop.**

While in the main menu you may restore default settings for the device. Use key combination: 5-way button down + dots 456. This combination will only take effect when at the top menu level.

Application Mode

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

Watch ⠠⠠⠠⠠⠠⠠

This app 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 ***RIGHT*** thumb key scrolls the display to show the date instead. Return to time display with the ***LEFT*** key.

Notes ⠠⠠⠠⠠⠠⠠

This application keeps your notes and files. 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 in the device only and will not get synchronized. All other folders are created when you first connect the device to the BrailliantSync 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, you will see “empty”.

To create a new note, use Space with N command.

Browse the notes with the usual scrolling methods (5-way button or thumb keys) and enter a note using the spacebar or 5-way button down. When in the note, you may edit it using the following shortcuts:

Editing function	Shortcut key
New line	Enter or 5-way button action
Backspace	Backspace or Space + B
Previous line (paragraph)	Space + dot 1, 5-way button up
Next line (paragraph)	Space + dot 4, 5-way button down
Previous word	Space + dot 2

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

Once the connections are defined, you no longer need to worry about the BrailiantSync 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 need 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 Brailiant 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 BrailiantSync 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 Brailiant 14 to terminal mode. If you only want one or few accounts synchronized, you may disable synchronization for all other accounts in the BrailiantSync 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 Brailiant 14's system time is also synchronized with the phone time.

Please note that if you have many 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 BrailiantSync 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. On deleting the note, you will be prompted with a confirmation prompt. Press Y or dot 8 to confirm the deletion, or press N or dot 7 to disagree. 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 associated with that account will disappear from your device. They will not disappear from the server of the account, even after being synchronized.

One-Handed Mode

When enabled the Brailiant 14 will be operative for one hand use, useful for users restricted to the use of single hand.

Upgrading the Brailiant 14 Firmware

There may come a point where you will need to upgrade your Brailiant 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 Brailiant 14 Firmware:

1. Download the Brailiant 14 upgrade file and make sure you remember its location on your disk.
2. Install the Brailiant BI 14 Updater on your PC from your Brailiant 14 CD or from our website at www.humanware.com/Brailiant_support
3. Run the Brailiant BI 14 Updater on your PC.
4. Connect your Brailiant 14 to your computer with a USB cable. Your computer should now recognize your Brailiant.
5. Turn on your Brailiant 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 Brailiant). Switch to Application mode now if you are in Terminal mode.
7. Scroll to the About menu of your Brailiant and press Enter.
8. In the About menu, scroll to the Upgrade item and press Enter.
9. Start update? Press Y to confirm or N to cancel the process.
10. On your PC, click the **Choose...** button in the bottom left portion of the Brailiant 14 Updater window.
11. 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.
12. Click the Upgrade button in the bottom right portion of the Brailiant 14 Updater window.
13. Wait until the upgrade process is completed. This may take several minutes.
14. Once the upgrade process is complete, press and hold the Power button for 15 seconds. Your Brailiant will close.

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

Technical Specifications

Navigation Components:

- 4 thumb keys
- 1 5-way button (up, right, down, left, action)
- 8-key Braille keyboard
- 1 Spacebar
- 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 (Brilliant 14) you agree to the following minimum terms.

1. License Grant. HumanWare grants to End User a non-exclusive, non-transferable right and license to use the Software on this product.
2. Ownership of Software. 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