|  | **b.note**  **v3.1.0**  **Instruction Manual**  **(2024-10-08)** |
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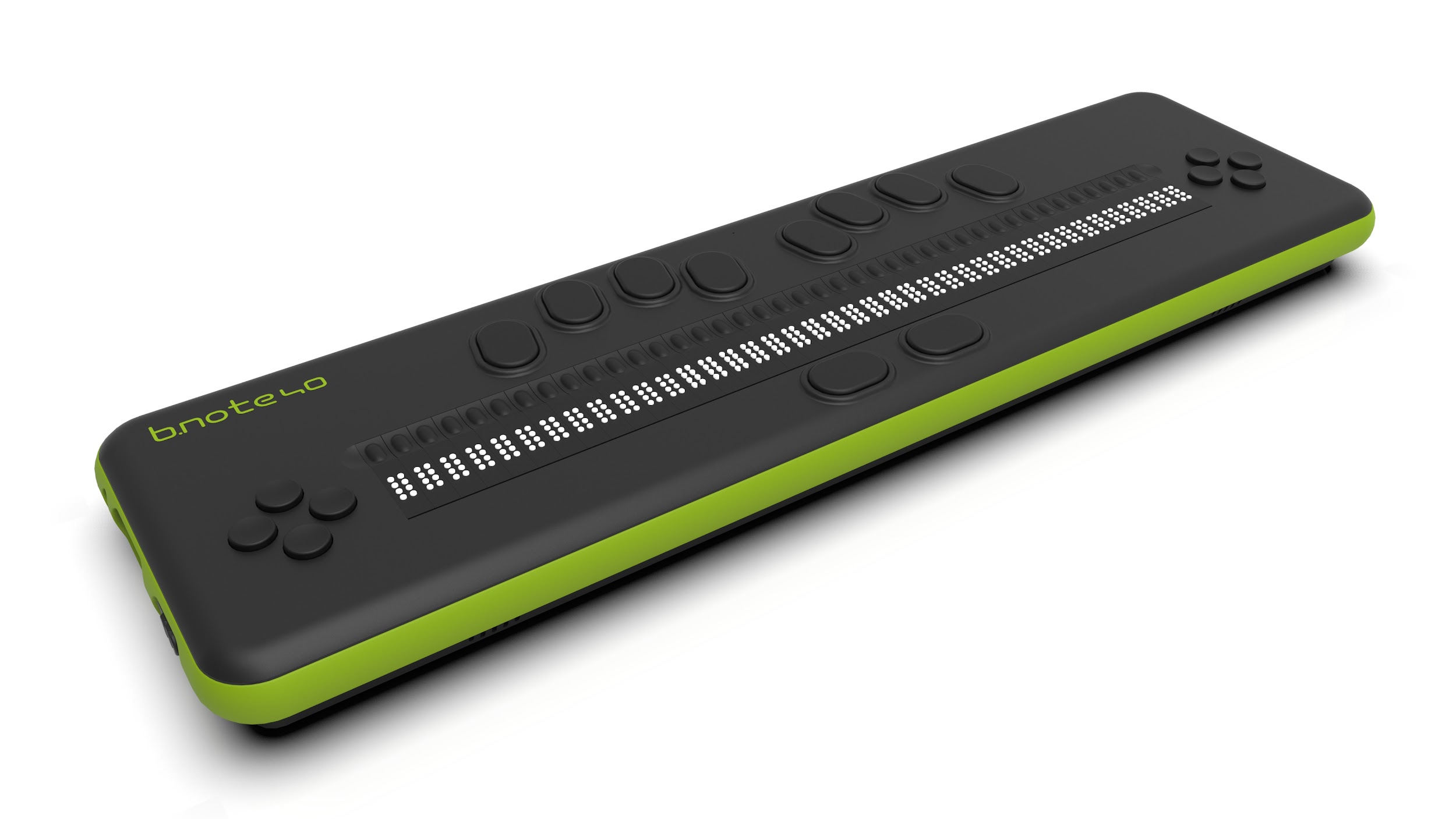


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# Description

**b.note** is a refreshable braille display that can be connected to multiple devices via USB and Bluetooth such as computers, tablets or smartphones.

**b.note** is also a stand-alone braille notetaker and computer that includes a file explorer and an editor to organize, read and modify your documents, a scientific calculator, a MP3 reader, a web radio and podcast player.

## Introduction

Upper side :

* Braille display available in 20 or 40 cells (8 dots for each cell),
* Routing cursors with a double-contact function, located above each braille cell,
* A keyboard of 10 keys – 8 keys above the routing cursor line and 2 keys below the braille display for thumbs,
* 2 keypads of 4 buttons, each keypad located on both sides of the braille display.

Bottom side :

* A trap screwed to the device gives access to the SD Card. For service only.
* On **b.note** 2nd generation, 2 grills located in the front of the housing will allow 2 integrated speakers to transmit sound.

Left side :

* A small hole enables the use of a paper clip if the system needs to be reset due to malfunction,
* A USB port ‘C’ type necessary for device charging or connecting to another system,
* An audio jack socket (3,5mm) to plug headphones,
* Switch on/off key lock.

Back side :

* On **b.note** 2nd generation, a USB port will allow the user to plug a USB stick for files transfer.

## 

## Features

* 20 or 40 braille cells
* 20 or 40 routing cursors
* 10 keys braille keyboard
* 2 keypads of 4 buttons
* Processors : STM32L1 / ARM Cortex-A53, quad core, 1.4GHz,
* RAM: 512MB LPDDR2 (900MHz),
* SD Card 64GB,
* Wifi : 2.4GHz 802.11ac dual band,
* Bluetooth : 4.2 LS BLE,
* Audio out : Jack 3,5mm and integrated speakers (**b.note** 2nd generation),
* USB type A for USB stick (**b.note** 2nd generation),
* USB type C for power supply or connection to a computer,
* Battery : 3.7V 6000mAh (22.2 W),
* Fast charge with external power supply adaptor USB C (protocol PD Universel 2.0),
* Charge at 30% in 25 min., 80% in 1h30.
* Battery life : more than 14 hours
* Dimensions : 235 (20 cel.) / 365 (40 cel.) x 105 x 27 mm,
* Weight : 500 gr. (20 cel.) / 600 gr. (40 cel.).

## Hardware architecture

**b.note** is a dual processor system,

It includes a 32-bit microcontroller that manages :

* Power supply system
* The keyboards
* On/Off power button
* USB port,

As a USB braille display, this processor will ensure the good operation of the device.

For the other uses of **b.note**, a second more powerful processor features :

* Bluetooth,
* Internal applications (files explorer, note-taker, media player)
* Speech synthesis

In needed cases, the second processor switches on. The power supply from the second processor will stop working once the device is turned off (press and hold the power button).

# The **b.note** keys

## The On/Off power button

The On/Off power button is a key lock that needs to be pulled to be activated.

It allows the device to switch On or Off. A short press leads to “transport” mode. A long press (> to 2 sec.) leads to “stand by” mode. (See “Start up”)

## The control keys

**b.note** is equipped with 2 sets of 4 buttons (keypad of 4 keys)

**Functions of the left keypad :**

* Press the up key to open the **b.note** menu,
* Press the down key to enter or exit the current application menu,
* Press the right key to move forward on the braille display,
* Press the left key to move backward the braille display.

**Functions of the right keypad :**

The 4 buttons are used to simulate the arrow keys. For example, in the menus, the right and left arrow keys enable the selection of the next or previous element of the menu.

A detailed description of the functions of the control keys can be found in chapter “APPENDIX - Controller keyboard shortcuts”.

## The routing cursor keys

The routing cursor keys have a double-contact function : a light click on any routing cursor key triggers the first contact, a stronger click will trigger the second contact.

By default, the routing cursor keys functions are the following :

* A light click on the first routing cursor key moves the braille display backward.
* A light click on any routing cursor key moves the braille display forward. When finished reading, the user does not have to look for any particular button or key, he/she presses any routing cursor key to move forward to the next display.
* A stronger click is needed to use the routing cursor key as its usual purpose, like action on an object or positioning the cursor on a text.

The functions assigned to the routing cursor keys can be changed (see APPENDIX “Functions of the routing cursor key”).

## The braille keyboard

The braille keyboard of **b.note** is composed of 8 keys and 2 thumb keys. Each key is related to one braille dot.

This is how each key is positioned : '7 3 2 1 4 5 6 8'

The 2 thumb keys are named from left to right : '9' and 'A'.

The braille keyboard must be used by pressing and releasing simultaneously one or several keys. The functions or characters generated according to the combination of pressed keys will be detailed later in the document :

* For computer braille, see APPENDIX “8-dot computer braille characters”,
* For the other functions keys (alt, ctrl…) see APPENDIX “10 dots braille functions”
* In order to use the braille keyboard in unimanual mode, see APPENDIX “Unimanual braille keyboard”.

# Start Up

The sliding button, located on the left side of the device, needs to be pulled in order to start **b.note**.

The braille display will switch on and will display the main menu.

Once the device is “on” :

* A short press turns the device into “transport” mode. In this case, all keys stop working and all dots on the braille display are down.
* A long press (> to 3 sec) turns the device into sleep mode. The second processor power supply is cut off as well as the braille display.

After starting up, **b.note** will display the main menu:

“usb-a usb-b bluetooth-applications nn%”

Choose “usb-a” or “usb-b” to communicate with a computer through the usb cable on one of the 2 serial port emulations. If another internal app or Bluetooth mode is requested, “bluetooth-applications'' will have to be confirmed which will start the second processor of the system.

nn% indicates the percentage of the remaining battery power.

In order to return to the main menu of**b.note** , press the up key of the left keypad.

Once the second processor starts, the main menu is complete :

“usb-a usb-b <List of connected bluetooth channels> <list of documents in editing> explorer settings transport turn off”

## Use of a menu

A menu appears as a line of labels.

These labels can be made of several words, in this case the braille dot 8 replaces the space as a word delimiter.

The first label is the menu title, followed by the character “:”

The followed labels are operable buttons separated with spaces.

The braille dot 7 and 8 blink below the first character of the button, meaning the button is focused.

A focused button is activated when pressing 9A from the braille display.

As a shortcut, the buttons of the menus can be activated by typing the shortcut letter when the menu is displayed. The shortcut letter is displayed by the braille dot 8 up and blinking.

When opening a menu, the beginning of the braille display shows the focused object.

There are 2 methods to navigate throughout a menu :

1. You can either move forward or move backward the braille display on the menu (light click on the routing cursor key, or right and left key of the left keypad), then activate one of the buttons of the menu with a stronger click on the routing cursor key located above this button.
2. You can move the marking on the different buttons of the menu (left/right key of the right keypad). The focused button is located at the beginning of the braille display, therefore you can activate this button (9A of the braille keyboard).

## Use of a dialogue box

A dialogue box shows a list of objects with different values associated, some of these values can be editable.

A dialogue box is like a menu and can be used the same way. There is a “OK” button to confirm and close it and a “Cancel” button to cancel the modifications. This “Cancel” button is displayed only when modifications are possible in the dialogue boxes.

Just as for the menus, the blinking dots 7 and 8 show the focused element, the raised dot 8 indicates the shortcut letter that will be activated by typing Alt+letter (on the braille keyboard 8A + braille combinaison of the letter).

Besides the buttons, you may find in a dialogue box :

* text object
* editable object
* liste object

“Editable” objects and “list” objects have a name and values associated. They are displayed as “name-value” forms.

“Text” objects have only an informative purpose, any action has no effect. They have no value and will display as “name” form.

Editable objects will enable the modification of a value. Any keyboard action on an editable box will display a blinking braille dots 7-8 under each character to mark selected text. Any character typed on the braille display will replace this value. An action on the editable box will shut editing mode.

The list objects will permit the selection of a value in a defined list, the list will have to be focused and the values, with up/down keys from the right keypad, scrolled.

## The main menu of **b.note**

Two menu versions exist according to the second processor whether it is On or Off.

This chapter describes the first version of the main menu, then the Applications menu in the second version.

### USB-A and USB-B

These two buttons permit the use of **b.note** as a braille display connected via USB serial port.

In this mode, any keyboard action on the keys is sent to the connected device, and the braille display will be refreshed when needed.

### Bluetooth-applications

This button will enable you to enter the different applications of **b.note**, which will start the second processor. 20 seconds later, the main menu becomes the Applications menu.

### nn%

This last element indicates the battery power.

## The Applications menu of **b.note**

This menu replaces the main menu when the second processor has started.

To shorten the application menu, the settings application allows you to place most of these applications in the main menu, in a submenu called 'More Apps,' or even make them invisible.

### USB

same purpose as the previous menu.

### Bluetooth (0 to 4)

The number of the buttons will depend on the number of Bluetooth connections, the text related to these buttons is the name of the Bluetooth system that **b.note** is connected to. These buttons will allow the connection of the keyboard and the braille display **b.note** to the Bluetooth system (PC, tablet or smartphone).

If no Bluetooth connection is activated, there is no button of this kind in the menu.

### Document (0 to 5)

These buttons go back to an open document, the text’s name of these buttons is the same as the file name.

When the button start with ‘\*-’ it means the document is open in read only mode.

If no document is being edited, there will not be any button in the menu.

### Explorer

This button allows the user to launch the file explorer application (See chapter Applications>File explorer).

### Settings

This button allows the user to launch the settings ’application (See chapter Applications>Settings).

### Transport

Same use as the short press on the On/Off switch of the device (See chapter Start Up).

### Turn Off

Same use as the long press on the On/Off switch of the device (See chapter Start Up).

# The applications

## Introduction

The applications of **b.note** are made of a file explorer, an editor, a settings page.

An Audio application will allow the creation of a playlist to launch audio files.

A Radio application will allow the selection of a radio station and listen to it.

A minesweeper game and a mastermind game can be activated on the “games” parameter from the preferences section. By default, these 2 applications are not visible.

## The file explorer

The files explorer presents a list of files and directories included in the current directory. This current directory is “My documents” from **b.note**, it can change according to the user’s operation.

Above the base folder 'my documents', a root folder with the elements of the 'go to' menu function is presented. This is an alternative method to this function to go to one of its elements (trash, usb key, etc.). You may use the backspace key to move to the parent directory.

In order to index the different documents, the files explorer has features that will enable it to create/erase subfolders and make copies or operate “directory to directory” transfer.

The files can be exchanged by bluetooth with a PC or smartphone or with an USB stick plugged on the USB port. The files explorer can zip and extract archives in zip format.

The explorer has its own menu, see details below.

### Introduction and moves in the current directory

The directories and files from the current directory are indexed by alphabetical order.

Each element of this directory relates to a braille line, use the up or down key of the right keypad to navigate throughout this list.

Action on a directory opens it, and it becomes the current directory.

Action on a file opens it in the editor if the format is known (“.txt”, “.mbe”, “.docx”, “xlsx”, “.odt”, “.pdf”, “.brf”, “.rtf”, “.epub”). When the editor opens a file in a format other than “.txt” it converts the file to .txt format and then deletes the converted file. However, the original file can be found in the recycle bin (trash).

Note : The musicxml and the bxml files can be read, played and edited on **b.note**. You will find another manual that explains how this works.

If you move back the display (left key of the left keypad) it will allow you to see the name of the current directory. A strong click on the routing cursor key located above this name moves to the parent directory. Braille key 9 (backspace) can also be used.

Each element of the directory starts with letters “f” or “d” marking its type (file or directory). A “test.txt” file will be displayed as “f test.txt” and a history directory as “d history”.

after the filename the size is displayed “(x mo)”, “(x ko)”, “(x octets)”.

In this list, characters can be typed,**b.note** will go on the file or directory that begins with this string, so you might quickly move throughout the list. Once the string is found, it is possible to move to the next one with F3.

### Multiple selection

The file explorer enables the selection of files and directories to cut and copy.

When an element is part of a selection, it will be prefixed with characters “s”. By default, the current element is selected. A file test.txt will be displayed as “sf test.txt”.

When an element is not in the selection, it will be prefixed with characters “n”. A file test.txt will be displayed as “nf test.txt”.

In order to select, press F8 (braille 1259) ; to close a selection, press Esc (braille 1245A).

When the selection is activated, you can switch from one element to another and press Space (braille A) to select/deselect the file/directory displayed.

To select the whole contents of the current directory, you can press the shortcut CTRL+a.

### Trash

When you delete files or directories, they are sent to the trash. You can see the contents of the trash (via menu Directory>trash) and restore a file mistakenly sent to the trash. You can permanently delete files or directories from the trash.

Note : The user has to manage the trash properly, as the trash keeps being filled when deleting documents, the user will have to empty it from time to time.

### File explorer menu

The explorer menu is displayed when pressing the down arrow key from the left keypad.

The contents of the explorer menu is listed below. Pressing the same keys return to the directory of the files explorer.

The “applications” button of this menu permits the user to exit the explorer and return to the Applications menu.

#### File menu

* **new (contain sub-menu)**
  + **text (Ctrl + n)**: create a new file in the current directory, the content will be created with the editor.
  + **music (bxml)** : create a new file music Braille score in native format
  + **music (musicxml) :** create a new file music Braille score in generic format
  + **AI assistant (ai\_txt) :** Create a new conversation file with the AI assistant in the current directory.
  + **new directory (Ctrl + d)**: create a new directory in the current directory.
* **send to** : send the file via Bluetooth to another system. (See APPENDIX - Bluetooth Files transfer).
* **rename (F2)**: enables the user to change the name of a directory or a file.
* **delete (Del)**: erase selected files and directories, and send them to the trash. They might be restored from the trash if needed.
* **zip**: create a zipped file named by the first file’s name or directory selected.
* **unzip** : unzip the selected zip file.
* **actualize (F5)** : allows the user to rebuild the files/folders list displayed.
* **open (enter)** : open the folder in the explorer or the file in the apps depending on his type.
* **recents :** display the list of the latest opened documents.
* **Find** :search for a file in the current folder and its subfolders or from the root folder ('bnote-documents').
* **Send to:** Send the file via Bluetooth to another system. See APPENDIX - Bluetooth File Transfer.
* **open read only (ctrl + enter) not visible in the menu :** open the document in read only mode.

#### Edition menu

* **start selection (F8)**: this function permits to enter the selection mode (see subchapter from previous page “Multiple selection”)
* **end selection (esc)** : (this function appear when you have already start the selection) stop the selecting process
* **cut (Ctrl + x)**: same as “copy” but the original elements will automatically be erased after pasting.
* **copy (Ctrl + c)**: copy in the clipboard the selected files and directories.
* **paste (Ctrl + v)** : appears only when cut or copy has been selected.Place the copied/cut files and/or directories into the current directory.
* **select all (Ctrl + a)**: select all files/directories in the current directory.

#### Go to menu

* **my documents**: displays the contents of “my documents” directory where the documents are stored.
* **USB** **key** : displays the USB stick connected to the device.
* **bluetooth**: displays the contents of the “bluetooth” directory where the files received via bluetooth are stored.
* **trash**: displays the contents of the “trash” directory where erased files are stored.
* **my backups**: displays the contents of the “back-up” directory where the back-up files are stored.
* **parent directory**: displays the contents of the parent directory.

#### Back-up menu

* **backup** : creates a zip file in the “back-ups” directory including the entire “my documents” file. This file may be transferred via Bluetooth to another computer or Android device, by pressing “send to “.
* **restore** : restores “my documents” directory from a back-up file located in the “back-ups” directory.

#### Applications button

* This button permits return to the Applications menu.

### Special bluetooth and back-up files menu

In these directories, the menu is incomplete and only displays relevant functions.

### Trash menu

In this directory, some functions of the menu are deleted, the file menu is presented as below :

#### File menu

* **Restore from trash :** restores the entire selected files and directories from the trash to its original place (the one before sending it to the trash).
* **permanently delete :** erases permanently the selected files and directories.
* **Empty the trash:** deletes permanently all files and directories from the trash.
* **actualize (F5)** : allows the user to rebuild the files/folders list displayed.

## 

## The editor

The editor presents the content of a text from a file made of paragraphs.

These paragraphs are segmented in lines of regular characters defined by the user. By default, this number of characters is identical to the braille display device (20, 40, 64 or 80) according to the version).

The edit cursor is represented by the blinking dots 7 and 8 under the next character. Also a selected text is marked with blinking dots 7 and 8.

The “forward / backward” feature of the braille display (right and left keys from the left keypad or light click on routing cursor) moves the cursor at the beginning of the line only if a text is not selected. This “forward/backward” function enables users to read the selected text.

A keyboard shortcut Ins+F allows users to enter an incremental search mode.

In this mode, you just have to type a sequence of characters and the editor will move to the first occurrence. F3 allows you to move on to the following ones.

If new characters are typed after 1 second they will be interpreted as a new search sequence.

This search is indifferent to accents and the case of characters.

The Escape keyboard shortcut is used to exit this mode.

The documents can be read in computer braille or contracted braille (see APPENDIX - “Controller keyboard shortcuts”)

The editor has different functions that allow it to navigate throughout the document. (See APPENDIX “Keyboard shortcuts”)

The editor has its own menu. See details below.

### The editor’s menu

The editor’s menu is displayed once pressing the down key from the left keypad. You can also return to the editor with this key.

The “applications” button of this menu exits the editor and returns to the Applications menu.

#### File

* **Close (Ctrl + F4)** : closes the document, if it has been modified, you will be able to save it or not.
* **Save (Ctrl + s)** : saves the changes made.
* **Cleanup**: Delete all the empty lines in the document. This may be useful for imported pdf files
* **Statistics** : displays a dialogue box indicating the number of paragraphs / words / characters in this document.
* **Export to .brf:** Allows you to save the document in .brf format. The save settings include: encoding language, Braille type, line length, number of lines per page, number of pages per file, and an optional cover page.
* **Send selection to:** When a text selection is made, this function sends each of these characters via Bluetooth as if they were entered using the Braille keyboard. It is necessary to ensure beforehand that the system receiving the characters is configured to receive them (for example, Notepad in the foreground under Windows).

#### Edit

* **Undo (Ctrl + Z):** Reverses the last operation; consecutive typing or deletions within a 5-second interval are treated as a single operation.
* **Redo (Ctrl + Y):** Restores the previously undone operation.
* **Selection (contains a sub menu)** : Enter and exit the selection mode, This mode is also activated with functions F8 and Esc.
  + **Start selection (F8)** : this function permits entering the selection mode, the functions of the cursor’s movements will become functions of extension of the selection.
  + **End selection (esc)** : (this function appear when you have already start the selection) stop the selecting process
  + **To the start of doc** : select the text from the cursor position to the start of the current document.
  + **To the end of doc** : select the text from the cursor position to the end of the current document.
  + **Select all (ctrl+a)** : select all the text of the current document.
* **Cut (Ctrl + x)** : Copy the selected text from the clipboard and erase it from the document.
* **Copy (Ctrl + c)** : Copy the selected text into the clipboard.
* **Paste (Ctrl + v)** : Paste the selected text from the clipboard into the document where the cursor is positioned.
* **Select all (Ctrl + A)** : Select the whole document.
* **Cursor** : Displays a dialogue box showing the cursor’s coordinates. They can be modified in order to move the cursor.
* **Braille Advance in contracted braille:** activate/Deactivate a parameter enabling abbreviated reading during the advance of the display.

#### Go to

This menu allows you to move inside the document

* **beginning of document (ctrl + home)**
* **end of document (ctrl + end)**
* **previous paragraphe**
* **next paragraphe**

#### Find

* **Find(Ctrl + f)** : displays a dialogue box to search a line of characters in a text from the cursor’s position. (See APPENDIX Editor - Search)
* **Replace (Ctrl + h)** : displays a dialogue box that is similar to the “search” dialogue box. It has an additional area to edit characters that will be replacing the text found.
* **Next (F3)** : select the next occurrence from the searched text.
* **Replace and next (F4)** : replace the searched text and select the next occurrence from the searched text.
* **Previous (Shift + F3)** : select the previous occurrence from the searched text.
* **Replace and previous (Shift + F4)** : replace the searched text and select the previous occurrence from the searched text.
* **Replace all (F5)** : replace all occurrences from the searched text by the alternate text.

#### Insertion

* **Result** : insert the result of the last mathematical calculation.
* **Date** : Insert the date where the cursor points and shows “day of the week, day of the month, month, year” so for example “wednesday 25th of March 2020”.
* **Signature** : Insert the content of the file “signature.txt” located in the directory “Document” of **b.note**. This function will not work if this file has not been previously created.

#### Bookmarks

* **Insert / Delete (Ctrl + F2 / Ctrl + Shift + F2)** : Place a bookmark at the cursor’s position or remove it if there is already one.
* **Next (F2)** : Scroll down with the cursor in the document until the first bookmark is encountered. If no bookmark is found, it moves back up to the beginning of the document.
* **Previous (Shift + F2)** : Scroll up with the cursor in the document until the first bookmark is encountered. If no bookmark is found, it moves back down to the end of the document.
* **Clear all** : Erase all bookmarks from the document.

#### Math

The text editor recognises mathematical expressions and can calculate it. See ANNEXE - Editor - Math.

* **Calculate line (Ctrl + m)** : Calculate the mathematical expressions of the line with the cursor..
* **Calculate bloc (Ctrl + t)** : Calculate the mathematical expressions of several successive lines.

#### Vocalize

* **Document (Ctrl + d)** : Start “text to speech” of the document from the paragraph where the cursor is positioned.
* **Paragraph (Ctrl + r)** : Start “text to speech” of the paragraph where the cursor is positioned.
* **Volume** : Open a dialogue box that has 2 buttons to turn the volume up or down, a vocal feedback will help to adjust the settings.
* **Speed**: As for the volume, it adjusts the speed of the “text to speech” function.

#### Applications button

* This button permits return to the Applications menu.

## The Daisy Reader

The reader currently only reads daisy 2 files.

This application opens when you perform an action on a compressed file in Daisy format (.zip) from the file explorer.

It is very similar to the editor, the difference is that the open document cannot be modified or copied.

There are 2 types of Daisy document :

* For purely audio documents : only a summary of the document is available in text. It will be possible to position yourself on a line and validate it by doing a hard click or enter to start reading the chapter.
* Mixed documents : both audio and text is available in this type of document. You can move through the text and start reading from the highlighted paragraph. The summary of the work is accessible with the File>Summary menu function.

The only menu that changes from the editor is the Audio menu which replaces the vocalization menu.

#### Audio

* **Play (Ctrl + r or Enter)** : start the reading from the beginning of the paragraph where the cursor is.
* **Pause / play (Ctrl + d or space)** : start the reading from the beginning of the paragraph where the cursor is. If the reading had been stopped or paused, if the document had been closed or if the b.noted had been turned off this function will start the reading from where it stopped
* **Stop** : Stop the reading of the document
* **Volume** : Open a dialog box with 2 buttons volume up and down..

## Wikipedia

The Wikipedia application gives you access to the online encyclopedia Wikipedia.

When opened, the application displays a dialog box which allows you to carry out a search on Wikipedia.

The search result is displayed in a document that looks like the editor. This document cannot be edited, but text selection for copying to one of the editor's files can be made.

Simply enter (b9A) in this document or activate the ‘File>Search’ menu to re-open the dialog box.

The Wikipedia search dialog box consists of the following objects:

an editable ‘Search’ area to enter the text to search,

a 'Suggestion' list which lists the Wikipedia articles found according to the searched text,

an ‘ok’ button to display in a document the Wikipedia page corresponding to the choice selected in the ‘Suggestion’ list object

a 'Cancel' button which closes the dialog box without doing anything.

## 

## AI assistant

The AI assistant is a chatbot based on ChatGPT 4o-mini.

The .ai\_txt file is limited to 1000 words.

This application opens when you validate an AI Assistant format file (.ai\_txt) from the file explorer.

It is very similar to the editor, the difference is that the content of the conversation cannot be edited directly as in the editor. To start or continue a conversation with the AI ​​assistant, simply press Enter (b9A) for a dialog box in which you will write your message or question. Your message as well as the reaction of the AI ​​assistant will be automatically added to the document.

You can then move in the document to read the former question and answer.

The ‘ai assistant’ dialog box consists of the following objects:

an editable message area to enter the text to send to the AI ​​assistant,

an ‘ok’ button to send the message to the AI ​​assistant. The dialog box closes and this message is added to the conversation. When the assistant’s response arrives, it is displayed after your message.

a ‘Cancel’ button that closes the dialog box without doing anything.

Your messages are indicated in the conversation by ‘:?:’

AI Assistant messages are indicated in the conversation by ‘:-:’

#### 

## 

## Settings

In one page, this application presents the different settings of **b.note**.

You will find :

* Date and time
* Battery life information
* Vocalisation settings
* USB settings
* Bluetooth settings
* The wifi settings
* The user interface settings
* the explorer settings
* The editor settings
* The math settings
* the music settings
* the agenda settings
* word and math games settings
* Keyboards settings
* Update settings
* Standby settings
* Release information

In this page, it is possible to type characters, **b.note** will go where the string of typed characters are, you will be able to navigate quickly throughout the page.

Once the string is found, it is possible to move to the next one with F3.

Any keyboard action on the displayed line will trigger the dialogue box to modify the parameter, so any changes in the parameter of the device operate really fast.

Going through the menu is another way to modify the settings of **b.note**.

### Details of the settings

#### Clock

* **Date and time** : These settings enable to date accurately the documents that will be modified by the editor.
* **Auto sync date** : yes/no; synchronize at b.note start the date and time to the WEB when connected to the WIFI.

#### Battery

* **Battery** : this line shows the remaining battery percentage, the charger capacity, the tension and voltage of the battery.

#### Synthesis

* **Audio volume and speed** : These settings enable the user to set the volume and the “text to speech” speed. On **b.note 2nd** generation, the volume can have different values whether the headset is plugged or not.
* **language**: This parameter enables the selection of the speech synthesis language.
* **synthesis**: This parameter allows the user to choose between “picotts”, “mbrola”, “espeak”, “cerence” as speech synthesis.
* **voice**: This parameter allows the user to choose a voice for a given language and speech synthesis.
* **headset**: This parameter only available on **b.note 2nd** generation can not be modified, it shows if a headset has been detected or not. The audio output switches on the headset when a headset is connected.

#### USB

* **usb-a-hid** **and usb-b-hid** **keyboard**: shows how the braille combinations are sent, when working on one of the 2 usb port series, as a USB keyboard or to the screenreader directly. These settings can be modified independently but the screenreader should support them, so the changes made might not last. (See APPENDIX - USB Braille keyboard)
* **simulation esys** : yes/no When set to yes b.note is showing itself as an esys so it can communicate with old applications.

#### Bluetooth

* **Power** : yes/no When set to no the bluetooth is turned off. the **bnote** has more battery life.
* **Name**: The Bluetooth adapter is named by default “Esys-bnote-nnnn” where “nnnn” is the serial number of the device. Though you can customize the last part of this name. In order to make this name change effective, **b.note** will have to be restarted.
* **Visibility** : You can make the Bluetooth adapter visible and allow it to be detected for pairing. This parameter will remain in the defined state, it would be better to make it invisible to avoid any unpleasant pairings.
* **List of paired devices** : This line lists the paired devices, which leads to a dialogue box in order to erase any pairing.
* **simulation esys** : yes/no When set to yes b.note is showing itself as an esys so it can communicate with old applications.
* **Automation**: This section is only visible when devices are paired.Each paired device is presented on a line that will show the **b.note**’s reaction if there is a connection, do nothing or move automatically to the Bluetooth mode.

#### Wifi

* **Power** : yes/no When set to no the WIFI is turned off. the **bnote** has more battery life.
* **Connected to** : Gives the SSID, the IP address, and the percentage of quality of the connected wifi spot.
* **Favorites** : lists the saved ssid access points, any action will define a ssid/password of a new access point. In this dialogue box, a scan button will show the closest access points.
* **Country** : This parameter allows you to modify the region parameter of the wifi module, this parameter must only be modified when changing country.

#### User interface

* **Message language**: This parameter enables language choice of all b.note messages.
* **Braille language**: This parameter enables the selection of the braille table used.
* **Braille type** : This line indicates the type of braille used to display menus, dialog boxes, the list of folders/files in explorer and settings.It is possible to set this parameter to braille dots-8, grade1 or grade2.
* **Spaces in label** : When this parameter is set to no, spaces in labels and editable areas of menus and dialog boxes are displayed in braille with dot 8 raised.
* **Visible shortcuts** : this setting authorizes the visualization of the shortcuts next to each element of the menu.
* **developer mode** : Set to yes, you can download the versions currently under development (beta) and have access in the main menu to a skeleton application which allows you to understand the use of menus and dialog boxes.
* **import/export settings**  : only available in the menu. Allows you to save and restore

the settings

#### Main Menu

In this section we find a parameter per application allowing you to choose how its display in the main menu, 3 choices:

* Display in the main menu
* Displayed in the “more apps” submenu from the main menu
* Invisible.

By default only explorer and settings are in the main menu, all the other apps are invisible.

#### explorer

* **Empty Bluetooth Folder:** This setting, when set to 'yes,' automatically erases the Bluetooth folder upon the device's shutdown. This folder is where files transferred via Bluetooth are stored.
* **Empty Trash at Shutdown:** This setting allows to automatically emptying the trash at the device's shutdown.
* **Number of Recent Files:** This setting allows you to set the size of the recent files list in explorer’s file menu.

#### Editor

* **Braille type:** This line indicates the type of braille used to display documents in the editor. It is possible to set this parameter to braille dots-8, grade1 or grade2.
* **Line length:** This line indicates a dialogue box to adjust the maximum number of characters in an editor’s line. The text sections are cut in several lines where the words are indivisible. By default, this parameter equals the number of cells from the braille display (20 or 40) so no broken word can be found on the display.
* **Forward display** : Two types of movements on the display are available, the “normal” mode where each editor’s line is presented and the “significant” mode where the empty lines disappear.
* **Autoscroll display:** This setting allows you to define the number of seconds between each automatic advancement of the Braille display.
* **Cursor visible** : This parameter enables to hide the braille line of the cursor in the text (braille dots 7 and 8 blinking)
* **Dots 7-8 visible**: This parameter enables to hide dots 7 and 8 from the editor’s braille displays.

#### Math

* **format** : 2 display format are available, standard or scientific (exponent 10 display)
* **précision** : Define the numbers of decimal.
* **fraction** : Allow to display by fraction when possible.
* **angle** : this parameter sets the angle unit of the calculator with degree or radian.

#### Music

see music documentation

#### Agenda

see agenda special chapter

#### Word and math games

* **Use the vocal synthesis :** this parameter may be set to auto ask and no. Auto the vocal will say the new word, ask you have to hard click on the word to be said by the synthesis, no no vocal
* **keeping spacing** : no or yes. set to yes it will remove the accidentally spaces typed at the beginning or the end of the word.
* **Allow the wrong hit :** set to yes it will allow you to type a character not included in the word. Set to no you may type any character.

#### 

#### Keyboard

* **Mode** : This parameter enables the user to move the braille keyboard into one of the unimanual modes (see APPENDIX - Unimanual braille keyboard).
* **Braille 78** : This parameter conditions actions when braille keyboard dot 7 or 8 are typed alone.  
  If it is set to "character" the character of the chosen braille table is generated.

If it is set to function, pressing b7 performs the Correction function (backspace) and it on b8 makes Enter.

Once setup to function the 9 and A key are both doing space.

* **Inverted** : This parameter enables switching the left keypad’s functions and the right keypad’s functions.
* **Light, strong, adjacent, double light, double strong press** : These settings permit adjustments of the routing cursor keys operation (see APPENDIX - Routing cursor keys functions).

#### Standby

* **Transport time out** : This parameter defines the period (min.) during no activity that will lead to switching the device in transport mode. The 0 value invalidates this mechanism.
* **Time out for shutdown** : This parameter defines the period (min.) during no activity will lead to shutdown the device. The 0 value invalidates this mechanism.

#### Update

For this functionality to work, the B.note must be connected to a Wi-Fi router.

* **Search for an update (menu only):** This function allows you to manually initiate a search for updates.

#### Test (menu only)

* This function sets and clears periodically all dots of the braille display. To stop this function press a key of the left or right pads.

#### Reset (menu only)

* This function reset **b.note** parameters, its use must be exceptional.

#### Versions

* **Device type** : This line indicates the exact model of the device and its serial number.
* **Applications** : This line indicates the applications software version.
* **Firmware** : This line indicates the software version of the first processor.
* **Sdcard** : This line indicates the linux image version of the second processor.
* **Sdcard space** : Gives the size of the storage card the the used and the free spaces in GBytes
* **2nd generation** : if the value of this parameter is set to Yes, therefore the device is **b.note** 2nd generation. It has integrated speakers and a USB port to plug a USB stick.
* **Linux** : shows the linux core version of **b.note**

## The Audio Players

**b.note** has 2 audio players visible or not, according to the setting “mp3 visible” or “radio visible” from the Preferences section.

Keyboard shortcuts can be available to change volume and use the pause/play function :

* Down key + right key from the left keypad or Ctrl + ’+’ on the braille keyboard = volume up
* Down key + left key from the left keypad or Ctrl + ’-’ on the braille keyboard = volume down
* Up key + left key from the left keypad = pause/play

### Audio

An audio file player will allow you to listen to .mp3, .wma and .ogg files.

This player will allow you to set up a playlist from files you would have put in **b.note**.

#### Audio Player menu

##### Playlist menu

* **Open (Ctrl+o)** : open the dialogue box to pick a playlist.
* **Save (Ctrl+s)** : Save the current playlist.
* **Delete** : delete a saved playlist from the list of saved playlists.
* **Delete all** : delete all playlists saved.

##### Element menu

* **Add (Ctrl+a)** : add a directory or a file into the current playlist.
* **Delete** : delete the element displayed.
* **Delete all** : delete the playlist displayed.
* **Put at the beginning (Ctrl+h)** : put the displayed element on top of the list.
* **Put at the end (Ctrl+e)** : put the displayed element at the end of the list.
* **Go up (Ctrl+u)** : move the displayed element to one line above.
* **Go down (Ctrl+d)** : move the displayed element to one line down.

##### Play menu

* **Play the element (Enter)** : play the displayed element.
* **Play the list (Ctrl+l)** : play the list.
* **Next (Ctrl+f)** : while the list is being played, this function will allow the user to move to the next element.
* **Previous (Ctrl+b)** : while the list is being played, this function will allow the user to move back to the previous element.
* **Pause (Ctrl+p)** : will stop the listening, press again and it will start playing again.
* **Stop (Ctrl+t)** : will stop the listening.
* **Position (F2)** : open a dialogue box to change the player position by percentage in the Play element.
* **Volume** : open a dialogue box to change volume.

### Radio

A web radio player is available. Make sure **b.note** is connected to a Wifi access point (see chapter Preferences).

A web radio has the following features :

* A name
* An origin : downloaded from a specific server or defined manually by the user.
* A feed URL

Enter (b9A) on a radio from the list will play it or stop it.

#### Radio player menu

##### Radio menu

* Radio with url (Ctrl+u) : open a dialogue box to pick a new radio, name it and give it a URL feed.

Note : If the name of this new radio conflicts with one of the ones downloaded from the server, it replaces it. The only way to find it would be to erase the radio defined by this function.

* Delete the radio : this function will erase the current radio.
* Update the list from the internet (Ctrl+n) : Update all radios defined by the server without losing radios defined manually.

##### Player menu

* Play (Ctrl+l) : this function will play the current radio.
* Stop (Ctrl+t) : this function will stop the radio.
* Volume : this function will open a dialogue box to set the volume of the radio.

## Educational Games

This set of applications is designed for playful Braille learning. Currently, it includes two applications: "Word Games" and "Calculation Games." They are accessible from the main menu of the B.note.

### Word Games

The goal of this game is to reproduce the written word. The display is divided into two parts:

* The left part with the written word,
* The right part where the user's input will be displayed.

#### The record menu:

* See for this level: Displays the score for the selected level,
* Clear for this level: Resets the score for the level to 0.

#### Other options:

* Go to the next word: Allows you to move on to another word proposal,
* Change language: Allows you to switch word suggestions from French to English and vice versa,
* Change level: Allows you to change the level with more or fewer letters,
* Reset the application: Restores the application to its original state.

#### Levels

When you first open the application, you will be prompted to choose a level. The levels are divided as follows:

* The top 4 dots: 1245,
* The 6 dots: 123456 (no capital letters),
* The 8 dots,
* Note: The last level is saved when the device is turned off.

### Calculation Games

The goal of this game is to write the result of a calculation. You need to solve operations that can be additions or multiplications.

The game is presented as follows:

* The operation followed by the equal sign,
* A blinking cursor to enter the result.

#### The record menu:

* See for this table: Displays the score obtained for the selected table,
* Clear for this table: Clears the score for the selected table.

#### Other options:

* Change table: Allows you to choose another operation table,
* Reset the application: Restores the game to its original state.

#### Tables

When you first open the application, you need to choose a table. Each table is indicated by a number and the sign of its operation. For example, the multiplication table of 3 will be indicated as "3\*" and the addition table of 3 as "3+".

Note: The last table is saved when the device is turned off.

#### Allow vocal:

* Auto: Announces the proposal each time and can be repeated by pressing one of the cursors above the example word,
* Ask: Announces the word only when pressing one of the cursors above the example word,
* Never: Does not announce the word;
* Keep spaces: Removes accidental spaces at the beginning or end of a word,
* Allow mistyping: Allows or disallows the user to enter a character that is not correct.

Note: For the last option, if the user chooses to disable it, they will not be able to move the cursor. At the end of their input, the message will be displayed automatically. If the user leaves this option active, they can move their cursor normally. They will need to press the enter key once the word is typed for the check to be done.

## The Timer

This application has both a stopwatch and a timer. During its use, the display indicates the elapsed time and the state (stopped, started, paused).

To start or stop the stopwatch, simply press the enter key or one of the cursors above the status message. When the stopwatch is activated, the displayed values are hours, minutes, and seconds.

You can get the time in hundredths of a second by pausing the stopwatch or by pressing one of the cursors above the elapsed time.

To clear the elapsed time, simply press the backspace key.

#### Marker Menu

* Add a marker: Captures the time at the moment of the action and prompts you to enter a name,
* View markers: Displays a dialog box allowing marker management.

#### Launch a Timer

To launch a timer, press the option of the same name in the menu bar. Specify the number of hours, minutes, and seconds, then press ok. Once the time has elapsed, you will be automatically redirected to the application, even if you are elsewhere in the B.note.

#### Marker Management

When you open the marker management box, the list of different captured times is displayed. To find out what name was given to a marker, navigate to it and press "view name." You can rename and delete a marker. When you are done, press "close" or escape.

## 

## 

## The games

**b.note** includes 2 games that can be visible or not, depending on the “visible games” parameter from the preferences section.

### Minesweeper

#### Rules of the game

The objective of the game is to clear a grill containing hidden bombs without detonating any of them, with help from clues about the number of neighboring mines in each field.

The aim of the game is to uncover the empty fields in a minimum of time.

#### Display and movements

The grid is displayed on the braille display as :

Line number, grid positions, elapsed time

The position values are as follows :

‘\*’ : non-discovered position,

‘ ‘ or a number : Position discovered

‘b’ : position where a bomb has been set

The movements of the cursor, indicated by braille dots 7 and 8 in the grid, are carried out with the right keypad, and the characters can be typed on the braille keyboard as follows :

‘ ‘ : order of the discovery of the position

‘b’ : présence of a bomb in this field

### Mastermind

#### Rules of the game

The objective of the game is to propose a sequence of numbers. The system will respond by indicating the number of existing digits and the number of digits correctly placed in the sequence that needed to be guessed.

The main goal is to find the sequence in a minimum of proposals.

#### Display and movements

Each proposal is displayed on a line with the result.

You read the different proposals with the top and low keys from the right keypad.

The “Enter” key (b9A) will allow the user to make a new proposal.

## Diary

The diary application was developed by Théotime Berthod (acres.louer.0l@icloud.com), using b.note developers mode. We would like to thank him for his participation.

You’ll find all the information to develop your own application in the developers manual.

This app allows you to note events or homeworks when at schools in an integrated calendar.

### Basic operation

At first opening it will display no event. This message remains until an event is added.

If one or more events are set they’ll be displayed as follows.

Use up and down arrows to choose the event and enter or routing cursor to validate.

* date
* state
* subject (title)
* content (description)

### App browsing

Several display modes are available and listed below. Press the Braille 9 key (backspace) to list them, then up and down key from the right keypad to choose and enter to validate.

* show from today : Display all events from the b.note date.
* show for today : Display the event for the b.note’s date.
* Show Not Done : Display only the not done state event from the b.note’s date
* Show all agenda : Display all the event
* Show calendar : switch to calendar mode

### Calendar mode

Once switched to the calendar view the current day is displayed with the name of the day, the number, the month and the year.

Today is shown before the day to indicate you.

ex

\*today friday 10 february 2023 2 events

If the day contain event a “\*” is displayed before the name of the day and the number of event is shown after the year.

Up and down arrow will move one day before or next, the left and right arrow will move from one week before or next.

To display all the events of the selected day validate with enter or routing cursor.

To come back to the calendar view use backspace.

### The event menu

New (CTRL+n):

Open a dialog box to create an event.

If you are

The day is selected just type the wanted day then use the routing cursor to select the month then the year. Then select the subject and type, then the content if you want to add more text.

Choose create to validate you event or cancel to delete it

modify (enter):

Open a dialog box with the same element as the create one to modify the event. A checkbox done yes or no is added.

Change status (CTRL+t):

change the status of the event done or not done.

Delete (del):

Display a warning box if you validate the event is deleted

Delete expired events (CTRL+del):

After validation delete all the prior to today’s date events

### Goto menu

Previous week (b235a) : go to first event of previous week

Next week (b256a) : go to first event of next week

Previous day (left arrow) : go to first event of previous day

Next day (right arrow) : go to first event of next day

The goto menu is not available in calendar view

### Find menu

Find a date (ctrl + d) : type the day, the month and the year to go.

Find in agenda (ctrl + f)

Find a word or a sentence in the subject or the content. a checkbox is available to choose the done or not done event.

### DIARY MANAGER

Import diary (CTRL+i):

Open a dialog box to choose the .csv file to import.

ATTENTION: the .csv file must respect the following features.

• the separators must be ";"

• The first line must contain the four element “date ", “subject ", “content ", " todo ",

• An empty line should be present at the end of the file

• The date format must be “ dd/mm/yyyy”

• The “todo” column must contain only 0 or 1 (0 « not done» and 1 « done »).

Export diary (CTRL+e):

Open a dialog box to create a .csv file. The default csv file name is my agenda with the date. You may choose your own name then choose export button. Cancel button will get out the box without action.

Empty diary:

This function erases all the agenda content.

About:

Open a dialog box with the release information.

### Diary settings

The settings are available in settings apps in the main menu

Display agenda: Yes or no the diary is visible or no in the main menu.

Default presentation (standard, today, not done, calendar): Choose which view will be displayed at start.

At start up report events not done for the same day : yes or no, display a warning at b.note start for not done event for the same day.

At start up report events not done for the next day : yes or no, display a dialog box at b.note start for events not done for the next day.

# 

# **b.note** with a screenreader

**b.note** can communicate with another system via a USB connector or Bluetooth.

Its use is not different from any other use of a standard refreshable braille display.

For more information, please go to the screenreader documentation and driver for **b.note**.

**b.note** has some distinctive features detailed below.

## USB

**b.note** can be used as an HID keyboard and work independently of the screenreader. Therefore **b.note** will be able to show any braille combinations or transfer these combinations to the screenreader that will display the matching characters and functions. It will produce 2 entry modes (See APPENDIX - USB Braille keyboard).

Screenreaders Jaws and NVDA work with these features.

**For NVDA** : On the left keypad, press the down and right keys simultaneously, or press the down and left keys simultaneously, to go from one input method to another.

* The first mode enables a braille display to perform all keyboard shortcuts with Ctrl+key or Alt+key.
* The second mode enables the use of grade 2 with NVDA.

Note : a checkbox in NVDA braille settings permits to change this method.

**For Jaws** : The operating mode is in the driver’s file "Program File/Freedom Scientific/Jaws2020/Driver/Braille/esysiris/eurobraille.ini" the name of the parameter is UseHidKeyboard=0 ou 1.

## Bluetooth

Bluetooth can be used to connect **b.note** to a screenreader and transfer files between **b.note** and a Windows computer or any Android system (See APPENDIX “Pairing Bluetooth” and “Bluetooth files transfer”).

# APPENDIX - Editor - Search

The search for a string of characters in the editor can be done by scrolling down the document (F3), or scrolling up the document (Shift + F3).

Several parameters can refine the search :

* **Ignore character case**: If Yes, an alphabetical character is identified whatever the character case is (upper/lowercase)
* **Hide accents** : If Yes, a character is identified whatever the accentuation is, therefore é, è ê, ë and e become the same character.
* **Entire word** : If yes, only the complete words are identified in the search string.

# APPENDIX - Editor - Math.

## Description

**b.note** editor allows calculating math paragraphs.

One Paragraph must include only one math expression; you must not mix text and math expressions.

The calculating functions are available in the math menu in the editor.

You may write the math expressions in a computer Braille language or in BEU (Braille English Unified) described below.

Your paragraph should start by dot Braille 6 then dot Braille 2 to be recognized as math in computer braille or by dot Braille 56 then dot Braille 56 as math in BEU.

If you use several paragraphs each of them will start with a braille mathematical sequence (b6, b2 or b56,b56).

## Math UEB language (Unified English Braille)

### Generalities

Spaces are not significant.

Only lowercase characters are allowed.

The result of the calculation is stored in the “r” variable. so you may chained the calculations using this variable.

For statistical functions you can define values enumeration.

### Numbers

They are preceded by a braille number indicator (⠼)

character = braille value

0 = b245

1 = b1

2 = b12

3 = b14

4 = b145

5 = b15

6 = b124

7 = b1245

8 = b125

9 = b24

decimal indicator = b256

space = b5

### Constants

Pi = b45 + b1234

e = b15 + b4

### Blocs

Fraction = 12356 … b23456

Parenthesis = b5 + b126 … b5 + b345

Bracket = b46 + b126 … b46 + b345

Brace = b456 + b126 … b456 + b345

Squareroot = b146 … b346

Root n = b146 b35 n … b346

### Operators

Equal = b5 + b2356

Addition = b5 + b235

Subtraction = b5 + b36

Division = b5 + b34 ou b34 si derrière un nombre

Modulus = b456, b1256

Multiplication = b5 + b236 ou b6 + b35

exponent = b35

### One argument functions

Logarithme népérien = b123 + b1345

Logarithme base 10 = b123 + b135 + b1245

Sine = b234 + b24 + b1345

Cosine = b14 + b135 + b234

Tangent = b2345 + b1 + b1345

Cotangent = b14 + b135 + b2345

Arc sine = b1 + b1235 + b14 + b234 + b24 + b1345

Arc cosine = b1 + b1235 + b14 + b14 + b135 + b234

Arc tangent = b1 + b1235 + b14 + b2345 + b1 + b1345

Arc cotangent = b1 + b1235 + b14 + b14 + b135 + b2345

Hyperbolic sine = b234 + b24 + b1345 + b125

Hyperbolic cosine = b14 + b135 + b234 + b125

Hyperbolic tangent = b2345 + b1 + b1345 + b125

Hyperbolic cotangent = b14 + b135 + b2345 + b125

Arc hyperbolic sine = b1 + b1235 + b234 + b24 + b1345 + b125

Arc hyperbolic cosine = b1 + b1235 + b14 + b135 + b234 + b125

Arc hyperbolic tangent = b1 + b1235 + b2345 + b1 + b1345 + b125

Arc hyperbolic cotangent = b1 + b1235 + b14 + b135 + b2345 + b125

Radian = b1235 + b1 + b145

Degree = b145 + b15 + b1245

Factorial = b235

### Multi arguments functions

Sum = b234 + b136 + b134

Max = b134 + b1 + b1346

Min = b134 + b24 + b1345

Number = b1345 + b12

Average = b1 + b1236 + b15

Variance = b1236 + b1 + b1235

Deviation = b145 + b15 + b1236

Combination = b14 + b135 + b134 + b12

Arrangement = b1 + b1235 + b1235

Median = b134 + b15 + b145

Quartile 1 = b12345 + b136 + b1 + b1

Quartile 2 = b12345 + b136 + b1 + b12

Quartile 3 = b12345 + b136 + b1 + b14

Arguments separator = b6

Arguments repetition = b5 + b36 + b4 + b345

### Examples

1200 = 1200 : "⠼⠁⠃⠚⠚"

1 200 = 1200 : "⠼⠁⠐⠃⠚⠚"

8.93 = 8.93 : "⠼⠓⠲⠊⠉"

**operators**

8 - 3 - 2 = 3 : "⠼⠓⠐⠤⠼⠉⠐⠤⠼⠃"

3 + 5 = 8 : "⠼⠉ ⠐⠖ ⠼⠑"

9 / 12 = 3 / 4 : "⠼⠊ ⠐⠌ ⠼⠁⠃"

9 / 12 = ¾ : "⠼⠊⠐⠌⠁⠃"

9 / 12 = 3 / 4 : "⠼⠊⠌⠁⠃"

1 - 9 / 12 = 1 / 4 : "⠼⠁ ⠐⠤ ⠼⠊ ⠐⠌ ⠼⠁⠃"

<<1/2> + <1/3>> / 1 + 1 = 5 / 12 : "⠷⠷⠼⠁⠐⠌⠃⠾ ⠐⠖ ⠷⠼⠁⠐⠌⠉⠾ ⠐⠌ ⠼⠁⠐⠖⠼⠁⠾"

-3 - 2 = -5 : "⠐⠤⠼⠉⠐⠤⠼⠃"

1 + 4! = 25 : "⠼⠁ ⠐⠖ ⠼⠙⠖"

(modulus) 3 | 2 = 1 : "⠼⠉ ⠸⠳ ⠼⠃"

**parenthesis**

(3 - 1) / (2 + 1) = 2 / 3: "⠐⠣⠼⠉⠐⠤⠼⠁⠐⠜ ⠐⠌ ⠐⠣⠼⠃⠐⠖⠼⠁⠐⠜"

(3 - 1) (2 + 1) = 6 : "⠐⠣⠼⠉⠐⠤⠼⠁⠐⠜ ⠐⠣⠼⠃⠐⠖⠼⠁⠐⠜"

**trigonometric**

cos(pi/2) = 0 : "⠉⠕⠎ ⠐⠣ ⠘⠏⠐⠌⠼⠃ ⠐⠜"

**exponent**

3^2 = 9 : "⠼⠉⠔⠼⠃"

3^2 + 1 = 10 : "⠼⠉⠔⠼⠃⠐⠖⠼⠁"

2^10 = 1024 : "⠼⠃⠔⠼⠁⠚"

**others functions**

2 \* ln(e) = 2 : "⠼⠃ ⠐⠦ ⠇⠝⠐⠣⠑⠐⠜"

SQRT 9 = 3 : "⠩⠼⠊⠬"

SQRT<9+1> = 3.16 : "⠩⠼⠊⠐⠖⠼⠁⠬"

CUBEROOT<8> = 2 : "⠩⠔⠼⠉⠼⠓⠬"

cos(pi/2) = 0 : "⠉⠕⠎ ⠐⠣ ⠘⠏⠌⠼⠃ ⠐⠜":

pi : "⠘⠏"

**parameters**

3^2 = 27 : "⠼⠉⠔⠼⠉":

r+1 = 28 : "⠗ ⠐⠖ ⠼⠁"

x = 2 : "⠭ ⠐⠶ ⠼⠃"

y = 4 : "⠽ ⠐⠶ ⠼⠙"

x^y = 16 : "⠭⠔⠽”

2x = 4 : "⠼⠃⠭"

**statistics**

sum(2.5,3) = 11 / 2 : "⠎⠥⠍⠐⠣ ⠼⠃⠲⠑ ⠠ ⠼⠉ ⠐⠜"

max(3,4) = 4 : "⠍⠁⠭⠐⠣ ⠼⠉ ⠠ ⠼⠙ ⠐⠜"

min(2,6) = 2 : "⠍⠊⠝⠐⠣ ⠼⠃ ⠠ ⠼⠋ ⠐⠜"

nbr(1;3;5;7) = 4 : "⠝⠃⠐⠣ ⠼⠁ ⠠ ⠼⠉ ⠠ ⠼⠑ ⠠ ⠼⠛ ⠐⠜"

ave(7;13) = 10 : "⠁⠧⠑⠐⠣ ⠼⠛ ⠠ ⠼⠁⠉ ⠐⠜"

med(1;3;5;7) = 4 : "⠍⠑⠙⠐⠣ ⠼⠁ ⠠ ⠼⠉ ⠠ ⠼⠑ ⠠ ⠼⠛ ⠐⠜"

med(1;2;3;5;7) = 3 :"⠍⠑⠙⠐⠣ ⠼⠁ ⠠ ⠼⠃ ⠠ ⠼⠉ ⠠ ⠼⠑ ⠠ ⠼⠛ ⠐⠜"

qua1(1;2;3;5;7) = 2 : "⠟⠥⠁⠁⠐⠣ ⠼⠁ ⠠ ⠼⠃ ⠠ ⠼⠉ ⠠ ⠼⠑ ⠠ ⠼⠛ ⠐⠜"

var(2;5) = 2.25 : "⠧⠁⠗⠐⠣ ⠼⠃ ⠠ ⠼⠑ ⠐⠜"

dev(2;6) = 2 : "⠙⠑⠧ ⠐⠣ ⠼⠃ ⠠ ⠼⠋ ⠐⠜"

comb(96;6) = 927048304 : "⠉⠕⠍⠃ ⠐⠣ ⠼⠊⠋ ⠠ ⠼⠋ ⠐⠜"

arr(49;6) = 10068347520 : "⠁⠗⠗ ⠐⠣ ⠼⠙⠊ ⠠ ⠼⠋ ⠐⠜"

repetition : sum(2->3;3->6) = 24 : "⠎⠥⠍⠐⠣⠼⠃⠐⠤⠈⠜⠼⠉⠠⠼⠉⠐⠤⠈⠜⠼⠋⠐⠜"

## Math computer braille language

### Generality

Spaces are not significant.

The uppercase character will be converted to lowercase before analysis.

Numbers may be typed as 10 exponents.

Example, 2000 is 2e3 and 0.02 is 2e-2.

Any character not a command will be detected as a variable then 2a will be detected as 2 times the “a” variable if the variable was defined in the previous paragraph.

You may type

a=2

2a

You have 4 after calculation.

The result of the calculation is stored in the “r” variable. so you may chained the calculations using this variable.

If the variable has more than 1 character you must use the block label {}.

Exemple toto variable is written {toto}

For statistical functions you must use the parenthesis block and the semicolon to separate each value.

Example : (12; {titi}=(3 - 1) (2 + 1); 45; 1+2; 55)

### blocks

| ( ) | parenthesis |
| --- | --- |
| [] | bracket |
| {} | variable label |

### constants

| pi | 3.14... |
| --- | --- |
| e | 2.7... |

### operator

| + | addition |
| --- | --- |
| - | subtraction |
| \* | multiplication |
| / | division |
| % | modulo |
| ^ | exponent |
| = | affectation |
|  |  |

### one argument functions

| ln | natural logarithm |
| --- | --- |
| log | logarithm base 10 |
| sqrt | square root |
| deg | degree conversion |
| rad | radian conversion |
| ! | factorial |
| sin | sine |
| cos | cosine |
| tan | tangent |
| cot | cotangent |
| asin | arc sine |
| acos | arc cosine |
| atan | arc tangent |
| acot | arc cotangent |
| sh ou sinh | hyperbolic sine |
| ch ou cosh | hyperbolic cosine |
| th ou tanh | hyperbolic tangent |
| coth | hyperbolic cotangent |
| ash ou asinh | hyperbolic arcsine |
| ach ou acosh | hyperbolic arccosine |
| ath ou atanh | hyperbolic arctangent |
| acoth | hyperbolic arccotangente |

Note : For exponent on a function you may either use cos^2(45) or cos(45)^2

### 

### Several arguments functions

| nroot | nth root |
| --- | --- |
| nbr | number of element |
| max | maximum |
| min | minimum |
| sum | sum |
| ave | average |
| qua1 | quartile 1 |
| qua2, med | quartile 2 or median |
| qua3 | quartile 3 |
| var | Variance |
| dev | Deviation |
| comb | Combinaison |
| arr | Arrangement |

# 

# APPENDIX - USB braille keyboard

When the device is connected via USB, the characters and functions of the braille keyboard can be sent in different ways :

* USB-HID : The characters and functions are produced the same way as the usual USB keyboard. They can be independent of the operating system or the screenreader used.
* Driver: The characters and functions are being sent to the screenreader’s driver. They are definitely dependent on the screenreader used.

The screenreader or the software communication of **b.note** can be used to turn an operating mode into another. However, it is possible to acknowledge the operating system you are in or change it manually in the menu.

# APPENDIX - Unimanual braille keyboard

The braille keyboard has different operating modes that you can select in the menu Applications settings keyboard>braille.

**Standard :**

Anytime you take your fingers off the braille keyboard, the braille combination displayed is the last one typed. However, it is possible to change a combination before releasing the keyboard by changing the pressed keys and waiting a moment before taking your fingers off the full combination.

**Unimanual 1 :**

You type the braille dots by several successive or combined presses on the keys, then approve this number of presses with the braille key A.

If the A braille key is part of the braille combination, it will have to be typed in combination with another dot, then re-press to approve the combination.

**Unimanual 2 :**

It is a faster operating mode as the approval of the code is automatic.

The braille display is divided in 2 parts, one part 1,2,3,7,9 and the other part 4,5,6,8,A. You only need to type the first part of the braille combination in one or several presses, then you type just once the second part, and the braille combination will be generated.

For braille combinations that only have dots in one part, you need to press the A braille key to approve.

**Unimanual 3 :**

This operating mode enables to enter the braille combination using half of the left keyboard part (dots 1,2,3,7). After typing this combination, the second half is typed as follows 1-4, 2-5, 3-6, 7-8, 9-A.

The “A” and “9” keys typed with one half, are taken into account as they are.

The “9” or “A” keys are used to produce Correction or Space but also to approve the braille combinations that do not have the other half.

The “4” key alone permits the typing of the braille combinations that do not have the first half.

**Unimanual 4 :**

This operating mode is the same as the previous one but using dots 4,5,6,8,A. In order to type the first half of the combination, we will use the following combination 4-1, 5-2, 6-3, 8-7 and A-9. The braille key 1 will permit the typing of the braille combinations without the first half.

# APPENDIX - Functions of the routing cursor keys

Multiple keyboard actions are possible on routing cursor keys:

* Light click (first contact)
* Stronger click (second contact)
* 2 successive light clicks (double click first contact)
* 2 successive stronger clicks (double click second contact)
* Click on 2 adjacent routing cursor keys

A different function can be assigned to each of these actions. By default, the functions will be as follow :

| **Actions** | **Functions by default** |
| --- | --- |
| Light click on the first routing cursor keys | Moving back the braille display |
| Light click on any routing cursor keys | Moving forward the braille display |
| Strong click | Action at the current position |
| 2 successive light clicks | Same function as double click with the mouse. In a text it can select a word for example |
| 2 successive strong clicks | Same function as double click with the mouse. In a text it can select a word for example |
| Click on 2 adjacent routing cursor keys | Contextual Menu (for screen readers) |

# APPENDIX - Bluetooth pairing

The bluetooth pairing of a device with **b.note** is quite simple :

This bluetooth pairing must be done only once. The device saves a list of paired peripherals.

## Pairing with a PC

* Start **b.note** and select “bluetooth-applications” in the main menu.
* Activate Bluetooth of the PC you want to pair. Then launch a search for a peripheral. **b.note** must appear under the name “Esys-bnote-xxxxx”.
* Launch the pairing by approving the device on the PCl. A serial port is open (COMn on a PC), this port will be used by the screenreader.
* Then you can make your **b.note** invisible if you want.

## Pairing with a tablet or an Android smartphone

* Start **b.note** and select “bluetooth-applications” in the main menu.
* Activate Bluetooth on the tablet, to do so, go to Settings>Connection of the device and select Bluetooth.
* In the list of available devices, you must see **b.note** appear under the name “Esys-bnote-xxxxx”. You must press to launch the pairing.
* “Esys-bnote-xxxxx” goes to the list of devices associated.
* Then you can make your **b.note** invisible if you want.

## Pairing with an Apple tablet or smartphone

* Start **b.note** and select “bluetooth-applications” in the main menu.
* on your Apple product go to parameters / accessibility / voice over / braille
* In the list of available devices, you must see **b.note** appear under the name “Esys-bnote-xxxxx”. You must press to launch the pairing.
* “Esys-bnote-xxxxx” goes to the list of devices associated.
* Then you can make your **b.note** invisible if you want.

# APPENDIX - Bluetooth file transfer

## Transfer from PC to **b.note**

* Check if your **b.note** is visible in Bluetooth (menu settings>bluetooth in the file explorer of **b.note**).
* Open the Windows files explorer on your PC.
* Open the contextual menu on the selected file (right click on the mouse) and select “Send to > Bluetooth peripheral”. You can also select a group of files.
* Pick Esys-bnote in the list of proposed devices then click Next.

Once received, the file is located in a directory named “bluetooth” on **b.note**.

This location is dedicated to receiving files, so it is necessary to move the files received in a directory of your choice in order to open the file with the editor.

It is recommended to keep the directory “My documents/bluetooth” empty because if there is a file in this directory with the same name, it will lead to transfer failure.

Note:

Sending the file is also accessible with Windows by pressing the Bluetooth icon on the notification bar (systray). After picking the Bluetooth peripheral, the files will have to be selected to be sent.

## Transfer from **b.note** to PC

● Go to the file explorer of **b.note**

● Select the file you want to transfer. It is also possible to select several files for a grouped mailing.

● Select the function of the menu File>Send to.

● Pick the computer’s name that needs to receive the file (from the list of peripherals).

● A dialogue box indicates you need to turn the PC into files inbox mode. On the PC, click on the Bluetooth icon from the notification bar and pick “Receive a file”. Then click Ok on **b.note** device to launch the transfer.

Once the transfer is done, a dialogue box “Save as” opens on the PC, it allows you to choose the directory where you want the received file to be saved.

Note : If a directory or several files are selected for a grouped mailing, a zipped file (.zip) will be sent to the PC. This file will be named after the first selected file.

## Transfer from an Android tablet (or smartphone) to **b.note**

Check that **b.note** is visible in Bluetooth (menu settings>bluetooth in the file explorer of **b.note**).

Bluetooth on the tablet (or smartphone) must be activated, then pair it to the braille device (by clicking on the peripheral listed in “Available devices”).

The file will be sent when the file via Bluetooth is shared and your braille device in the list is selected.

## Transfer from **b.note** to an Android tablet (or smartphone)

* Go to the file explorer of **b.note**.
* Select the file you want to transfer. It is also possible to select several files for a grouped mailing.
* Select the function of the menu File>Send to.
* Select the computer’s name in the list of peripherals that need to receive the file.
* A dialogue box indicates you need to turn the PC into files inbox mode, click Ok to ignore this dialogue box and launch the transfer.
* A file transfer notification opens on your tablet / smartphone, then you need to accept the transfer.

Once the transfer is done, the file will be placed in “Files received”.

Note : If a directory or several files are selected for a grouped mailing, a zipped file (.zip) will be issued. This file will be named after the first selected file.

## 

# APPENDIX - Controller keyboard shortcuts

## Left keypad functions

* Press the up key to return to the Applications menu of **b.note**,
* Press the down key to enter or exit a menu from an application of **b.note**,
* Press the right key to move forward on the braille display,
* Press the left key to move backward on the braille display,
* Press the down key + right key to increase the volume of the media player,
* Press the down key + left key to lower the volume of the media player,
* Press the up key + left key to pause or play again the media player.

**In the editor,**

* Press both up and right keys to trigger the “move forward” function of the braille display in computer or contracted braille,
* Press both up and down keys to launch the autoplay of the document, the display moves on to the text depending on the text displayed.
* Press both left and right keys to lower the speech rate of the speech synthesis.

## Right keypad functions

The 4 buttons are used to simulate the arrow keys.

**In the editor,**

* The arrow keys enable to move the cursor,
* Press both up and left arrow keys, so the cursor moves to the beginning of the document,
* Press both up and right arrow keys, so the cursor moves to the end of the document,
* Press both down and left arrow keys to turn the volume of the speech synthesis down,
* Press both down and right arrow keys to turn the volume of the speech synthesis up.
* Press both left and right arrow keys to increase the speech rate of the speech synthesis.

**In the file explorer,**

* The up and down arrow keys enable the navigation throughout the list of documents,
* Press up and left arrow keys to select the first element of the list of documents,
* Press up and right arrow keys to select the last element of the list of documents.

**In the menus,**

* The left and right arrow keys enable the selection of the first or last element of the menu,
* Press both up and left arrow keys to select the first element of the menu,
* Press both up and right arrow keys to select the last element of the list of the menu.

# APPENDIX - Braille keyboard shortcuts

## General

Ctrl++ / Ctrl +- Increase / decrease the media players volume

Ctrl+A / Ctrl+C / Ctrl +X / Ctrl+V Select all / Copy / Cut / Paste

Ctrl+Tab /Ctrl+Maj\_Tab Switch from one app to another

Win+Character Used to switch to another application (character = '1' to '4' for bluetooth applications, '5' to '9' for the various open editors, and menu shortcut letter for other applications. 'e' for the file explorer, 'p’ for preferences...)

## Menu / Dialogue box

Home First element

End Last element

Right Next element

Left Previous element

Tab Next element (with an output edition mode for the dialogue boxes)

Shift+Tab Previous element (with an output edition mode for the dialogue boxes)

## Editor

FUNCTIONS :

Ctrl+S Save

F2 Go to the next bookmark

Shift+F2 Go to the previous bookmark

Ctrl+F2 Insert/delete bookmark

Ctrl+Shift+F2 Delete all bookmarks

Ctrl+F4 Close the document with a save request

Ctrl+F Search

Ctrl+H Search and replace

F3 Next search

Shift+F3 Previous search

F4 Replace and next search

Shift+F4 Replace and previous search

F5 Replace all

F8 Beginning of selection

Esc. End of selection / End of incremental search

Ctrl+D Reading document from a current paragraph

Ctrl+P Reading current paragraph

Ctrl+R Compute mathematics line

Ctrl+M Compute mathematics block of lines

Ctrl+Z Undo

Ctrl+Y Redo

Ins+F Entering incremental search mode / Esc to exit.

CURSOR MOVEMENTS (with Shift or after F8 : modify the selection):

Home Beginning of the line

End End of line

Right Character on the right

Left Character on the left

Up Previous line

Down Next line

Page down Move the cursor 20 lines down the document

Page up Move the cursor 20 lines up the document

Ctrl+Home Beginning of the document

Ctrl+End End of document

Ctrl+Right Next word

Ctrl+Left Previous word

Ctrl+Up Previous paragraph

Ctrl+Down Next paragraph

Ctrl+Page down Move the cursor 50 lines down the document

Ctrl+Page up Move the cursor 50 lines up the document

## File explorer

Enter open folder or file

ctrl+enter open an editor’s file in read only

Ctrl+n New file

Ctrl+d New directory

Ctrl+u Eject the USB key (when the cursor is on it)

F2 Rename the selected file or directory

F3 Next search (for incremental search)

F5 Refresh the current directory (very useful for the bluetooth directory)

F8 Beginning of selection

Escape End of selection

Space Invert the selection of current element

Backspace Display the content of the related directory

Delete Erase the selected files/directories

Home First element of the list of files

End Last element of the list of files

## Audio Player

Ctrl+o Open a playlist

Ctrl+s Save a playlist

Ctrl+a Add an element or all elements from a directory to a playlist

Delete Delete the displayed element

Ctrl+h Move the element to the beginning of the list

Ctrl+e Move the element to the end of the list

Ctrl+u Move the element up to the line above

Ctrl+d Move the element down to the line below

Ctrl+I or enter Play the element

Ctrl+l Play the list

Ctrl+f Move to the next element in the playlist being played

Ctrl+b Move to the previous element in the playlist being played

Ctrl+p Pause / keep playing

Ctrl+t Stop playing

F2 Change current position of the playing

## Radio

Ctrl+u Definition of a new radio with url

Delete Delete a radio

Ctrl+n Reconstruct the list of radios from Eurobraille server

Ctrl+l Play the current radio

Ctrl+t Stop playing

# APPENDIX - 8-dot computer braille characters (US)

The braille chart used with **b.note** is the same as the computer braille chart defined in 2007 by the Evolution commission of French Braille for the character set CP-1252.

Code ANSI - Braille Combinaison - Character Description

0 - 478 - null

1 - 178 - start of heading

2 - 1278 - start of text

3 - 1478 - end of text

4 - 14578 - end of transmission

5 - 1578 - request

6 - 12478 - confirmation

7 - 124578 - bell

8 - 12578 - backspace

9 - - character tabulation

10 - 78 - line feed

11 - 1378 - line tabulation

12 - 12378 - form feed

13 - - carriage return

14 - 134578 - shift out

15 - 13578 - shift in

16 - 123478 - data link escape

17 - 1234578 - device control 1

18 - 123578 - device control 2

19 - 23478 - device control 3

20 - 234578 - device control 4

21 - 13678 - negative acknowledge

22 - 123678 - synchronization idle

23 - 245678 - end of transmission block

24 - 134678 - cancel

25 - 1345678 - end of medium

26 - 135678 - substitute

27 - 24678 - escape

28 - 125678 - file delimiter

29 - 1245678 - group delimiter

30 - 4578 - data delimiter

31 - 45678 - unit delimiter

32 - - space

33 - 2346- exclamation mark

34 - 5 - quotation mark

35 - 3456 - hash key

36 - 1246 - dollar

37 - 146 - per cent

38 - 12346 - ampersand

39 - 3 - apostrophe

40 - 12356 - left parenthesis

41 - 23456 - right parenthesis

42 - 16 - asterisk

43 - 346 - plus sign

44 - 6 - comma

45 - 36 - hyphen-minus

46 - 46 - point

47 - 34 - slash

48 - 356 - zero

49 - 2 - one

50 - 23 - two

51 - 25 - three

52 - 256 - four

53 - 26 - five

54 - 235 - six

55 - 2356 - seven

56 - 236 - eight

57 - 35 - nine

58 - 156 - colon

59 - 56 - semi-colon

60 - 126 - less-than sign

61 - 123456 - equal

62 - 345 - more-than sign

63 - 1456 - question mark

64 - 47 - at commercial, at sign, at symbol

65 - 17 - a uppercase

66 - 127 - b uppercase

67 - 147 - c uppercase

68 - 1457 - d uppercase

69 - 157 - e uppercase

70 - 1247 - f uppercase

71 - 12457 - g uppercase

72 - 1257 - h uppercase

73 - 247 - i uppercase

74 - 2457 - j uppercase

75 - 137 - k uppercase

76 - 1237 - l uppercase

77 - 1347 - m uppercase

78 - 13457 - n uppercase

79 - 1357 - o uppercase

80 - 12347 - p uppercase

81 - 123457 - q uppercase

82 - 12357 - r uppercase

83 - 2347 - s uppercase

84 - 23457 - t uppercase

85 - 1367 - u uppercase

86 - 12367 - v uppercase

87 - 24567 - w uppercase

88 - 13467 - x uppercase

89 - 134567 - y uppercase

90 - 13567 - z uppercase

91 - 2467 - left bracket

92 - 12567 - backslash

93 - 124567 - right bracket

94 - 457 - circumflex accent

95 - 456 - underline

96 - 4 - grave accent

97 - 1 - a lowercase

98 - 12 - b lowercase

99 - 14 - c lowercase

100 - 145 - d lowercase

101 - 15 - e lowercase

102 - 124 - f lowercase

103 - 1245 - g lowercase

104 - 125 - h lowercase

105 - 24 - i lowercase

106 - 245 - j lowercase

107 - 13 - k lowercase

108 - 123 - l lowercase

109 - 134 - m lowercase

110 - 1345 - n lowercase

111 - 135 - o lowercase

112 - 1234 - p lowercase

113 - 12345 - q lowercase

114 - 1235 - r lowercase

115 - 234 - s lowercase

116 - 2345 - t lowercase

117 - 136 - u lowercase

118 - 1236 - v lowercase

119 - 2456 - w lowercase

120 - 1346 - x lowercase

121 - 13456 - y lowercase

122 - 1356 - z lowercase

123 - 246 - left curly bracket

124 - 1256 - vertical slash

125 - 12456 - right curly bracket

126 - 45 - tilde

127 - 4567 - undo character

128 - 48 - euro

129 - 18 - not used

130 - 128 - single low quote

131 - 148 - f lowercase with a hook

132 - 1458 - double low quote

133 - 158 - ellipsis

134 - 1248 - dagger

135 - 12458 - double dagger

136 - 158 - modifier letter circumflex accent

137 - 1248 - per thousand

138 - 12458 - s hatchek

139 - 1258 - left single quote

140 - 248 - oe uppercase

141 - 2458 - not used

142 - 138 - z uppercase with caron

143 - 1238 - not used

144 - 1348 - not used

145 - 13458 - right quote

146 - 1358 - single quote

147 - 2348 - right double quote

148 - 23458 - double quote

149 - 1368 - bullet point

150 - 12368 - en dash

151 - 24568 - em dash

152 - 13468 - small tilde

153 - 134568 - registered trademark symbol

154 - 13568 - s lowercase with caron

155 - 2468 - single right quote

156 - 12568 - oe lowercase

157 - 124568 - not used

158 - 458 - z lowercase with caron

159 - 4568 - y uppercase diaeresis

160 - - indivisible space

161 - 367 - Inverted exclamation mark

162 - 58 - cent

163 - 467 - pound

164 - 4678 - currency symbol

165 - 468 - yen

166 - 1578 - broken vertical bar

167 - 357 - section sign

168 - 48 - diaeresis

169 - 123468 - copyright

170 - 1258 - feminine ordinal indicator

171 - 1235678 - left quote

172 - 125678 - not sign

173 - 368 - soft hyphen

174 - 12358 - registered trademark

175 - 458 - macron letter

176 - 4568 - degree

177 - 23578 - plus minus sign

178 - 128 - subscript two

179 - 148 - subscript three

180 - 568 - diacritical mark uppercase

181 - 1348 - micro- prefix µ

182 - 1458 - pilcrow

183 - 37 - middle dot

184 - 68 - cedilla

185 - 18 - subscript one

186 - 2458 - masculine ordinal indicator

187 - 2345678 - left quote

188 - 1368 - a quarter

189 - 12368 - a half

190 - 13468 - three quarter

191 - 38 - inverted question mark

192 - 23678 - a grave accent uppercase

193 - 28 - a acute accent uppercase

194 - 167 - a circumflex accent uppercase

195 - 3467 - a tilde uppercase

196 - 567 - a diaeresis uppercase

197 - 34567 - a with ring above uppercase

198 - 3457 - ae uppercase

199 - 123467 - c cedilla uppercase

200 - 3578 - e grave accent uppercase

201 - 238 - e acute accent uppercase

202 - 1267 - e circumflex accent uppercase

203 - 2358 - e diaeresis uppercase

204 - 57 - i grave accent uppercase

205 - 258 - i acute accent uppercase

206 - 1467 - i circumflex accent uppercase

207 - 23568 - i diaeresis uppercase

208 - 3567 - eth uppercase

209 - 2567 - n tilde uppercase

210 - 578 - o grave accent uppercase

211 - 2568 - o acute accent uppercase

212 - 14567 - o circumflex accent uppercase

213 - 267 - o tilde uppercase

214 - 358 - o diaeresis uppercase

215 - - multiplication sign

216 - 2467 - o with stroke uppercase

217 - 35678 - u grave accent uppercase

218 - 268 - u acute accent uppercase

219 - 1567 - u circumflex accent uppercase

220 - 2368 - u diaeresis uppercase

221 - 3568 - y acute accent uppercase

222 - 2357 - letter thorn uppercase

223 - 34568 - sharp s, german eszett

224 - 123568 - a grave accent lowercase

225 - 168 - a acute accent lowercase

226 - 1678 - a circumflex accent lowercase

227 - 34678 - a tilde lowercase

228 - 3458 - a diaeresis lowercase

229 - 345678 - a with ring above lowercase

230 - 34578 - ae lowercase

231 - 1234678 - c cedilla lowercase

232 - 23468 - e grave accent lowercase

233 - 1268 - e acute accent lowercase

234 - 12678 - e circumflex accent lowercase

235 - 12468 - e diaeresis lowercase

236 - 348 - i grave lowercase

237 - 1468 - i acute lowercase

238 - 14678 - i circumflex lowercase

239 - 124568 - i diaeresis lowercase

240 - 23458 - eth lowercase

241 - 13458 - n tilde lowercase

242 - 3468 - o grave lowercase

243 - 14568 - o acute lowercase

244 - 145678 - o circumflex lowercase

245 - 1358 - o tilde lowercase

246 - 2468 - o diaeresis lowercase

247 - - division sign

248 - 24678 - o with stroke lowercase

249 - 234568 - u grave lowercase

250 - 1568 - u acute lowercase

251 - 15678 - u circumflex lowercase

252 - 12568 - u diaeresis lowercase

253 - 24568 - y acute accent lowercase

254 - 12348 - thorn lowercase

255 - 134568 - y diaeresis lowercase

# APPENDIX - 10 dots braille functions

* These combinations are used to generate all keys of a PC keyboard, other than the characters. They are also called bramigraphs. Graph means that the braille dots used to generate any keyboard action, usually have a graphical logic to have a better understanding.

Examples :

* The “Home” function, that is used to go to the beginning of the line in the editing zone, or at the beginning of a list, can be done by using combination b123A, (dots 1 2 3 at the same time as Space button). Its symmetrical function, end, that is used to go to the end of a line in the editing zone, or at the end of a list, can be done by using symmetrical braille dots, using space as b456A (dots 4 5 6 at the same time as Space button).
* The 4 arrow keys can also be generated with 10 dots braille functions. Even though they can be used with the right keypad, it is more convenient to generate them this way with successive shortcuts. You can notice that the 4 arrow keys always use the A key (space), combined with one of the 4 dots of the letter “w” in braille (b2456). The up arrow key will use the top dot of “w”, so you will type b4A ; the down arrow key will use the left dot of “w”, you will type b2A ; and the right arrow key will be b5A.
* The functions from F1 to F12 will be generated when using the first 12 letters of the alphabet in combination with braille key 9, for example b19 for F1 up to b1239 for F12.

Detailed list:

EDITION :

9 - Correction

A - Space

9A - Enter

35A – Insert key (used as a switch => 2 clicks to simulate a press and release)

36A - Erasure

NAVIGATION :

123A - Home

456A - End

2A - Left

5A - Right

4A - Up

6A - Down

13A – Previous page

46A – Next page

OTHERS:

1245A - Escape

256A - Tab

235A - Shift Tab

1346A – Screen print

12A – Pause / Break

14A or 569 – Contextual menu

Functions

19 - F1

129 - F2

149 - F3

1459 - F4

159 - F5

1249 - F6

12459 - F7

1259 - F8

249 - F9

2459 - F10

139 - F11

1239 - F12

SWITCH:

2456A or 12349 - Start menu Windows

79 - Shift locked (Caps lock from PC keyboard)

89 - Shift unlocked (Caps unlock from PC keyboard)

39 – Locking numerical keypad

69 - Unlocking numerical keypad

7A - Shift

78A - Ctrl

178A - Ctrl locked

478A - Ctrl unlocked

8A - Alt

18A - Alt locked

48A - Alt unlocked

Other combinaisons

135A Ins locked

345A Ins unlocked

# APPENDIX - Applications updates

1. Transfer the ”.whl.zip” file with Bluetooth file transfer function (see APPENDIX - Bluetooth file transfer).
2. In the file explorer of **b.note**, press the down key from the left keypad to enter a menu and activate “go to” and then “bluetooth” to display the content of this directory. Take action on the .whl.zip file you need to install.
3. A dialogue box confirmation is displayed, if approved an update will be carried out and it will restart.
4. After restart, you can erase the .whl.zip file that is no longer useful.