

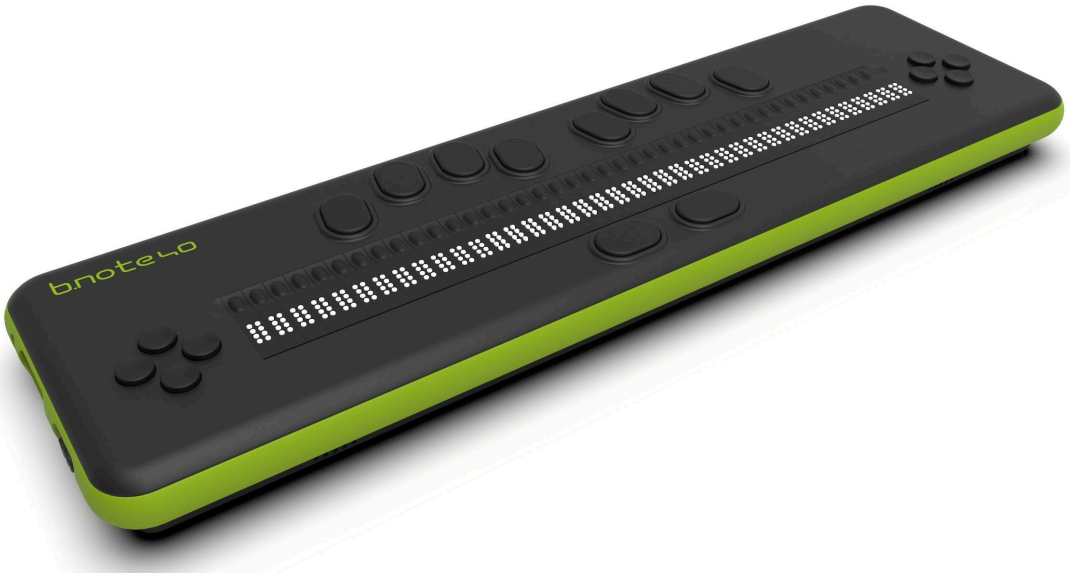
b.note

v3.1.0

Instruction Manual (2024-10-08)

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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.

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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.

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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.

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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.

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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 ‘:-:’

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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.

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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.

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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.

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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.

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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.

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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.

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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
```

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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
```

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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...

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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

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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

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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.

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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)

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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 PCI. 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.

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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.

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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.

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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

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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

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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

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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

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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

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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

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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.

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