**Soft Braille keyboard - The on screen Braille keyboard for Android**

* [**Chinese**](https://www.google.com/url?q=https://docs.google.com/document/d/1ZQ9UYA0m0y4I-LZKMiZlBDg7-cuZFbOhTDiENdLx-JM/pub&sa=D&ust=1583545901163000)
* [**English**](https://www.google.com/url?q=https://docs.google.com/document/d/1OX6yFjkK61VfROdU9uQNxjEZ_QNWxiMnUY_1ECnIyRQ/pub&sa=D&ust=1583545901163000)
* [**Italian**](https://www.google.com/url?q=https://docs.google.com/document/d/1Ic7gRAJ84EXR5cOLpVy8rAHgoYlMMZNgS1XgWMNNyiU/pub&sa=D&ust=1583545901164000)
* [**Portuguese**](https://www.google.com/url?q=https://dl.dropboxusercontent.com/u/4967121/SBK.html&sa=D&ust=1583545901164000)
* [**Slovak**](https://www.google.com/url?q=https://docs.google.com/document/d/1j-Vc15z9xRt9ULTZcNIVCvUBshBeXZkttVidSaaBePg/pub&sa=D&ust=1583545901165000)

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**April 2016**

[1 Introduction](https://docs.google.com/document/d/1OX6yFjkK61VfROdU9uQNxjEZ_QNWxiMnUY_1ECnIyRQ/pub#h.kybhljuny1ck)

[2 Setting it up](https://docs.google.com/document/d/1OX6yFjkK61VfROdU9uQNxjEZ_QNWxiMnUY_1ECnIyRQ/pub#h.ba4gsnnw6vhz)

[3 Talkback compatibility](https://docs.google.com/document/d/1OX6yFjkK61VfROdU9uQNxjEZ_QNWxiMnUY_1ECnIyRQ/pub#h.rnpjjjpp8drk)

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[4 Basic use](https://docs.google.com/document/d/1OX6yFjkK61VfROdU9uQNxjEZ_QNWxiMnUY_1ECnIyRQ/pub#h.plyh68hterof)

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[6 Selecting text and interacting with the selection](https://docs.google.com/document/d/1OX6yFjkK61VfROdU9uQNxjEZ_QNWxiMnUY_1ECnIyRQ/pub#h.y5bwo4qmand4)

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[7 Soft Braille Keyboard Settings screen](https://docs.google.com/document/d/1OX6yFjkK61VfROdU9uQNxjEZ_QNWxiMnUY_1ECnIyRQ/pub#h.2htom17n2mr7)

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[8 Supported Braille tables](https://docs.google.com/document/d/1OX6yFjkK61VfROdU9uQNxjEZ_QNWxiMnUY_1ECnIyRQ/pub#h.doen9f6gv0o7)

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[9.1 Italian grade 1](https://docs.google.com/document/d/1OX6yFjkK61VfROdU9uQNxjEZ_QNWxiMnUY_1ECnIyRQ/pub#h.kshqwllfi04q)

[9.2 Polish grade 1](https://docs.google.com/document/d/1OX6yFjkK61VfROdU9uQNxjEZ_QNWxiMnUY_1ECnIyRQ/pub#h.1un2eji82wz7)

[9.3 Spanish Grade 1](https://docs.google.com/document/d/1OX6yFjkK61VfROdU9uQNxjEZ_QNWxiMnUY_1ECnIyRQ/pub#h.3x62ykryx5sz)

[9.4 Slovak Grade 1](https://docs.google.com/document/d/1OX6yFjkK61VfROdU9uQNxjEZ_QNWxiMnUY_1ECnIyRQ/pub#h.so4m1maejqd1)

[10 Problems, feature requests and feedback](https://docs.google.com/document/d/1OX6yFjkK61VfROdU9uQNxjEZ_QNWxiMnUY_1ECnIyRQ/pub#h.op84g0yqjqcn)

**1 Introduction**

Do you find the on screen keyboard for android slow and difficult to use? Do you wish you could type on your android device without having to listen to every single character you enter? Do you know Braille? If you answer yes to any of these questions then this app is for you!

This app replaces the default google qwerty keyboard and allows a blind person to enter text using their six Braille fingers. It works in exactly the same way as a hardware Braille keyboard such as a Braille display connected to the device, but instead it uses the touch screen for all input. This app was developed by the blind for the blind.

**2 Setting it up**

Please install the app from Google Play [Here](https://www.google.com/url?q=https://play.google.com/store/apps/details?id%3Dcom.dalton.braillekeyboard&sa=D&ust=1583545901177000).

Once installed please perform the following steps to set Soft Braille Keyboard as the default system input method.

1. Navigate to the Soft Braille Keyboard application.
2. Tap the top button “Enable Soft Braille Keyboard” and enable Soft Braille Keyboard in the system dialog that is presented.
3. Return to the Soft Braille Keyboard app and tap the second button “Set Soft Braille Keyboard as the default keyboard” and select Soft Braille Keyboard from the dialog.

Soft Braille Keyboard is now the default input method and can be used in any edit text field across Android. Read on to learn how to use the keyboard.

**3 Talkback compatibility**

Unfortunately, due to restrictions imposed by the android operating system this app is not compatible with talkback mode enabled at present. This is because it conflicts with explore by touch. Don’t worry though, this app is self voicing so you can keep track of what you are typing and all of your edits plus pausing talkback feedback is very simple!

There are two methods to pause talkback feedback.

**3.1 Method 1**

This method has an extra step initially, but is much more convenient in the long run.

1. Open talkback settings. This can be done either by going to settings -> accessibility -> talkback -> settings or by invoking the global context menu of talkback with the L gesture (swipe down then right). and find the “talkback settings” in the circle. (Talkback settings is located in the top right corner of the circle).
2. Move down to the bottom of the talkback settings and locate the checkbox labeled “Talkback suspend and resume shortcut (long press volume up and down keys)”.
3. When you wish to disable talkback just hold the volume up and volume down keys of your device down for a second or two and you will hear the talkback dismissed sound.
4. To re-enable talkback just hold the volume up and volume down keys for a second or two. Alternatively, just lock and unlock your device by double tapping the power button.

**3.2 Method 2**

If you used the above method you may skip this section. This method is only required for users who are using an older version of talkback which doesn’t support disabling and enabling talkback by use of the volume keys.

1. Swipe down and then to the right (like an L shape).
2. You are presented with the talkback global context menu.
3. Explore with your finger around in a circle and find the “pause feedback” option at the top left corner.
4. When you wish to re-enable talkback just lock and unlock the device (double tap the power button).

**4 Basic use**

Now that the app is set up and ready to use navigate to any edit text field on the device. A good start might be the text box within the Soft Braille Keyboard app screen, which is designed for learning how to use the keyboard.

Next rotate the screen to landscape mode and disable talkback temporarily as discussed in the previous section.

**4.1 The Braille keyboard**

There are two types of keyboards for Braille input. The first is a traditional style Braille layout where your six fingers spread from left to right across the screen. This mode is better suited for larger devices such as tablets. When using this mode you will need to rest the device on something like a table so that you can type with both hands simultaneously on top of the device screen.

For smaller devices face the screen away from you in landscape mode and

place your hands on the screen vertically this time. Your two pointer fingers will be at the top of the keyboard, and your ring fingers will be at the bottom of the screen. Your hands essentially make two vertical lines on the screen. Use both hands and your two thumbs and pinky fingers to cradle your device. The Braille fingers are still the same that is your left pointer finger is dot 1 and your right pointer finger is dot 4.

A default keyboard is shown initially. If the screen size of your device is 6 inches or smaller the vertical layout is the default keyboard. If your screen is larger than 6 inches then the horizontal layout is the default.

It is also possible to change the configuration of dots on the Braille keyboard if you prefer them in a different arrangement. Please see section 7.1 for details.

**4.2 Calibrating the keyboard**

If you are not happy with the default position of the keys or would like to use a different keyboard layout please place all of your six fingers on the device in their respective positions based on the keyboard type you wish to use. For instance your pointers where dots 1 and 4 will be on the screen and the same for all other fingers. Press and hold the three fingers on your left hand for 1.5 seconds, release and do the same with the three fingers on your right hand. You should hear that the keyboard has been set including which type of keyboard (vertical or horizontal).

**4.3 Typing on the keyboard**

Go ahead and type Braille as you normally would. The fingers you normally use to enter Braille on a physical Braille keyboard correspond to exactly the same Braille symbols. If at any time you feel that your fingers are triggering the wrong Braille input just re-calibrate the keyboard (see the section on Calibrating the keyboard) and then resume typing. If you find the keyboard is upside down (your fingers are triggering the wrong dots), try rotating your phone 180 degrees or enable the keyboard invert setting discussed later.

You can type a space by swiping dot 4 or 5 to the right and you can delete the last character by swiping dot four to the left. The enter key can be activated by swiping dot 4 down.

The keyboard will try and select the most appropriate Braille table for you based on the language and location settings of your device. If this is not what you want please refer to the Settings section of this document to learn how to change the input Braille table. You can also select the Braille grade to use please again refer to the settings section. This can also be changed on the fly by a swipe gesture (see the following section).

**4.4 Shrinking the keyboard**

It is possible to shrink the keyboard, so that it doesn’t take up the full screen. The keyboard can’t be used while it is shrunk, but this is useful if you want to review autocomplete suggestions by the application.

After typing some text hold dot 1 down and swipe any finger on your right hand to the left. You will hear the keyboard has been shrunk.

Now re-enable talkback and you can touch above the keyboard for the standard application autocompletions.

If the suggestions are not what you want and you wish to resume typing find the keyboard with talkback in the lower portion of the screen. You will be instructed to double tap to expand the keyboard. Go ahead and do this and the keyboard will be expanded and ready for typing again from where you left off.

**5 Swipe gestures**

The Braille keyboard can be controlled by swipe gestures. Each dot 1 through six can be swiped in four different directions (left, right, up and down), to perform different actions. Additionally, there are two finger swipe gestures where you hold one dot and swipe left, right, up or down with another finger anywhere on screen.

The supported features are outlined below.

Please open the keyboard and recalibrate if you wish (see above).

**5.1 Introduction to gestures**

The gesture system has been designed to be intuitive and can be thought of in the following way. A dot on the left side of the keyboard (1, 2, 3) controls motion and reading by a certain granularity for example character, word, line and all. The right hand side dots (4, 5, 6) control deleting by the same granularity eg. character, word, line, all.

**5.2 Moving around the text**

* Move forward a character swipe dot 1 right
* Move back a character swipe dot 1 left
* Move forward by a word: swipe dot 2 right
* Move backwards by a word: swipe dot 2 left
* Move forward by a line: swipe dot 3 right
* Move backwards by a line: Swipe dot 3 left
* Move to end of text: Hold dot 6 down while swiping any of your left fingers to the right.
* Move to start of text: Hold dot 6 and swipe any fingers on your left hand towards the left.
* Move to previous misspelled word: hold dot 4 and swipe any fingers on your left hand towards the left.
* Move to next misspelled word: hold dot 4 and swipe any finger on your left hand towards the right.

**5.3 Reading back your input**

* Read the character under the cursor: Swipe dot 1 up
* Read the word under the cursor: Swipe dot 2 up
* Read the current line: Swipe dot 3 up
* Read All text: Hold dot 6 and swipe any finger on your left hand up.

**5.4 Deleting text**

* Delete character before cursor: Swipe dot 4 left
* Delete word before cursor: swipe dot 5 left
* Delete line: Swipe dot 6 left
* Delete all: Hold dot 3 and swipe any finger on right hand to the left.

Note you must swipe twice to delete the current line or all text. This is to prevent accidentally deleting a large chunk of text.

**5.5 Special keys**

* Enter swipe dot 4 down
* Space swipe dot 4 or dot 5 right.
* Enter dot 7: Swipe dot 3 down.
* Enter dot 8: Swipe dot 6 down.

**5.6 Other functions**

* Show soft braille keyboard settings screen: Swipe dot 5 up
* Choose another keyboard: Swipe dot 5 down.
* Cycle through context menu options: Swipe dot 6 right.
* Select context menu option: Swipe dot 6 up.
* Switch between Braille grades: Hold dot 3 and swipe any finger on your right hand towards the right.
* Switch Braille tables on the fly: Switch between any Braille tables you have enabled in Soft Braille Keyboard settings to be switched to on the fly (see next section): Hold dot 3 and swipe any finger on the right hand down. If necessary the text to speech language will change to match the new language in use. Note this may take a second or two for the tts to complete this action.
* Set the mark hold dot 1 down and swipe any finger on your right hand to the right.
* Shrink the keyboard: hold down dot 1 and swipe any finger on your right hand to the left.
* Start voice dictation: Hold dot 3 and swipe any finger on your right hand up. You can also start dictation by holding a single finger down for 2 seconds. If talkback is enabled just double tap and hold for 2 seconds to start dictation.
* Hear the character, word and line count for the current text field: Hold dot 1 down and swipe any finger on your right hand down.
* Move to previous misspelled word: hold dot 4 and swipe any fingers on your left hand towards the left.
* Move to next misspelled word: hold dot 4 and swipe any finger on your left hand towards the right.
* Move to the next spell check suggestion for the current word: Hold dot 4 and swipe any finger on your left hand down.
* Move to the previous spell check suggestion for the current word: Hold dot 4 down and swipe any finger on your left hand up.

Please note that moving through the spell check suggestions will change the word in the text to the currently selected spelling suggestion. If you are unhappy with all of the suggestions you can continue swiping up or down until you hear the original word spoken followed by “misspelled” to put the original word back.

**5.7 Changing settings**

* Change the keyboard feedback (vibration /audible): Swipe dot 1 down.
* Change keyboard echo: Swipe dot 2 down.
* Toggle speaking during password input: Hold dot 6 and swipe any finger on the left hand down.
* Toggle the privacy screen: Swipe dot 4 up
* Toggle auto-capitalisation: Hold dot 1 and swipe any finger on your right hand up.

**6 Selecting text and interacting with the selection**

Soft Braille Keyboard allows you to mark a region of text and perform generic actions on the text.

**6.1 Selecting the text**

Move to some position in the text where you would like to set the first boundary of the region. This can either be the start or end of the text you will be operating on. Once you are in the right spot you can enable the mark by holding dot 1 and swiping any finger on the right hand to the right.

Now move the cursor with the standard motion commands eg. swiping dots 1, 2 or 3 left and right to move back and forward through the text by character, word and line respectively.

Once you are at the second boundary of the text you can perform any of the actions described below.

The active region is the text between the cursor and the mark.

**6.2 Actions on the selection**

Once you have an active region as discussed above you can cycle through the available actions to be performed on the region. To do this just swipe dot 6 to the right and you will hear all available options in the menu as you keep swiping. Activate any of these options by swiping dot 6 up.

The following actions can be performed on the region:

* Speak selection. Read back the text in the region.
* Copy. Copy the text in the region to the clipboard.
* Cut. Cut the text in the region.
* Paste. Paste text at the position of the cursor.
* Delete. Delete the text in the active region.
* Select all. Sets the active region to be the entire text.

**7 Soft Braille Keyboard Settings screen**

The settings screen for Soft Braille keyboard can be opened in the following ways.

* Navigate via settings -> language and input -> soft braille keyboard
* Open the soft Braille keyboard app and select “More options” -> “Settings”.
* When the keyboard is active swipe dot 5 up.

Each setting will now be discussed.

**7.1 Keyboard settings**

* Default keyboard style. Select the type of keyboard that should be displayed initially. The options are currently vertical (where you face the screen away from you),, horizontal and auto where the system selects the keyboard for you based on your screen size.
* Keyboard Style. Allows you to configure the arrangements of the actual Braille dots on the screen. The possible settings are “normal” which maps the Braille dots to their conventional fingers. Slate and stylus mode which swaps dots 123 with dots 456, so that left pointer triggers dot 4, left middle finger dot 5 and left ring finger dot 6. The right pointer performs dot 1, right middle finger performs dot 2 and right ring finger performs dot 3. The other mode is called “Swap dots 1 and 4 with dots 3 and 6”. This does exactly what it says so your left and right pointer fingers perform dots 3 and 6 respectively while your left and right ring fingers perform dots 1 and 4 respectively.
* Automatically select keyboard style based on the position of your fingers. When enabled you can switch between either keyboard layout just by positioning your fingers appropriately. Based on the position of your fingers Soft Braille Keyboard will choose the keyboard that is best for you. If you find this is not working for you it is best to disable it.
* Rotate keyboard with device. Allow the keyboard to follow the rotation of the device. If you have rotation turned off in Accessibility preferences or you would not want to use the keyboard with the device in portrait mode it is best to leave this setting unchecked.
* Invert keyboard: If the keyboard does not rotate with the screen of the phone and you find it is upside down then you can enable this setting to flip the keyboard orientation 180 degrees.
* Show 8 dot keyboard. Although you can enter dots 7 and 8 by flicking dots 3 and 6 downwards respectively you may prefer individual keys to touch for dots 7 and 8. If so check this setting and dots 7 and 8 will appear below dots 3 and 6 respectively when computer Braille is active.
* Show circles on screen. When this setting is checked small circles are displayed on the screen visually showing where the Braille keys are on the screen. You do not have to hit these circles exactly when typing.
* Swipe sensitivity. Configure how sensitive the swipe gestures should be. Available options are low, medium and high. Low means the gestures are not sensitive at all and you will need to use a bigger gesture.

**7.2 Braille tables**

* Default Braille grade. Set the default Braille grade to use currently computer Braille and literary Braille.
* Default computer Braille table. Select the computer Braille table you wish to use.
* Default literary Braille table. Select the default Literary Braille table you would like to use. This includes both grade 1 and 2 tables.
* Enable Braille tables for on the fly switching. Here you can tick the tables that you use often and would like to be able to switch between when typing. You can switch tables using the switch table gesture mentioned above.

**7.3 Keyboard feedback**

* Keyboard echo. Choose the type of keyboard echo you would like when you type. Options are None, character, word or both characters and words.
* Keyboard feedback. Choose what type of audible and haptic feedback you would like. Options are none, vibrate only, sound only or both vibration and sound.
* Speak passwords. When enabled this allows the keyboard to speak passwords in password fields. If disabled then the keyboard will just announce characters as \*.
* Echo misspellings as you type. When enabled misspellings are announced when a space is typed.

**7.4 Text To Speech Settings**

* Text To Speech Engine. Select the TTS engine you wish Soft Braille Keyboard to speak with. If none is selected the system default TTS engine is used.

**7.5 Miscellaneous settings**

* Auto-capitalisation. When enabled capitalises the first word of each sentence.
* Double space period. When enabled typing two spaces in a row quickly will insert a period followed by a space.
* Privacy screen. When enabled this setting blacks out the screen when the keyboard is active for privacy as you type.
* Two touch calibration. When enabled this allows you to calibrate the keyboard with two separate touches (with three fingers at a time) in addition to calibrating with six fingers. This is useful for devices that do not support six multi-touch points. See the calibration section for more details.
* Voice Input Shortcut. When enabled allows the long tap and hold with one finger or double tap and hold with a single finger while talkback is active to start voice dictation.
* Vibrate when keyboard closes. When enabled the device will vibrate when the keyboard closes.

**8 Supported Braille tables**

**8.1 Computer Braille**

* Chinese
* Chinese (Taiwan)
* Danish
* English (United States)
* Finish
* French
* Italian
* Polish
* Portuguese
* Romanian
* Russian
* Spanish
* Swedish
* Turkish

**8.2 Literary Braille**

* Czech (Grade 1)
* Dutch (Grade 1)
* English (UEB) (Grade 1)
* English UEB (Grade 2)
* English (United States) (Grade 1)
* English (United States) (Grade 2)
* French Canada (Grade 1)
* French France (Grade 1)
* German (Grade 1)
* Greek (Grade 1)
* Italian (Grade 1)
* Polish (Grade 1)
* Portuguese (Grade 1)
* Russian (Grade 1)
* Slovak (Grade 1)
* Spanish (Grade 1)
* Swedish (Grade 1)
* Vietnamese (Grade 1)

**9 Notes for specific Braille tables**

For some Braille tables we have had to make some minor changes to the way that certain characters are typed. Please consult the appropriate section for your table to see what changes have been made.

**9.1 Italian grade 1**

Some characters can not be typed with their conventional Braille pattern. Instead we have added a common prefix to these characters, so that they are easy to remember.  The following table summarises this.

|  |  |
| --- | --- |
| Character | Braille Pattern |
| # | 5-3456 |
| + | 5-235 |
| % | 5-123456 |
| & | 45-12346 |
| / | 5-256 |
| | | 5-34 |
| - | 5-12356 |
| ] | 5-23456 |
| { | 5-12346 |
| } | 5-13456 |
| ^ | 45-2346 |
| ` | 5-345 |
| ´ | 5-1256 |
| ~ | 5-2346 |
| $ | 5-46 |
| € | 5-15 |
| ‘ | 45-236 |
| ’ | 45-356 |
| ✕ | 46-236 |
| ∕ | 46-256 |

**9.2 Polish grade 1**

Some characters can not be typed with their conventional Braille pattern. Instead we have added a common prefix to these characters, so that they are easy to remember.  The following table summarises this.

|  |  |
| --- | --- |
| Character | Braille pattern |
| # | 3456-3456 |
| + | 3456-235 |
| ∕ | 3456-256 |
| = | 3456-2356 |
| ( | 46-2356 |
| $ | 46-256 |

**9.3 Spanish Grade 1**

Some characters can not be typed with their conventional Braille pattern. Instead we have added a common prefix to these characters, so that they are easy to remember.  The following table summarises this.

|  |  |
| --- | --- |
| Character | Braille Pattern |
| $ | 6-256 |
| + | 6-235 |
| ✕ | 6-236 |
| [ | 6-12356 |
| ] | 6-23456 |
| ` | 6-45 |
| ~ | 46-256 |

**9.4 Slovak Grade 1**

Some characters can not be typed with their conventional Braille pattern. Instead we have added a common prefix to these characters, so that they are easy to remember.  The following table summarises this.

|  |  |
| --- | --- |
| Character | Braille Pattern |
| # | 56-3456 |
| + | 56-235 |
| > | 56-345 |
| < | 56-126 |
| = | 56-2356 |
| \_ | 56-456 |
| × | 56-3 |

**10 Problems, feature requests and feedback**

Please contact the author Daniel Dalton with any comments, feedback or issues that you have found. I would like to hear from you.

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