

# BraillePen 12 Touch

Bluetooth Braille keyboard



User Guide



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# Quick Start

If you want to jump straight to the section covering your device - iPhone, Talks phone or something else - use the links in the Table of Contents on the previous pages.

Do come back later and read the rest of your User Guide - it's helpful information!

## What's in the box?

Your new BraillePen 12 Touch comes in its own carton, and it is packaged carefully for transport in foam packaging. Please keep the carton and foam packaging safe; if you ever need to ship your BraillePen 12 Touch anywhere, this packaging will help to keep it from damage in transit.

- The BraillePen 12 Touch
- BraillePen 12 Touch Pouch
- BraillePen 12 Touch lanyard
- The AC adapter, with appropriate mains lead for your country
- This User Guide in Print and Electronic formats
- BraillePen Write software on CD
- Optional: 1 USB Bluetooth adapter

Please check the contents of the box carefully as soon as you receive it. If anything is missing or appears damaged, please contact your distributor immediately.

## Regulatory information

This equipment has been developed and tested in order to comply with the EMC and safety requirements of the following directives:

EN 300 328  
EN 301 489-1  
EN 301 489-1  
EN 55022  
EN 61000-4-2  
EN 61000-4-3  
EN 60950-1  
EN 60601-1

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



This device bears the CE and FCC approval mark.

## Trademark information



Bluetooth™ is a trade mark of the Bluetooth Special Interest Group, [www.bluetooth.com](http://www.bluetooth.com).

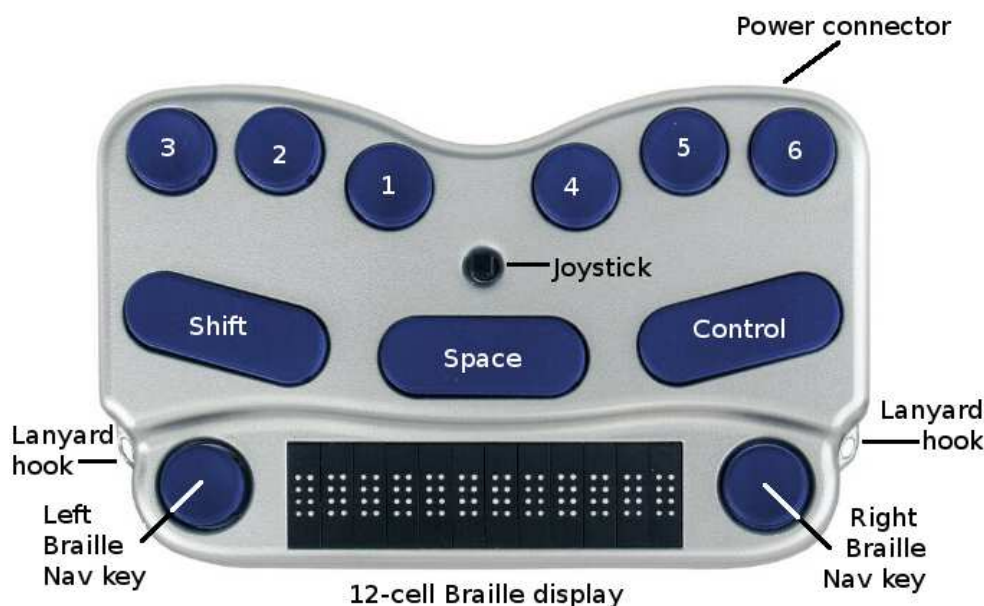
Microsoft® and Windows® are registered trademarks of Microsoft Corporation.

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## Your BraillePen 12 Touch at a glance

## Exploring the BraillePen 12 Touch



*Illustration 1: The BraillePen 12 Touch, with all features labelled.*

Your BraillePen 12 Touch has a 6-dot Braille keyboard, with the keys from left to right: **dot 3**, **dot 2**, **dot 1**, **dot 4**, **dot 5**, **dot 6**. Below the Braille keys there are three function keys, from left to right: **shift**, **space** and **control**. In the centre of the keyboard area, between the Braille keys and the function keys there is a joystick with 5 directions of movement: left, right, up, down (towards you) and enter, which is activated by pressing the joystick towards the keyboard until it clicks.

Below the keyboard area is the Braille area. In the centre of the Braille area you will find the 12-cell refreshable Braille display, with one round Braille navigation key either side of the display. These keys are known as **left pan** and **right pan**, or **left nav** and **right nav**.

On the rear edge, the connector for the battery charger is situated at the right-hand side; on each side towards the front are two loops for attaching the lanyard.

To use the BraillePen 12 Touch pouch, open the pouch and locate the velcro patches inside. This is the base of the pouch; place your BraillePen 12 Touch on these, keys uppermost, so that the velcro dots on the base of the BraillePen 12 Touch attach to the velcro patches on the pouch. Close the pouch snugly with the velcro strip.

## Switching BraillePen 12 Touch on and off

Switch your BraillePen 12 Touch on by pressing the following keys simultaneously: **space**, **dot 1** and **dot 3**.

When the BraillePen 12 Touch is on, the display will show 

Use the same key combination to switch the unit off. You will hear beeps to tell you whether you have switched off or on.

## BraillePen 12 Touch sound signals

BraillePen 12 Touch communicates its status using high-pitched beeps. When you first turn your BraillePen 12 Touch on, it gives several beeps.

First you hear a single short beep to let you know that the BraillePen 12 Touch is on.

Then you hear a set of beeps to tell you the battery status.

The third set of beeps tells you that the BraillePen 12 Touch's Bluetooth interface is active and can make a connection with another device.

The sound for "BraillePen 12 Touch on" and the sound for "Bluetooth active" don't change; the battery sounds will change depending on how much charge there is. Here is the full list of battery status beeps:

One long beep, pause, three short beeps means that the unit is not connected to the power and the battery is fully charged.

One long beep, pause, two short beeps means that the unit is not connected to the power, and the battery is charged to half its capacity.

One long beep, pause, one long beep means that the unit is not connected to the power, and that the battery is drained and needs to be recharged immediately.

Two mid-length beeps means that the unit is connected to power and the battery is charging, but doesn't report on the state of the battery.

Two mid-length beeps, pause, three short beeps means that the unit is on charge, and the battery is already fully charged.

## BraillePen 12 Touch Menu

BraillePen 12 Touch has its own internal menu. It allows you to customize certain settings. The settings are as follows:

Battery indicator

Sleep time x minutes

Beeps on or off

Vibrate

Cell test

Key test

BT test (Bluetooth test)

Firmware version

Cbrd run off

Exit

To enter the menu, Press space control immediately after you turn the unit on. Do not wait for any beeps or chirps. You navigate among the menu items by pressing Joystick up or down. When, for example, you want to check if all the Braille cells are in the good shape, go to the Cell Test, press space control and wait for the test to complete. When the test is complete, you will receive confirmation on the braille display reading Cells OK.

To exit the menu item, press space control.

When you have made all the changes, exit the menu by moving down to EXIT and pressing Space Control or Joystick Enter.

## Connecting the BraillePen 12 Touch

Before switching your BraillePen 12 Touch on, make sure you first turn on the device you want to connect to. When your device is on, then turn the BraillePen 12 Touch on by pressing **space** and **dots 1 and 3** together.

Sometimes the connection can take up to 20 seconds to complete, after both devices have been switched on. Listen for the triple-beep that tells you BraillePen 12 Touch's Bluetooth interface is active, and allow up to 20 seconds from there.

If you are connecting to a PC or netbook for the first time, you will need to discover the BraillePen 12 Touch as a Bluetooth device. Once discovered, the connection will be made automatically every time after that.

If your BraillePen 12 Touch's battery is getting a little low, you might notice that it's more difficult to connect to other devices, or to stay connected. Recharge the battery, and then consult the Care and Resources section of this manual to find out how to reset your BraillePen 12 Touch.

### ***Bluetooth Adapter Types***

BraillePen 12 Touch is compatible with four adaptor types: WIDCOMM, Toshiba, Microsoft and BlueSoleil. The instructions here apply to those Bluetooth adapters using the Microsoft Bluetooth drivers. If your Bluetooth doesn't work as described, check in the Care and Resources section for connection information for other Bluetooth discovery methods.

### ***Under Windows XP***

First turn on your BraillePen 12 Touch, and wait for the triple-beep. Next go to the Control Panel and choose Bluetooth. Select Add a Device and wait while Windows discovers the device.

The MAC address of the BraillePen 12 Touch, a series of letters and numbers beginning with BP, will appear in the window; there could also be other devices such as other computers or phones. You should select the BraillePen 12 Touch's identifier as your device and click Next.

You will be asked whether you want to enter a pairing code or allow the device to pair without a code. We suggest pairing without a code if you are pairing for the first time; you can remove the BraillePen 12 Touch from the list of devices and pair again with a code later if you wish.

Once you have chosen and clicked Next, the BraillePen 12 Touch and your computer will be paired.

### ***Under Windows Vista or Windows 7***

First, turn on your BraillePen 12 Touch and wait for the triple-beep.

Go to Control Panel and select Devices and Printers. Choose Add a Device.

So long as you have Bluetooth on the computer and your BraillePen 12 Touch's Bluetooth is active, the MAC address of your BraillePen 12 Touch will appear in the window. Select this and click Next.

You will then have three choices; enter a code you already know, have Windows assign a code, or pair without a code.

## Navigating using BraillePen 12 Touch

Using your BraillePen 12 Touch to navigate is made easier with the use of the Joystick.



We have used these conventions for naming the keystrokes:

<b>joystick left</b>	Push the joystick horizontally, so it bends towards the left
<b>joystick right</b>	Push the joystick horizontally, so it bends towards the right
<b>joystick up</b>	Push the joystick horizontally, so it bends away from you
<b>joystick down</b>	Push the joystick horizontally, so it bends towards you
<b>joystick enter</b>	Push the joystick, with your finger on the top, straight down towards the BraillePen 12 Touch.

These keystrokes perform the following actions:

<b>joystick left</b>	Move the cursor left one character or one tab or menu item
<b>joystick right</b>	Move the cursor right one character or one tab or menu item
<b>joystick up</b>	Move the cursor up one line or one menu item
<b>joystick down</b>	Move the cursor down one line or one menu item
<b>joystick enter</b>	Enter: confirm or activate a selection.

In some software you will use, **joystick enter** can't be used to end a paragraph in text; for that keystroke you might need to use the keyboard-based Enter, which is usually **space + control**. Check the keystrokes for your software to make sure.

## Moving the Cursor in your Applications

BraillePen 12 Touch makes text navigation efficient and convenient. You have three methods with which you can control text on your BraillePen 12 Touch braille display:

1. Pan keys
2. Rotor settings (with iOS devices)
3. ActiveTouch Cursor Routing.

Although BraillePen 12 Touch is so compact and easy to work with, you can further improve your text navigation by using ActiveTouch Cursor Routing. The system is based on a 12-channel Touch Sensor and does not require any physical routing keys.

All you have to do is find the character on the braille display that you would like to bring the cursor to, slide your finger towards the top of the braille cell and touch the sensor set in the ActiveTouch Sensor plate. You may feel a subtle vibration indicating that the cursor (dots 7 and 8) has been routed and you will start feeling the cursor blinking under your finger.

The time needed to have your finger touch the sensor has been optimized to avoid accidental cursor routing and at the same time to ensure there are no delays in reading.

When you continue scrolling text using the Pan keys, the cursor stays put at the position you have routed it to. But once you wish to bring it to a new character, slide your finger up to touch the sensor and the cursor will be brought to its new location.

To activate the cursor routing indicator, go to menu (**see BraillePen 12 Touch Menu section**). Using the Joystick arrow down to Vibrate. Once you have found the setting you want to change, press Enter (Space + Control). You can select off, or you can incrementally change the duration of the vibration by 10 starting at 10 ms up to 200 ms. You make the selection by pushing the Joystick up or down. Press Enter again (Space + Control) to confirm the change. Follow the same steps to adjust the other cursor indicator setting and once your done, arrow down to Exit and press Joystick Down to exit the menu.



The requirements for cursor movement vary between the applications you will use, on your phone, tablet or PC, but we have included some cursor movement and text selection keystrokes to get you started.

To move the cursor in text, you will usually find that these keystrokes will work:

<b>control + dot 1</b>	Left
<b>control + dot 4</b>	Right
<b>control + dot 5</b>	Up
<b>control + dot 2</b>	Down

These keystrokes have the same effect in BraillePen Write, for instance, as if you used the Joystick to move the cursor.

To move word by word, press control while you move the Joystick: **control + joystick left** will move the cursor one word to the left, while **control + joystick right** will move the cursor one word to the right.

To select text, press **shift + control + joystick right** to select from the cursor to the end of the word.

Always check the keystrokes for your application to make sure.

## BraillePen 12 Touch Clipboard

### *Introduction*

BraillePen 12 Touch has a built-in feature called the Clipboard. You can use it at any time without having to connect your keyboard with any device. Information entered from the Braille keyboard is saved immediately into the BraillePen's memory. You can also review what you have typed using the two Pan keys. If needed, you can transfer the content of your Clipboard to a different device, e.g. iPhone, using the Bluetooth connection. It needs to be remembered that the data in the Clipboard is stored as a combination of the key presses rather than as characters, as it may affect the transfer process.

### *How to use the Clipboard*

#### Switching on the Clipboard

To activate the Clipboard, turn your BraillePen 12 Touch on by pressing space + dots 1 3. When your keyboard is ready, press simultaneously three keys, Left Pan + Shift + Dot 3. The BraillePen 12 Touch will beep and now you can begin writing into the memory. The cursor is always put at the end of text. It means that regardless of what is displayed on the Braille line, entering any key combination will scroll the content to the end where new text is appended. The Clipboard can store up to 500 characters. When it is full, no more key strokes will be added and you will hear a short beep.

#### Deleting

To delete a previous character, press Left Pan + dots 1 2 3. This combination functions just like Backspace on the PC keyboard.

### **Emptying the Clipboard**

To remove the content from the Clipboard, Press Left Pan + Right Pan + dots 123456. Remember that this operation cannot be reversed.

### **Exiting the Clipboard**

To exit the Clipboard press Right Pan + Ctrl + dot 6. The BraillePen 12 Touch will beep. All your data will be automatically saved in the memory.

### **Browsing the Clipboard**

To browse the content of the Clipboard, press the left or right Pan Key. Each press will advance the content by 12 characters left or right respectively. To move to the top or bottom of your text press the Left and Right Pan Keys together.

### **Transferring data to an external device**

To begin the data transfer to an external device both the BraillePen 12 Touch and the other device have to be switched on, paired, and active. An edit field must be running on your external unit, e.g. an edit box in the messaging application. When both of your units are ready, press Left Pan + Right Pan + Space. The transfer will begin. The data will be entered word by word. The transfer rate has been set to provide comfortable speed without compromising the correctness of the transferred data.

### **Using the Clipboard while working with an external device**

It is still possible to use the Clipboard even when your BraillePen 12 Touch is connected to an external device. By default, this option is disabled. To enable it, you need to open the menu. First turn the BraillePen 12 Touch on and immediately after pressing space + dots 1 3, press Space + Control. The Braille display will show the battery status. Using the Joystick Up/Down find option called “cbrd run off”. When it is displayed on the Braille line, press Joystick Action to activate the option, and then Joystick Down to change to “on”. Confirm your selection with Joystick Action. Now you can exist the BraillePen menu by arrowing to the Exit option and pushing down the joystick. From now on, you can run the Clipboard regardless of whether your BraillePen 12 Touch is connected or not to an external device. All you have to do is press Left Pan + Shift + Dot 3 and you are ready to enter text to the Clipboard. The BraillePen 12 Touch will switch to an autonomous mode and the communication with an external device is suspended until you exit the Clipboard.

### ***BP Clipboard keystrokes:***

Action	Keystrokes
Switch on Clipboard	Left Pan + Shift + dot 3
Exit Clipboard	Right Pan + Ctrl + dot 6

Delete (Backspace)	Left Pan + dots 1 2 3
Empty Clipboard	Left Pan + Right Pan + dots 1 2 3 4 5 6
Transfer data	Left Pan + Right Pan + Space
Pan left	Left Pan
Pan right	Right Pan
Top/bottom	Left Pan + Right Pan

# Using BraillePen 12 Touch with Apple iDevices

## To pair your BraillePen 12 Touch with your iDevice:

You will only need to perform this exercise once; once paired, unless you reset your iDevice, it will know about your BraillePen 12 Touch indefinitely.

On the iDevice, in Settings, General, page down to accessibility, then go to VoiceOver and then down to Braille.

Switch on the BraillePen 12 Touch using **space + dots 1,3**.

Once you hear the triple-beep on the BraillePen 12 Touch, it will appear in the list of Braille devices to choose from; its name will begin with EL12 in the list of discovered devices. Single-tap the device name to select it; double-tap the device name to initiate the pairing.

You will be taken to a passcode entry screen; enter the passcode 1234. Use a one-finger flick right to select each digit and then a double-tap to enter it. Then flick left 6 times to the Pair control and double-tap to activate it. It is important to enter the passcode and complete the process within the short time allowed.

You will hear a single beep to tell you that BraillePen 12 Touch is now connected to the iDevice.

If you don't complete the process quickly enough, the iDevice may come back to you and tell you that pairing failed; sometimes, after this has happened, the iDevice can't find the BraillePen 12 Touch. In this case you need to go to Settings, General, Reset and choose Reset all Settings. Then you can start the pairing process from the beginning.

When using a BraillePen 12 Touch with VoiceOver using iOS 4.1 or later, you can use the following key commands, or chords, to navigate.

## Getting to know the iPhone

To go to the speech, VoiceOver, practice area: Settings, General, page down to Accessibility, VoiceOver, and practice. Press Home Button when you are done practising.

Function	Key or Gesture
Switch on or off	Hold down power button for 5 seconds
Unlock iPhone	Right swipe bottom of screen
Explore icons	One finger right or left swipe or one finger touch and move about screen
Turn VoiceOver off or on	Three presses home button - if you have set this up in Accessibility Settings
Stop or start podcast/video	Two finger tap anywhere
Privacy screen curtain on or off	Three finger triple tap
Turn app switcher on or off (just four icons per screen, less confusing )	Double press home button
Volume control	Two rectangular buttons top left side
Read strength of phone signal	Very top left of screen
Read time	Middle of very top of screen
Battery strength	Right of very top of screen
Rotary choices (words or characters, links or headings and so on)	Two fingers, like turning a knob
Reset iPhone	Hold the home button and press the power button (you don't lose date)

## iDevices Affected:

iPod touch (3rd generation), iPhone 4, iPhone 3GS (8GB), iPod touch (4th generation), iPad2, iPad3.

VoiceOver action	Braille device keys
Move to previous item	joystick left or space + dot 1
Move to next item	joystick right or space + dot 4
Move to previous item using rotor setting	joystick up or space + dot 3
Move to next item using rotor setting	joystick down or space + dot 6
Select item under your finger	joystick enter or space + dots 3 6
Pan Braille to the left	pan left
Pan Braille to the right	pan right
VoiceOver action	Braille command (chord)
Activate a Back button if present	space + dots 1, 2
Activate the Delete key	space + dots 1, 4, 5
Activate the Backspace key	shift + space
Activate the Eject key	space + dots 3, 4
Activate the Home button	space + dots 1, 2, 5
Activate the Return key (choose)	space + dots 3, 6
Activate the Return key (new line)	space + dots 1, 5 or ctrl + space
Activate the Tab key	space + dots 2, 3, 4, 5
Activate the Volume Down button	space + dots 1, 2, 6
Activate the Volume Up button	space + dots 3, 4, 5
Copy selection	space + dots 1, 4
Cut selection	space + dots 1, 3, 4, 6
Deselect text	space + dots 2, 3, 5
Display announcement history	space + dots 1, 3, 4, 5
Go back a screen/page	space + dots 2, 4, 6
Go to new screen/page	space + dots 1, 3, 5
Go to the Status bar	space + dots 2, 3, 4
Move to next item	space + dot 4
Move to next item using rotor setting	space + dot 6
Move to previous item	space + dot 1
Move to previous item using rotor setting	space + dot 3
Move to the first element / go to top	space + dots 1, 2, 3
Move to the last element / go to bottom	space + dots 4, 5, 6
Pan Braille to the left	space + dot 2
Pan Braille to the right	space + dot 5
Paste	space + dots 1, 2, 3, 6
Pause or Continue speech	space + dots 1, 2, 3, 4
Phone signal strength	space + dots 2, 3, 4
Turn the Screen Curtain on or off	space + dots 1 2 3 4 5 6
Read page number	space + dots 1, 3, 6

Read page starting at selected item	<b>space + dots 1, 2, 3, 5</b>
Read page starting at the top	<b>space + dots 2, 4, 5, 6</b>
Select next rotor setting	<b>space + dots 5, 6</b>
Select previous rotor setting	<b>space + dots 2, 3</b>
Select text	<b>space + dots 2, 5, 6</b>
Switch between contracted and uncontracted Braille	<b>space + dots 1, 2, 4, 5</b>
Switch BraillePen on or off	<b>space + dots 1, 3</b>
Toggle speech on and off	<b>space + dots 1, 3, 4</b>
Toggle 8-dot Braille on and off	<b>space + dots 2, 3, 6</b>

## Handy hints

### ***Editing your text in a note or text message***

Set your Rotor to Characters using **space + dots 2,3** or **space + dots 5,6**.

Then use the "move using rotor settings" keystroke: **space + dot 3** to move left, and **space + dot 6** to move right.

The standard movement keystrokes - space + dot 1 and space + dot 4 - will still move you from element to element within the Notes app or the Messaging app.

### ***Selecting text to copy/cut/paste***

Using the rotor settings (space 2, 3 or space 5, 6) select the steps by which you want to select text (characters, words, or lines) and then use following keystrokes:

Select text: **space + dots 2, 5, 6**

Select all: **space + dots 2 3 5 6**

Deselect text: **space + dots 2, 3, 5**

Placing the cursor in the right position before you select a desired fragment is a bit tricky. When you move from left to right by word, you will hear the word you want to begin your selection from. Before you press space + dots 2, 5, 6, you will need to push Joystick Up to place the cursor at the beginning of your selection. Now you can begin highlighting your word(s).

Note: When you move from right to left, you can begin selecting once you hear the word you want to start your selection from.

Upon selecting text, press **space + dots 1 4** for copying, or **space + dots 1 3 4 6** for pasting. When you copy your selection, VoiceOver reads it out and says Selected. Now you can move your insertion point to the location where you want to paste your selection. Press **space + dots 1 2 3 6** for paste.

Should for some reason the keystrokes for copying/cutting/pasting did not work for you, you can change the Rotor Settings to Edit, then by pressing Joystick Up go to Copy or Cut, and push Joystick Enter.

Your next step is to paste the selection to a new location. Using the Rotor Settings, switch to Words, move the cursor to your required location, change the Rotor Settings back to Edit and using the Joystick down or up select Paste. Eventually, push Joystick Enter and your selection will be pasted. Having finished this operation, go back to the navigation steps – Words/Character/Lines – to continue to edit your document.

## ***Using BraillePen with Webpages in Safari on iOS devices***

### **1. Entering a URL:**

- When you run Safari, the focus sits on the last item when you left off. You need then go to top with space dots 1 2 3, and then arrow towards the address bar with space 4 or space 5. The latter is faster because it does not advance the information on the Braille display (in case of BP 12). Once you land on the address bar, push Joystick Enter or space 3 6 twice to activate the text field. If there is no previous Website, you can start typing your URL, otherwise you need to delete the current address. The most effective way is to select all and then overwrite it with new text.
- To select text, press space dots 2 3 5 6 and push Joystick Enter or space 3 6. Alternatively you can change your Rotor Settings to Edit, push Joystick Up or press space 3 until you hear select all and then either push Joystick Enter or press space dots 3 6.
- Your text gets selected and you can type a new URL. For dots (or periods) use dots 4 6 when in the uncontracted Braille mode, or dots 256 when in the contracted Braille mode. When your URL is complete press Selection Enter (Joystick Enter or space dots 1 5). Now you can begin browsing your newly open page. Use different navigation combinations of space with dots 1, 4, 3, or 6.

### **2. Navigating Webpages:**

- Use rotor settings to change between available options: Heading, Link, Form Controls, Characters, Words, Lines, or Containers. Whatever your selection VO will announce how many of them are available on the particular Webpage.
- Use space 3 or space 6 to navigate by your selected steps. Even if the focus is on the task bar, once you press one of the above combinations it will be automatically moved to the first item, e.g. the first heading.
- Once you hear an item of your interest you can press space 2 or space 5 to navigate through elements that belong to your item, e.g. You have found a heading, now you want to check information under this heading. Or you are at top of a list, and now you want to browse the list.
- When you land on a link that interests you, select it by pressing space dots 3 6.
- To go back a Webpage, press space dots 1 2 3, to the Back button on your browser and press Enter.
- Whenever the Reader is available VO will announce it (to see an example of how the Reader works go to [www.aph.org/training/index.html](http://www.aph.org/training/index.html)). You can navigate to it by using space dot 4 and activate it by pressing Joystick Enter or space dots 3 6. A page with text in a simplified format pops up and VO begins to read the content automatically. You can stop it using space dots 1 2 3 4, and resume reading with space dots 1 2 3 5. As VO is reading text, it informs you if text is a heading or a link. All the links are active so you can follow them by pushing Joystick Enter.

Again depending on your Rotor Settings selection you can navigate the page using space dots 3 or 6 and then space dots 2 and 4 to read the content of the page.



# BraillePen with Mobile Accessibility for Android

(Version 1.9)

Mobile Accessibility Braille support is similar to what is available in Mobile Speak 4 and above. With advance user configuration options and simple connection / setup process, accessing Android device with Braille device is much more fun.

Mobile Accessibility can provide output through electronic refreshable Braille devices. Both text and control information will be available in Braille as you navigate around. Furthermore, using devices with Braille input keys, you can type text in any of the supported Braille grades and languages.

## Pairing Braille Devices:

Pairing Braille device is simple and is similar to any Bluetooth device pairing with the phone. First step in using Braille with Mobile Accessibility is to pair the Braille display with your Android powered Mobile device. Please check the documentation for your Braille device to find out the passcode used to connect with other devices. This may be specific to the serial number of the Braille device unit. Otherwise, you may use any string of numbers, normally no shorter than four digits, like 1234 which is the default passcode used by most Bluetooth-enabled devices. All Bluetooth devices use an authentication number when users attempt to establish a connection between them, thereby securing that connection. Follow the below steps to pair your display.

1. Start your braille device, check the device manual for instructions to start and enable Bluetooth on the device.
2. Go to Mobile Accessibility > Apps > Settings > Wireless and Network > Bluetooth Settings.
3. Check the option "Bluetooth".
4. In the same window use, "Scan Devices" to let the device scan nearby Bluetooth devices.
5. After few seconds, Scroll in the window to find your Braille display device.
6. It will prompt you to enter passcode / pin for the device.
7. Enter the pin of the device, for pin information for pairing, check the device user manual.

## Configuring Braille Display with Mobile Accessibility (Post pairing Braille display with phone)

1. Go to Mobile Accessibility > Settings > Braille Settings.
2. Activate the option "Braille Device"
3. In the list select the Braille device you wish to use. This list contains all the Bluetooth device paired with the phone.
4. Stay in the braille settings and activate the option "Device Model"

5. In the list, select the model of the braille device you wish to use. The list contains all supported models with their manufacturer name.
6. Exit the Braille settings and the setting window, congratulations, the braille device is configured.

## **Removing Braille Display configuration.**

Follow the below steps

1. Go to Mobile Accessibility > Apps > Settings > Wireless and Network > Bluetooth Settings.
2. Check the option “Bluetooth”.
3. In the same window, scroll down to find the device you wish to remove.
4. Hit Long enter on the device and select “Unpair”

## **Enabling / Disabling Braille**

To enable or to start braille with Mobile Accessibility:

1. Activate quick menu, use the menu key or triple tap the screen within Mobile Accessibility window.
2. Select the option “Enable Braille”.
3. Mobile Accessibility will beep and will announce “Braille Ready”.

To disable or to stop Braille with Mobile Accessibility:

1. Activate quick menu, use the menu key or triple tap the screen within Mobile Accessibility window.
2. Select the option “Disable Braille”.
3. Mobile Accessibility will beep and will announce “Braille off”.

## **Braille Configuration options:**

Location: Mobile Accessibility > Settings > Braille Settings:

1. Braille Device: the option lists all the Bluetooth devices paired the phone, you need to select the braille display you wish to use with Mobile Accessibility.
2. Device Model: the option lists all the supported Braille device models with their manufacturer name, you need to select the model of the braille device been selected in the Braille device option.
3. Show control Indicator: checkbox (selected by default) – apart from text, Mobile Accessibility also helps you determine if focus is on a control, and to know the control type and state. Language-dependent Braille indicators for control information are also displayed before the label of the control in focus. Indicators are always displayed in computer Braille, no matter what Braille grade is set, and dots 7 and 8 appear in all their cells to help distinguish them from regular text. If the control does not change state, then the Braille indicator consists of only two characters which are letters that relate to the control type name. The letters used in the indicators also vary according to the language of the selected text-to-speech engine. For example, a button is indicated by the letters bt in English, but by the

letters kn in Dutch where a button is called "knop". On the other hand, if the control changes state, then there is a third character in the indicator, which is a symbol that is kept constant in all languages though the dot patterns may differ. For example, a full 6-dot cell will indicate that a checkbox or radio button is checked/pressed, while dots 3,6 means that it is not checked or selected.

4. Uncontract word under cursor checkbox (selected by default) - this option will cause the word under the cursor to be expanded to its uncontracted form if Grade 2 / contracted Braille is selected for output. It lets you route the cursor more quickly on a character in that word if you want to insert text at that point, delete that character, or delete the one before it.
5. Suppress capital Sign: checkbox (not selected by default), the option allow you to enable suppressing of the capital sign when displaying text in the braille display. This option is useful for small braille device so the maximum text can be displayed.
6. Show control Prompts: check box (selected by default), the option allow you to see prompts associated with certain controls. If the option is disabled, the help prompt if available for the control, will not be available on the Braille display.
7. Automatically Mute Speech: checkbox (not selected by default) the option allow you to mute speech as soon as braille is enabled. This option is useful for Deaf blind users and for those wish to use the phone with braille display in meeting place.
8. Display Caller ID: allow you to select the action that Mobile Accessibility will perform when the device receives a call. The available options are: Display caller ID-on the braille device, shows the caller information on the braille display as long as the phone keeps ringing, Braille Flash-shows caller information on braille device as a flash message and Do Nothing-will not show the caller information on the device.

## **Grades and Braille Table configurations:**

Location: Mobile Accessibility > Settings > Braille Settings > Grades and Tables

1. Input Braille Grade: allow to select the braille grade for input (typing text using Braille keys).
2. Out Braille Grade: allow to select braille grade for output (text displayed on the braille device).
3. 6 Dot computer Braille table: allow to select the 6 dot computer braille table for output and input in 6 dot computer braille.
4. 8 Dot computer Braille table: allow to select the 8 dot computer braille table for output and input in 8 dot computer braille.
5. Grade 1 Braille table: allow to select the Grade 1 braille table for output and input in grade 1 literary braille.
6. Grade 2 Braille table: allow to select the grade 2 braille table for output and input in grade 2 (contracted) braille.

## **Braille Connection Settings:**

Location: Mobile Accessibility > Braille Settings > Connection Settings

1. Keep Phone On: check box (not selected by default) allows preventing the phone to go in sleep, so when the braille device is connected, the phone would not go in sleep and will enable user to stay connected.

2. Automatically Reconnect: checkbox (deselected by default) - if this option is enabled, Mobile Accessibility will attempt to reconnect your phone with the Braille device if the connection was dropped or after the mobile device starts up. It will attempt the reconnection 30 seconds after the devices were disconnected or the end of the start-up process.
3. Automatically Turn off Bluetooth: checkbox (deselected by default) - if this option is enabled, Mobile Accessibility will automatically disable Bluetooth as soon as the command to disable Braille off is performed to break the connection between the Braille device and the mobile phone.
4. Speak Braille Status: check box (selected by default), enable Mobile Accessibility to announce the connection status when activating / deactivating Braille.

## **Enabling Braille Support outside Mobile Accessibility**

In order to have Braille support outside MA, it is important to:

1. Mobile Accessibility Screen reader service enabled under Accessibility settings. Check user manual section [5.3.2 Enabling the system wide virtual keyboard](#)
2. Mobile Accessibility Virtual keyboard must be enabled for system wide use. Check User manual section [5.3.2 Enabling the system wide virtual keyboard](#)

Please note, navigation, typing text and text review functionality should will not work if MA screen reader and Virtual keyboard are not correctly set.

## **Quick Menu > Edit options**

(Version 1.9)

The option is only available if the currently focussed control is an edit field. The option allows you to perform editing options, like selection, copy, cut and paste. Braille commands are available for performing edit action when using a braille display with Mobile Accessibility. In specific the options are:

1. Select all, allow selecting the entire text in the edit field so to be able to copy or cut or delete text.
2. Copy, allow copying the text to the clip board and retaining the text in he edit field as well.
3. Cut, allow to cut the text to the clip board and also deletes the text from edit field.
4. Paste, allow to paste the text from the clip board to the edit field.

## **Entering and Editing Text Using Braille**

When focus lands on an edit control, Braille output automatically switches to edit mode so that Mobile Accessibility displays the text cursor by raising dots 7 and 8. At present, this tactile cursor is only available when 6- or 8-dot computer Braille is selected. If there is an uppercase character at the cursor position, the dots will alternate; meaning that dot 8 is raised while dot 7 is not. If text selection commands are used, dots 7 and 8 will both appear in all the cells of the selected text.

When typing text using Grade 1 or 2 Braille, remember that the text is not translated until you press Space or Enter, or perform a command that moves focus or displays a message. Keep in mind that the Braille grade used for input is not necessarily the same one set for Braille output, so use the appropriate commands for configuring input and output Braille grades in order to be certain.

You can use the backspace command assigned to the key combination specific to your Braille device while typing in whichever grade to delete the character to the left of the text cursor. Note that this command may be used even before the text typed in grade 1 or 2 Braille is translated. If you wish to clear everything you have typed so far that has not yet been translated, use the Braille Escape command available on all supported Braille devices.

## Braille Output Mode

In Mobile Accessibility, screen contents are displayed in Braille in a way that will give you an idea of visual information such as format, hierarchy, control type, and state. This is the default Braille output mode called "Braille format". In this mode, Mobile Speak sends information to the display that is relevant to the current cursor position. The information sent includes things such as control type, dialog name, or number of items in a list (where the list index is not really displayed visually).

It is possible to change the Braille Output mode to "Speech emulation". In this mode, Mobile Accessibility sends to the Braille display exactly what it sends to the speech engine. Instead of Braille indicators for control information, the words that are spoken by Mobile Accessibility when it comes across that control are displayed. For example, in Braille Format mode, li and bt are used to indicate the list and button. In Speech Emulation mode, the words "list" and "button" are shown in Braille instead.

Each Braille device has its own Braille command for switching between these two Braille output modes.

## Braille Commands

Command Description (ANDROID)	Keystrokes
Simulate Enter key	<b>Joystick Enter, or Space+E</b>
Simulate Space key	<b>Space</b>
Braille Backspace	<b>Space+B</b>
Delete Key	<b>Space+dots 45</b>
Braille Escape (to clear G1 or G2 text buffer)	<b>Shift+Space</b>
	<b>Shift</b>
	<b>Control</b>
Previous Control	<b>Space+dots 23</b>

Next Control	Space+dots 56, or Space+Ctrl
Previous character	Space+dot 3, or Joystick Left
Next character	Space+dot 6, or Joystick Right
Previous line / List Item	Space+dot 1, or Joystick Up
Next line / List Item	Space+dot 1, or Joystick Up
Previous Word	Space+dot 2, or Ctrl+Joystick Left
Next Word	Space+dot 5, or Ctrl+Joystick Right
Previous Paragraph	Space+Shift+dot 3, or Ctrl+Joystick Up
Next Paragraph	Space+Ctrl+dot 6, or Ctrl+Joystick Down
Page Up	Space+Shift+dot 2
Page Down	Space+Ctrl+dot 5
Start of Line	Space+Shift+dot 1
End of Line	Space+Ctrl+dot 4
Top of Text or List	Space+dots 123
Bottom of Text or List	Space+dots 456
Read from the top	Space+Shift+dots 123, or Ctrl+Left Pan
Read from cursor position	Space+Ctrl+dots 456, or Ctrl+Right Pan
Select Previous Character	Shift+Joystick Left
Select Next Character	Shift+Joystick Right
Select Previous Word	Shift+Ctrl+Joystick Left
Select Next Word	Shift+Ctrl+Joystick Right
Select Previous Line	Shift+Joystick Up

Select Next Line	<b>Shift+Joystick Down</b>
Select All Text	<b>Shift+Ctrl+Joystick Up</b>
Select Text from Cursor	<b>Shift+Ctrl+Joystick Down</b>
Toggle Navigation Mode	<b>Space+Shift+dot 6, or Space+Right Pan</b>
Open Configuration Screen	<b>Space+Ctrl+C</b>
Speak Date and Time	<b>Space+D</b>
Open Quick Menu	<b>Space+Ctrl+M</b>
Toggle Braille Cursor	<b>Space+N</b>
Interrupt Speech	<b>Ctrl</b>
Toggle Speech Mute	<b>Space+Ctrl+U</b>
Open Web Browser Address Bar	<b>Space+Ctrl+dot 1</b>
Speak Position inside Web Page	<b>Space+Shift+dot 4</b>
Simulate Dial (Answer) Key	<b>Shift+Joystick Center</b>
Simulate Hangup Key	<b>Ctrl+Joystick Center</b>
Toggle Punctuation Level	<b>Space+Ctrl+P</b>
Speak Device Status (Battery, Signal, etc.)	<b>Space+Ctrl+S</b>
Cut Text	<b>Space+dots 13467</b>
Copy Text	<b>Space+dots 147</b>
Paste Text	<b>Space+dots 12367</b>
Toggle Secret Mode	<b>Space+dots 16</b>
Change only input Braille Grade	<b>Space+I</b>
Change both output and input Braille Grades	<b>Space+G</b>
Change Braille Output Mode	<b>Space+O</b>
Close Current Window	<b>Space+X, or Shift+Space+Ctrl</b>



Pan Left

Left Pan

Pan Right

Right Pan

# BraillePen 12 Touch with Supernova

## To set up the BraillePen 12 Touch as a keyboard and display for Supernova:

- In Supernova, Select Control Panel, Popup Menu, Configuration, SAM Setup.
- Select BraillePen 12 Touch from the list box
- Press the Configure button
- Select Manual Configuration radio button
- Turn on your BraillePen 12 Touch using **space** and **dots 1** and **3**.
- Press the Bluetooth Find button in the SAM dialog and wait for a minute.
- When detected press the OK button.
- In the SAM dialog, press the Detect All Devices Now button.
- Click OK to accept the hardware change dialogs.
- Your SAM dialog should now show BraillePen 12 Touch Braille Display 1
- Tab using **space** and **dots 5** and **6**, or use the BraillePen 12 Touch joystick to move to the close button and press Joystick Enter to select.

For questions about the Dolphin Pen, please contact [support@dolphinuk.co.uk](mailto:support@dolphinuk.co.uk)

For questions about BraillePen 12 Touch please contact your distributor.

## BraillePen 12 Touch keystrokes for use with Supernova

Action	BraillePen 12 Touch Braille key
Open Control Panel	<b>space + dots 1 3 5 (o)</b>
Popup Menu	<b>space + dots 1 2 3 4 (p)</b>
Mute Speech	<b>control</b>
List System Tray	<b>shift, space + dots 2 3 4 5 (t)</b>
Application Hotkey Information	<b>space + dots 125 (h)</b>
Toggle Key Describe Mode on/off	<b>space + dots 1456</b>
<b>Speak Keys</b>	
Speak PDA Battery Status	<b>space + dots 2 3 4 (s)</b>
Speak current time/date	<b>space + dots 1 4 5 (d)</b>
Speak Status Bar	<b>shift, space + dots 2 3 (2)</b>
Speak Selection	<b>shift, space + dot 2 (1)</b>
Speak Focus	<b>shift, space + dots 3 5 6 (0)</b>
Speak Headings	<b>shift, space + dots 2 5 (3)</b>
Speak Control	<b>shift, space + dots 4 6</b>
Speak Window	<b>shift, space + dots 3 5 (9)</b>
Where am I? (Application, file & focus)	<b>space + dots 2 4 (i)</b>
Describe Focus position	<b>shift, space + dots 2 3 6 (8)</b>
<b>Navigation</b>	
Press Ok/Close Icon	<b>shift, space + control</b>
Enter	<b>space + dots 4 6 or</b>

	joystick enter
Space	space
Page Up	space + dots 1 2 6
Page Down	space + dots 3 4 5
Tab	space + dots 5 6
Shift Tab	space + dots 2 3
Escape	space + dots 1 5 (e)
BackSpace	space + dots 1 2 (b)
Delete	space + dots 1 3 4 6 (x)
Start Menu (Windows Key)	space + dots 2 4 5 6 (w)
Cursor Up	space + dot 1 or joystick up
Cursor Down	space + dot 4 or joystick down
Cursor Left	space + dot 3 or joystick left
Cursor Right	space + dot 6 or joystick right
Home	shift, space + dots 1 2 3
End	shift, space + dots 4 5 6
Control Home	space + dots 1 2 3
Control End	space + dots 4 5 6
Alt	control and space
Alt tab	shift and space
<b>Virtual Focus (VF)</b>	
Choose Virtual Focus (VF)	control and dots 3 6
VF Activate Press	space
VF Interact with control	space + dots 4 6
VF Interact with control	space + control
VF Next Line	space + dot 4
VF Previous Line	space + dot 1
VF Right	space + dot 6
VF Left	space + dot 3
VF Right Word	space + dot 5
VF Left Word	space + dot 2
VF Choose Live Focus	control and dots 3 6
VF Next Object	space + dots 5 6
VF Previous Object	space, shift and dots 5 6

# Using BraillePen 12 Touch with MobileSpeak

## Pairing the BraillePen 12 Touch with your MobileSpeak phone

Connecting your BraillePen 12 Touch to MobileSpeak requires you to first pair with your phone, and then to go into MobileSpeak's Configuration Menu and choose the Braille device and connect to it. MobileSpeak has drivers built in for the BraillePen 12 Touch; choose the EasyLink12 drivers from the list.

## BraillePen 12 Touch keystrokes for MobileSpeak

### Braille Key Assignments

- Dots 1 through 6: Braille input keys labeled from left to right as 3, 2, 1, 4, 5, 6.
- Space: The middle of three keys in front of the Braille keyboard.
- Shift: Key to the left of the Space key.
- Control: Key to the right of the Space key.
- Left Pan: Round key on the left end of the Braille display of the BP 12.
- Right Pan: Round key on the right end of the Braille display of the BP 12.
- Joystick Up/Down/Left/Right: Four directions of the joystick between dots 1 and 4 of the BP 12.
- Joystick Enter: Center of the joystick between dots 1 and 4 on the BP 12.

### Joystick Commands:

Previous line	<code>joystick up</code>
Next line	<code>joystick down</code>
Previous character	<code>joystick left</code>
Next character	<code>joystick right</code>
Enter	<code>joystick enter</code>

### Other Commands:

Command	Action
Dial 1	Braille dots according to selected translation table
Dial 2	Braille dots according to selected translation table
Dial 3	Braille dots according to selected translation table
Dial 4	Braille dots according to selected translation table

Dial 5	Braille dots according to selected translation table
Dial 6	Braille dots according to selected translation table
Dial 7	Braille dots according to selected translation table
Dial 8	Braille dots according to selected translation table
Dial 9	Braille dots according to selected translation table
Dial 0	Braille dots according to selected translation table
Dial *	Braille dots according to selected translation table
Dial #	Braille dots according to selected translation table
Enter (Accept)	Joystick Enter
Insert space	Space
Insert Paragraph Marker	Space + dots46
Insert Braille character with dot 7	dot7(Shift) + Braille character
Insert Braille character with dot 8	dot8(Control) + Braille character
Braille Escape	Space + dot7(shift)
Braille Backspace	Space + dots12(b)
Clear/Delete	Space + dots45
Braille Pan Left	Left Pan
Braille Pan Right	Right Pan

Previous Character/Grid Item/Tab Sheet	Joystick Left, Space + dot3
Next Character/Grid Item/Tab Sheet	Joystick Right, Space + dot6
Previous Line/List Item/Menu Item	Joystick Up, Space + dot1
Next Line/List Item/Menu Item	Joystick Down, Space + dot4
Previous Word	dot8(Control) + Joystick Left, Space + dot2
Next Word	dot8(Control) + Joystick Right, Space + dot5
Start of current line (Home)	Space + dot7(Shift) + dot1
End of current line (End)	Space + dot8(Control) + dot4
Start of text (Top of edit control)	Space + dots123
End of text (Bottom of edit control)	Space + dots456
Left Soft key	Space + Left Pan, Space + Joystick Left -or- Space + dot8(Control) + dot3
Right Soft key	Space + Right Pan, Space + Joystick Right -or- Space + dot8(Control) + dot6
Dial/Send	dot7(Shift) + Joystick Enter
Hang-Up/End Call	dot8(Control) + Joystick Enter
Applications Menu	Space + dot8(Control), Space + dots134(m)
List of Open Applications	Space + dots135(o)
Quick List	Space + dots12345(q)
Read Soft keys	Space + Left Pan + Right Pan, Space + dots36

Read Status Information	Space + dots234(s)
Open Configure Mobile Speak screen	Space + dots14(c)
Change User Profile	Space + dots1234(p)
Press * key in whichever Braille grade (to open Symbols list or unlock keypad)	Space + dots35
Repeat Last Spoken Text	Space + dots1235(r)
Decrease Volume	Space + dots236
Increase Volume	Space + dots356
Decrease Speed	Space + dots126
Increase Speed	Space + dots345
Change Punctuation Level	Space + dot8(Control) + dots1234(p)
Change Keyboard Echo	Space + dot8(Control) + dots15(e)
Read Date and Time	Space + dots145(d)
Toggle Speech Mute	Space + dot8(Control) + dots136(u)
Interrupt/Stop Speech	dot8(Control)
Change Braille Input Grade	Space + dots1245(g)
Route System Focus to Braille Cursor	Joystick Enter, Space + dots15(e)



# Using BraillePen 12 Touch with Talks

## Setting Talks up to connect

First turn Talks off, and then set Bluetooth on your phone to On. Make sure your phone is in discoverable mode.

Now turn your BraillePen 12 Touch on, and wait to hear the triple-beep that tells you Bluetooth is active. Pair your phone with BraillePen 12 Touch using the passcode 1234.

If your phone asks: "Authorise device to make connections automatically?" answer yes.

Once the two devices are paired, install the BP12 Braille driver on your phone. We recommend that you install the driver on your phone's memory card.

Now restart Talks. Check on the Braille tab that "Braille" is set to "BP12 Driver" and "Keep Braille on" is set to "Yes".

Your phone's output will now show on the BraillePen 12 Touch.

To make sure you can read messages and notes on the Braille display line by line, check that in the Advanced tab, the "Cursor Mode" setting is set to "Letters".

The main keystrokes you will need are:

Soft key left	<code>space + shift</code>
Soft key right	<code>space + control</code>
Star key	<code>dots 3, 4</code>
Hash or Pound key	<code>dots 3, 4, 5, 6</code>
Call	<code>control + dot 5</code>
End call	<code>control + dot 4</code>
Cursor Down	<code>space + dot 4</code>
Cursor Left	<code>space + dot 3</code>
Cursor Right	<code>space + dot 6</code>
Cursor Up	<code>space + dot 1</code>
Enter (Joystick Enter)	<code>shift + space + control</code>
Menu	<code>space + dots 1, 3, 4</code> <code>space, control + dots 3, 4, 5, 6</code>
Repeat the last phrase	<code>shift + control</code>
Read the names of the soft keys	<code>space + dots 2, 4, 5, 6</code>
Give battery + network status information	<code>space, control + dot 1</code>
Switch between key echo modes	<code>space, control + dots 1, 2</code>
Uppercase letter announcement on or off	<code>space, control + dots 1, 4</code> <code>space, control + dots 1, 4, 5</code>
Turn the NATO spelling alphabet on or off	<code>space, control + dots 1, 5</code> <code>space, control + dots 1, 2, 4</code>
Switch between punctuation modes	<code>space, control + dots 1, 2, 4, 5</code>
Volume down	<code>space, control + dots 1, 2, 4, 5</code>
Volume up	<code>space, control + dots 1, 2, 4, 5</code>
Slower speech	<code>space, control + dots 1, 2, 4, 5</code>
Faster speech	<code>space, control + dots 1, 2, 4, 5</code>

	5
Speak time + date	space, control + dots 2, 4
Open TALKS&ZOOMS Settings dialog	space, control + dots 3, 5
Turn speech off or on	space, control + dot 6
Backspace	space + dots 1,2
Delete	space + dots 4,5
Home	space + dots 1,2,3
Page Down	space + dots 3,4,5
Page Up	space + dots 1,2,6

If you are using the BraillePen 12 Touch to input numbers into your Contacts, text into your Notes or other inputs such as appointments and to-do reminders, type in Grade Zero Braille, since the Talks driver does no translation. You will have spoken feedback to assist with this; it can be confusing on first use, since the Grade Zero Braille numbers are the lower letters with no number sign, and punctuation in this mode is often different from the normal Braille characters.

There is a section in the ***Care and Resources*** appendix showing the full Computer Braille / Braille ASCII table.

# BraillePen Write

BraillePen 12 Touch can act as a fully-functioning Windows keyboard, using BraillePen Write. Your computer must have a Bluetooth adapter, either internally or using a USB Bluetooth dongle.

BraillePen Write requires Windows® XP or higher.

## Installing BraillePen Write

The BraillePen Write installer is a single file called bp\_setup\_en\_1.5g.exe or similar. The letters and numbers at the end of the filename refer to the language and version number, in this case English, version 1.5g.

### ***If you have an older version installed***

Before installing BraillePen Write, make sure you have fully uninstalled the previous version.

Go to Control Panel, Add and Remove Programs (Windows XP), or Control Panel, Programs and Features (Windows Vista or Windows 7). Uninstall both the following programs:

`__mfc_vcr`

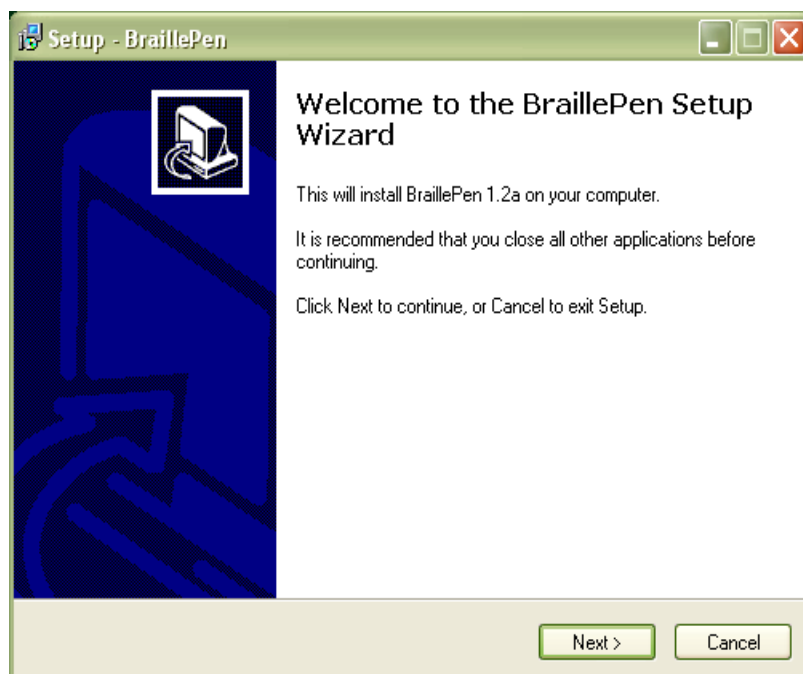
`braillepen n.nx`

(n.nx refers to the version number of the software)

### ***Installing the software***

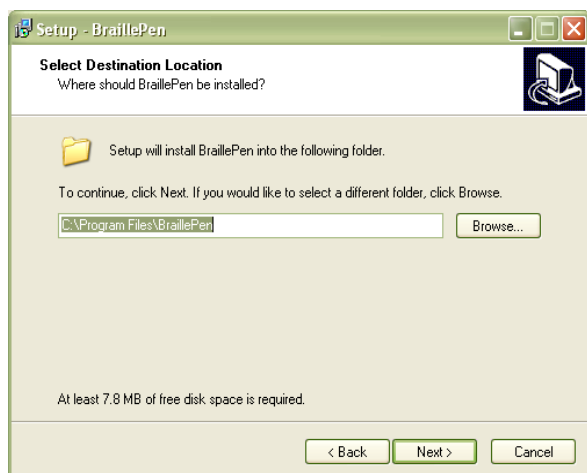
Run the Setup file, bp\_setup\_en\_1.5g.exe from the CD or your hard drive.

The first dialog of the installation process tells you the version of the software you are installing.

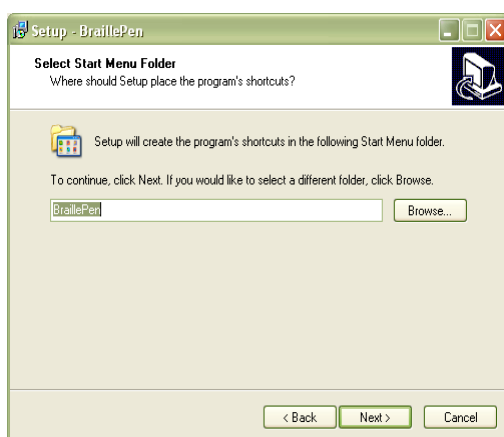


*Illustration 2: The first dialog in the BraillePen Write install process.*

The second dialog offers you the chance to change the installation location, although the standard location usually works well.



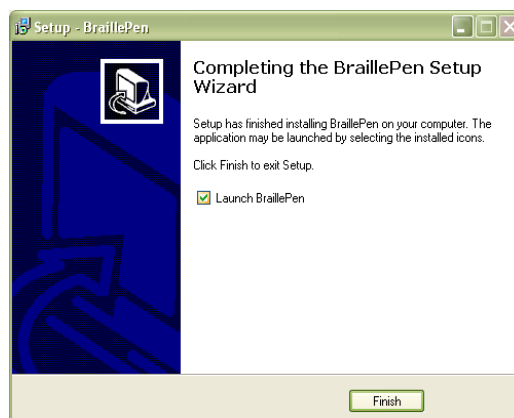
The third dialog offers you the chance to nominate the program's shortcut location in your Programs menu.



The fourth dialog asks if you would like a desktop icon or a quick launch icon or both; and the fifth dialog gives you the chance to review your choices and go back to change them.

The sixth step is the actual installation, where you can monitor the installation progress.

The final dialog of the installation asks whether you want to launch the software when you click Finish to exit the installation process.



If you leave "Launch BraillePen" checked, then once you click Finish, the software will run.

# Running BraillePen Write

## The Main Window

When you launch BraillePen Write, the main window appears:

If you don't have a Bluetooth adapter installed, instead of this window you will see the following error message:



Illustration 4: No Bluetooth error dialog.

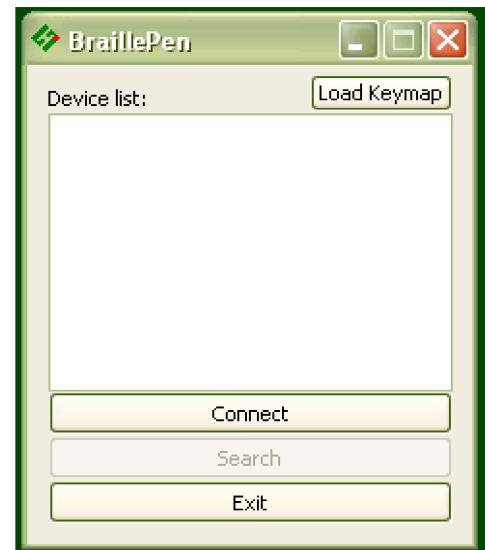


Illustration 3: The main BraillePen Write window.

If you see this message, you need to add a Bluetooth adapter to your computer. Consult your distributor about a suitable adapter.

The main window has three buttons: Connect, Search and Exit. If your BraillePen 12 Touch is on and Bluetooth is active, the MAC address will appear in the window; if you have not yet turned on your BraillePen 12 Touch, turn it on now, and once you hear the triple-beep, click Search.

When the address appears in the window, select it and click Connect.

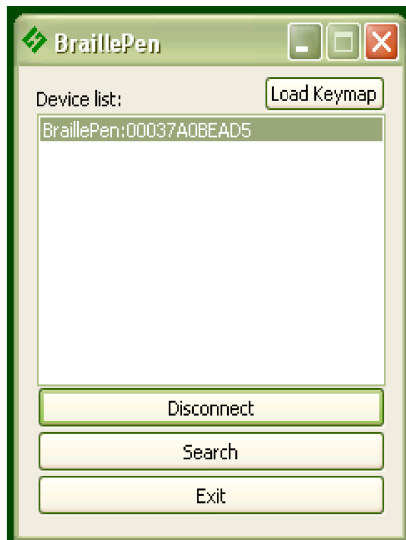


Illustration 6: BraillePen 12 Touch connected, showing Disconnect button.

Once connection is established between BraillePen 12 Touch and the computer, you will see that the Connect button has changed to Disconnect.



Illustration 5: MAC address showing, ready to connect.

Now minimise the window and use your BraillePen 12 Touch as a Bluetooth keyboard in any Windows application.

The next time you run BraillePen Write, it will minimise immediately to the system tray, and search for the BraillePen 12 Touch it already knows. So long as Bluetooth is running and the BraillePen 12 Touch is on, the connection will happen automatically.

If you want to load a different keymap, for instance for Braille entry into a translation program, click the Load Keymap button and browse to the new keymap file and click OK. The new keymap will load, and you are again ready to use the BraillePen 12 Touch.

## Emulating a Windows Keyboard

BraillePen Write can emulate any kind of PC keyboard under Windows. It does this using a keyboard map or keymap. When you press a key combination, or keystroke, on the BraillePen, BraillePen Write uses the keymap to translate this keystroke into a Windows keystroke, and sends it to Windows.

BraillePen Write comes with a default keymap for your location; we have also made several other keymaps, or you can make your own. We will make new ones available as they are made. You might like to share yours with other users, too!

When you first use the BraillePen Write, it loads the default keymap for your location. The table for this keymap can be found in Appendix B, Windows Keymaps.

There are some special keystrokes in BraillePen Write that we hope you will find helpful.

### ***The Combo keystroke***

From version 1.2i, BraillePen Write allows you to combine a sequence of keystrokes from your currently-loaded keymap, so that Windows will see the sequence as a single keystroke. This can allow you to enter complex keystrokes such as Control-Alt-F12, or Tab-Delete-Backspace, or any other complex keystroke which might be required by your software.

Begin a keystroke sequence with the Combo keystroke, **shift + control + dots 3 6**. Then type the keystrokes you want to combine. Then type the Combo keystroke to complete the sequence. Your combined keystroke will then be activated.

For example, to type Control-Alt-F12, use the following sequence of keystrokes on your BraillePen:

```
shift + control + dots 3 6
control
shift + dot 2
shift + space + control + dots 2 3
shift + control + dots 3 6
```

After the last keystroke, your application will receive the full Control-Alt-F12 keystroke.

You can use any standard keystrokes from the active keymap, between the two combo keystrokes, and they will be activated as a Windows key combination after the second combo keystroke has been entered.

### ***Using Complex keystrokes on the BraillePen:***

Your BraillePen allows you to add more keys to a single keystroke than you have fingers, and this can be very useful if you want to assign a complex keystroke to a special Windows keystroke.

If you press one or some of the Braille dots first, and hold down at least one Braille dot key, you can then lift your fingers from any of the other keys and press any or all of the other keys, Pan keys or Joystick actions. When you lift your fingers off the Braille keys, the keystroke will consist of every key you have pressed, even if you let it go.

This makes it possible for you to have a keystroke that uses more than one Joystick action, for instance.

If you begin your keystroke with a key that isn't a Braille dot, then BraillePen Write won't begin to add keys until you have pressed the first Braille dot key. You must also make sure that the last key you release is a Braille dot.

You can add these keystrokes to your keymap using BPCConfig.

### ***Assigning more than one Windows keystroke to a BraillePen Write keystroke***

If you would like to have a single BraillePen keystroke take the place of a sequence of Windows keystrokes that you use all the time, you add it to your keymap in BPCConfig.

Remember to use one of the unused keystrokes from the file **available-keystrokes.txt** on the BraillePen CD, and when you enter the Windows keystroke into BPCConfig, make sure you press the Windows keys in the correct order.

### ***Special behaviour for Alt***

Each keymap contains two keystrokes representing the Alt key on the Windows keyboard.

The first, **shift + dot 3**, activates Alt for use with menus, and behaves as though Alt has been pressed and released; the next keystroke is expected to be a letter from a menu item, an arrow key or Enter.

The second, **shift + dot2**, activates Alt for use with a second key, and behaves as though Alt has been pressed and held down. Use this for such combinations as Alt-F4 to close a program.

On UK and European keyboards using the AltGr key in place of the Right Alt key, there are two similar keystrokes; **shift +dot 6** activates the AltGr key, and behaves as if AltGr has been pressed and released; use this keystroke with the Combo keystroke. **shift + dot 5** activates AltGr for use with a second keystroke, and behaves as if AltGr has been pressed and held down. Use this for combinations like AltGr-e for é.

## **Configuring a New Keymap - BPCConfig**

It is possible to add new keyboard maps to the BraillePen Write, or edit existing maps so that they suit your needs. To make sure you are adding keystrokes, and not using ones you already have assigned, we have included a file containing a list of the unused keystrokes on your BraillePen CD called **available-keystrokes.txt**.

The keyboard map, or keymap, is a file stored in the BraillePen Slim folder. It will always have the extension .kmf; for instance the United Kingdom keymap is called UK.kmf. This file contains information about the BraillePen Write keystrokes on the BraillePen Slim and their corresponding keystroke combinations on the keyboard.

When you build a new map file, or edit an existing one, you can save the map to a file so that you can choose it any time you use BraillePen Slim; you can save it either to the BraillePen Slim program folder or to another folder.

The program is called BPCConfig. It can be found on the Programs menu under BraillePen.

You cannot run both the BraillePen Write and BPCConfig together. If you should try, you will see an error dialog telling you that another instance of either BraillePen Slim or BPCConfig is running.

### ***The Main BPCConfig Window***

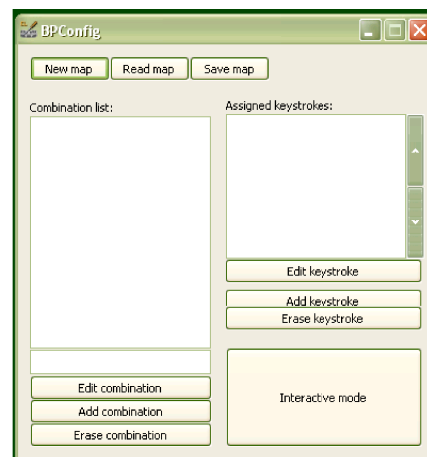
When you run BPCConfig, the main window opens with a number of choices.



There are three buttons across the top of the window, giving you the choice of starting a new keymap, reading in an existing keymap from a file, or saving a keymap you have been editing.

Below these buttons are two display spaces; on the left is the Space which displays the existing key mappings for a file you have loaded, and on the right is the Space where the keymap you are editing is displayed.

Below each of the display spaces there are three buttons, each of which acts on the Space above it. The buttons for the left Space are Edit combination, Add combination and Erase combination; for the right Space, Edit keystroke, Add keystroke and Erase keystroke. In either case, before you can edit or erase, you must select the relevant combination inside the Space.



*Illustration 7: BPCConfig main window.*

If you begin a new keymap, nothing appears in either of these Spaces; if you load a keymap, the contents of that keymap are loaded in the left display space, and then any combination you select in the left Space is displayed in the right display space.

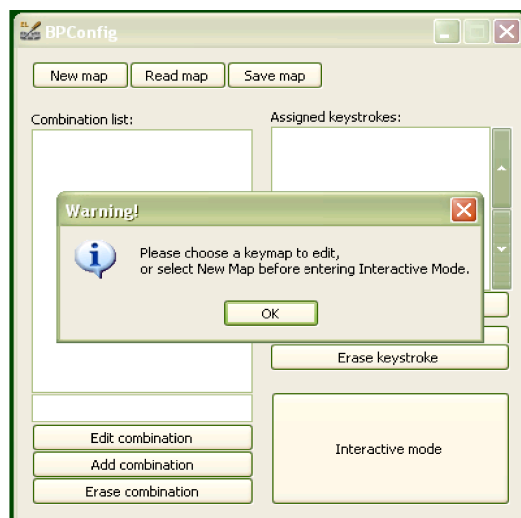
When you are editing, either in Interactive Mode or in the editing window, if you enter a new key combination for an existing keymap, the previous keymap is overwritten with the new one. To make sure you are using a keystroke that isn't already in use, we have included a file of available keystrokes on the BraillePen CD called **available-keystrokes.txt**.

The last button on the main window is Interactive mode. This allows you to build a new keymap, or edit an existing keymap, by using the BraillePen Slim keyboard and the PC keyboard to type the BraillePen Slim keystrokes and their corresponding PC keyboard keystrokes.

Before you can use the Interactive mode, you have to either choose to start a new keymap or load an existing keymap; if you don't remember to do that, you will see an error message reminding you (see Illustration 11).

Once you have loaded a keymap or chosen to begin a new keymap, the Interactive window will appear, and BPCConfig will begin searching for your BraillePen Slim - make sure it is turned on and Bluetooth is active.

First there is a flashing Bluetooth icon in the centre of the left panel (see Illustration 12), and then when BPCConfig has discovered your BraillePen Slim, it will put the MAC address in the left-hand side of the window, and you can then click Connect.



*Illustration 8: BPCConfig Interactive Mode Error - no keymap loaded*

On the right side of the window is a display space to list the key mappings as you build them up. Under that display space is a pair of buttons: Add keystroke and Erase keystroke.

When you click Add keystroke, a new window appears inviting you first to press the keystroke on one or other of the keyboards - it doesn't matter whether you begin with the BraillePen Slim or the PC keyboard.

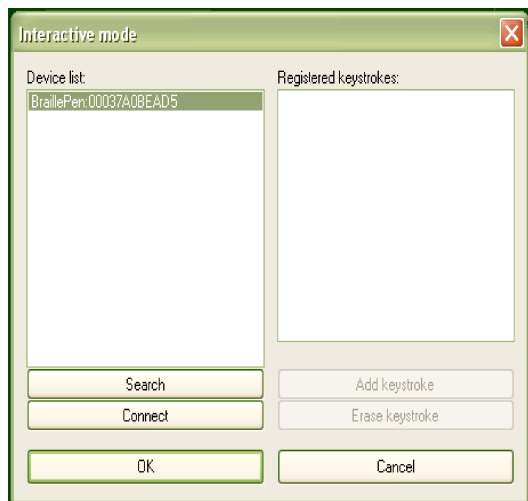


Illustration 9: BPCConfig ready to connect.

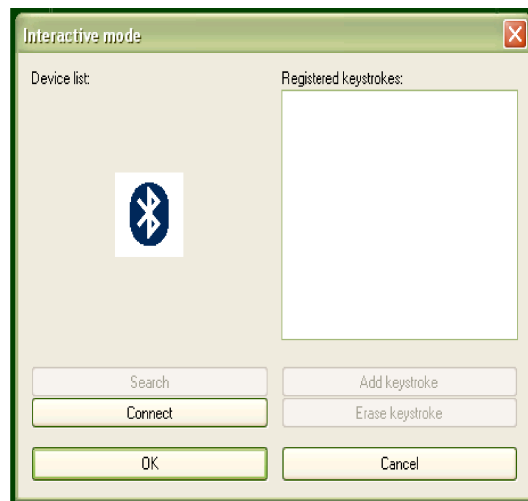


Illustration 10: BPCConfig Bluetooth search screen.

When you have pressed that keystroke, the message then invites you to press the corresponding keystroke on the other keyboard. When you have done that, the new window disappears, and your new combination is displayed in the right-hand display space.

If you should enter a combination in error, you can use the Erase keystroke button to delete that keymap from the list, and then use Add keystroke to do it afresh.

The two buttons at the bottom of the Interactive Mode window are OK and Cancel. Cancel takes you back to the main BPCConfig window, without making any changes to the keymap you have loaded; OK takes you back to the main window and writes your changes into the file you have loaded - you can check the display space for your changes and additions, which will appear at the bottom of the list.

Remember to save the keymap file from the main window to write it to the disk as a file; use the Save keymap button in the main window to do this.

# BraillePen 12 Touch and 6-key entry into Braille files

BraillePen 12 Touch with the Windows Keyboard software can be used for 6-key entry into Braille files from Duxbury Braille Translator or other translators. Note that 6-key or direct Braille entry is only available after the file has been translated. Before translation, your BraillePen 12 Touch will enter text into the editor part of your translation software in the same way as your standard keyboard.

## The US-ASCII Keymap

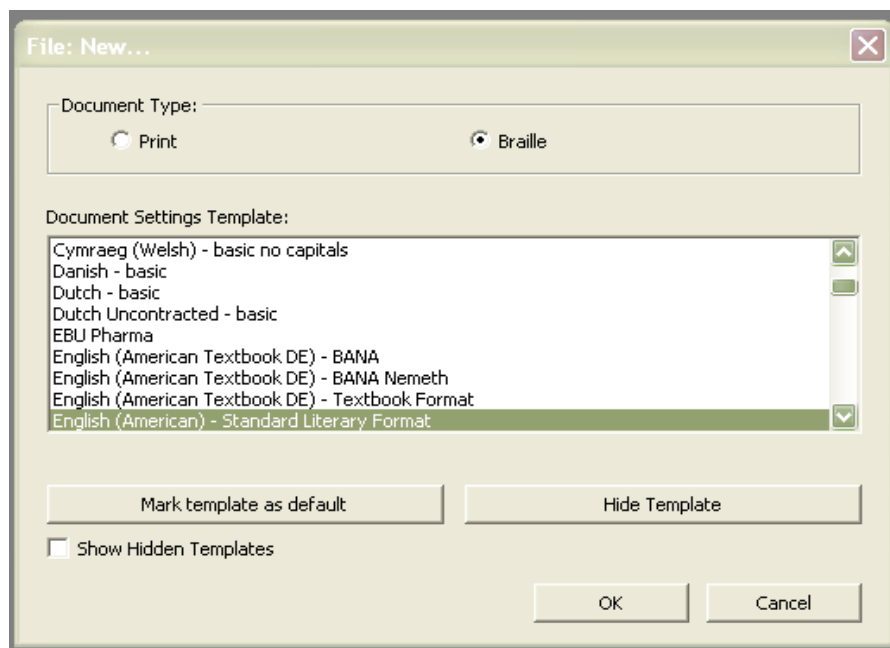
This keymap has been specially developed to allow 6-key entry into Braille files, so that the Braille character entered corresponds exactly to the Braille which will be embossed. This keymap is supplied with every BraillePen 12 Touch. Generally the US ASCII keymap will be correct; ask your dealer to supply you with the correct keyboard map for 6-key entry into your chosen Braille translation software if you find that US-ASCII doesn't work for you.

## Duxbury Braille Translator

To install BraillePen Write, see the previous section. Once you have the driver installed, select and load the US-ASCII keymap file. This keymap file gives you keyboard emulation functionality while making sure that the Braille dots you press are echoed exactly on the screen. Consult the Keymap Appendix for information about the available keystrokes.

For Braille entry directly into a Duxbury Braille file, you can either open a new Braille file or open an existing Braille file. For illustration purposes, we have opened a new file, using File, Open from the menu. Duxbury displays the following dialog:

Make sure that you click the radio button next to Braille in Document Type. The template you select is not so important, as you will not be translating this file; it will be sent directly to the embosser.

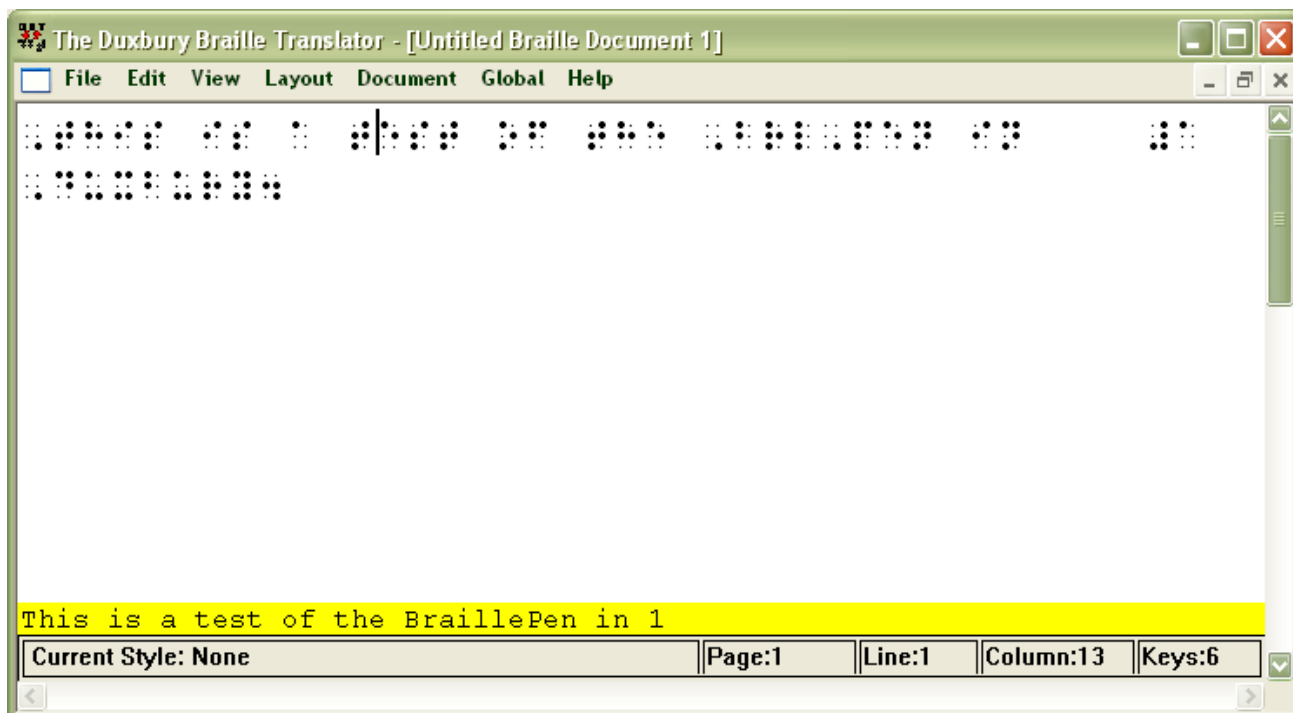


*Illustration 11: Duxbury Braille Translator's opening dialog*

Once the file is open, you can type Braille directly into the editing window.

Use the other available keystrokes in the keymap to access all the Duxbury menus and commands. Remember you have two Alt keystrokes for different purposes.

Load a standard keymap if you wish to edit a text file in Duxbury.



*Illustration 12: Duxbury Braille Translator showing Braille typed from the BraillePen 12 Touch*

# Appendix A: Care and Resources

## Making the Bluetooth Connection

BraillePen 12 Touch supports Bluetooth connections with four main types of Bluetooth adapters or dongles. These may be built in to a device, or they may be a USB-based add-on for a PC or netbook.

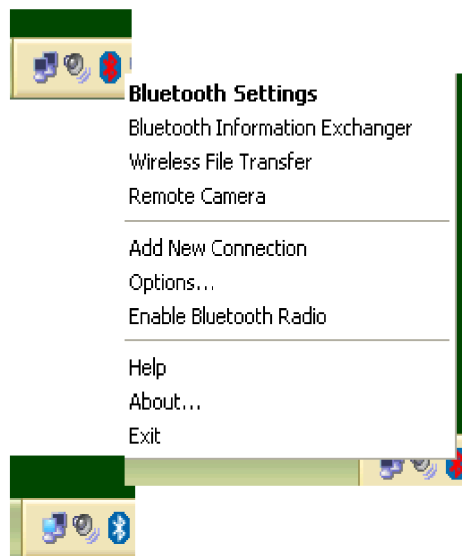
The four supported types are:

- Microsoft drivers, described in the first section of this User Guide;
- Toshiba;
- Broadcom/WIDCOMM; and
- Blue Soleil.

With each of these types of adapter, BraillePen Write will connect in the same way. However, if you wish to pair your BraillePen 12 Touch with a PC for other uses, the following sets of instructions may be helpful:

## Pairing your BraillePen 12 Touch with the Toshiba Bluetooth Adapter

Once the Toshiba Bluetooth software has been installed on your PC or netbook, make sure that Bluetooth is enabled on your netbook.



*Illustration 13: Bluetooth icons and the right-click menu.*

If the icon in the system tray shows red on blue, Bluetooth has been turned off. You can right-click on the Bluetooth icon in the system tray to check whether Bluetooth has been disabled; there will be a menu item “Enable Bluetooth Radio” if Bluetooth is off.

Once Bluetooth is enabled, the icon will return to white-on-blue, and the “Enable” item on the right-click menu will change to “Disable”.

To add a device, first find Bluetooth in your Programs menu. Select Bluetooth Settings from the sub-menu, and a window will pop up. To pair with the BraillePen 12 Touch, click on New Connection.



Illustration 14: Toshiba Bluetooth Add New Device window

The dialog that follows gives two choices: Express Mode, which is the recommended mode, and Custom Mode. Express Mode is usually trouble-free, so unless you have some special requirements we would suggest that you use it.

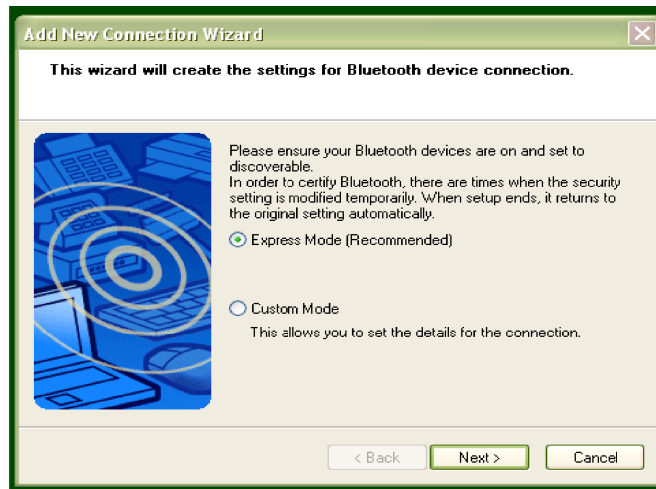


Illustration 15: Toshiba Bluetooth Wizard, Step 1

Make sure that BraillePen 12 Touch is on and the three-beep activation sound has happened; then click Next.

A new dialog opens to tell you that the Bluetooth application is searching for devices.

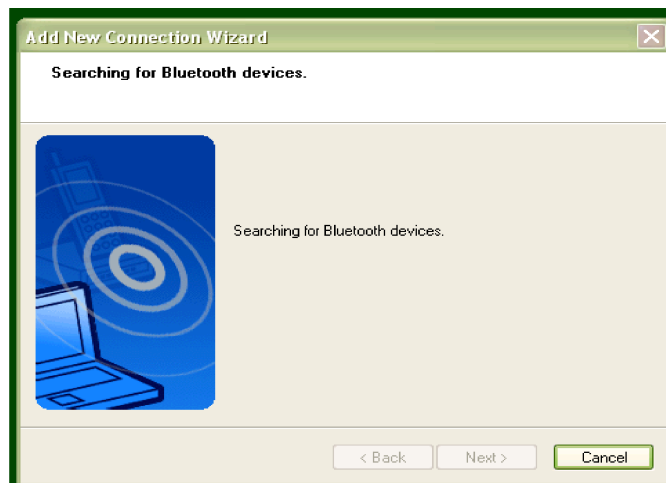
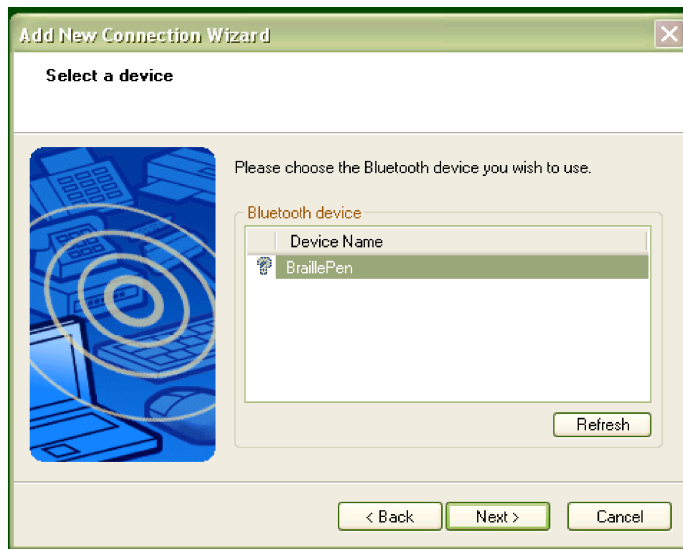


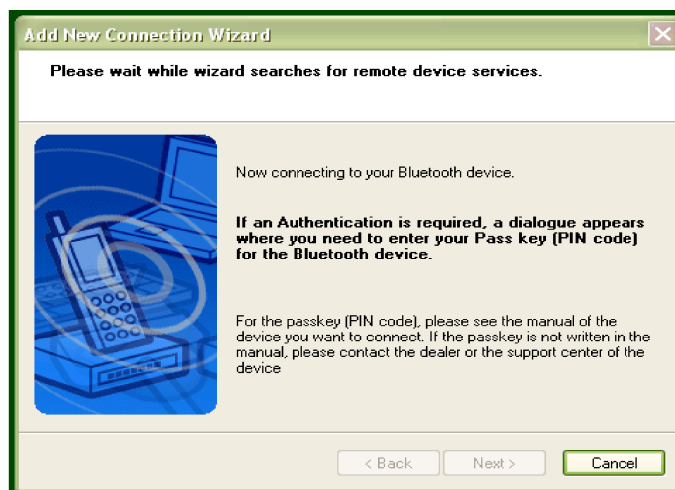
Illustration 16: Toshiba Bluetooth Device Search

Next you will see the dialog with the BraillePen 12 Touch listed. Select it and click Next.



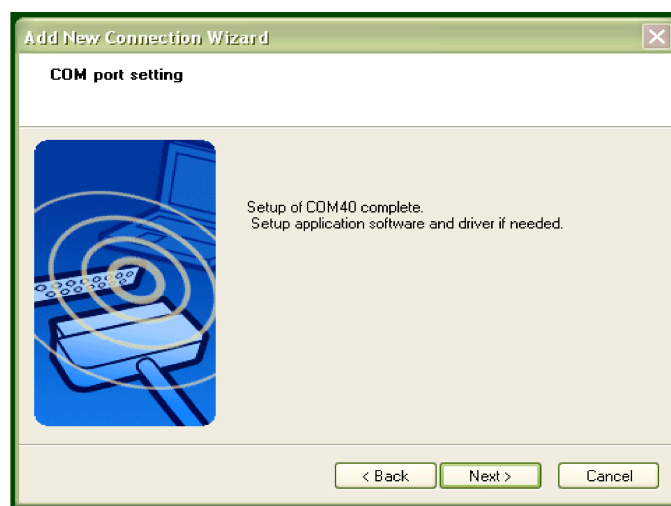
*Illustration 17: BraillePen 12 Touch showing in Device List*

Then the software will check for the services available to the BraillePen 12 Touch, and let you know that you might need to authenticate; this is not required with the BraillePen 12 Touch.



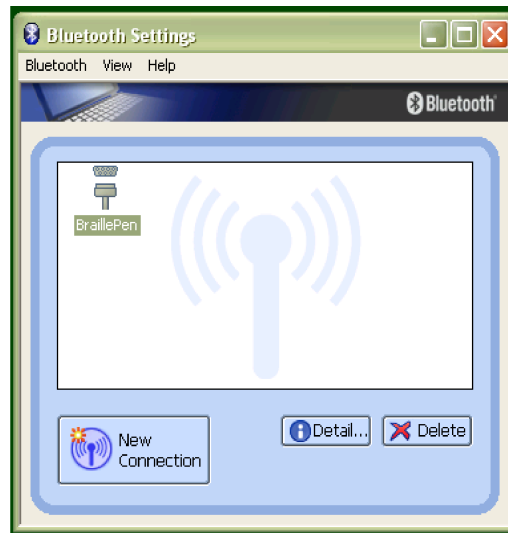
*Illustration 18: Connecting to BraillePen 12 Touch*

The final dialog in the process is a confirmation that the pairing is complete; the COM port assigned is given here. Click Next to continue.



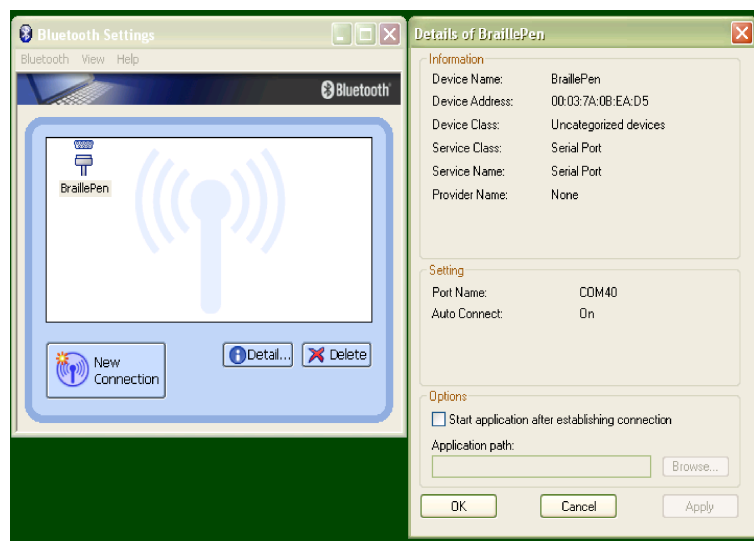
*Illustration 19: Setup Complete, and COM port notification*

After the pairing is complete, the software returns to the Bluetooth Settings window from the beginning; your BraillePen 12 Touch is now shown in the window.



*Illustration 20: Bluetooth Settings Window showing BraillePen 12 Touch*

You now have access to two extra buttons, Detail and Delete. Delete allows you to un-pair from your BraillePen 12 Touch; Detail gives you all the information about the Bluetooth connection with your BraillePen 12 Touch, including the COM port number assigned to it,



*Illustration 21: The details shown when the Details button is clicked.*

which you might need to know for your access software.

## **Pairing with the Broadcom WIDCOMM® Bluetooth Adaptor**

To run the pairing software, go first to the Control Panel and click Bluetooth Configuration.



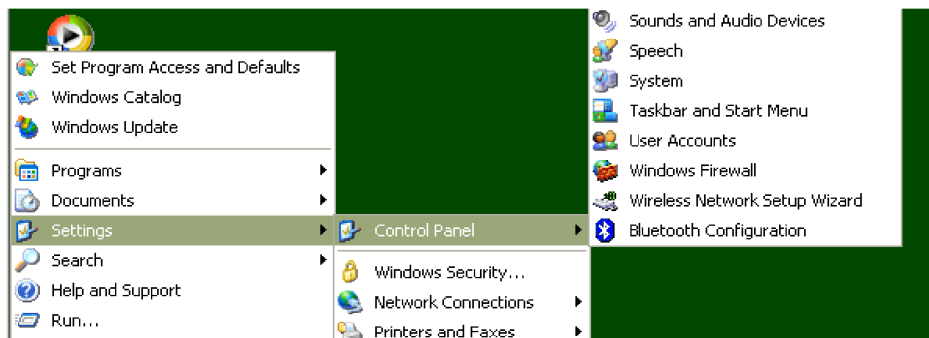


Illustration 22: Windows XP Menu showing Bluetooth Configuration

Again, make sure that Bluetooth is enabled; right-click on the Bluetooth icon in the system tray, and if it isn't enabled, click to enable.

Clicking on Bluetooth Configuration will start a Wizard. Make sure your BraillePen 12 Touch is on, and you have heard the triple-beep. Then click Next.



Illustration 23: The first screen of the WIDCOMM setup.

The next dialog will show any Bluetooth devices within range. The default setting is “show all devices”; it is safest to leave this at this setting, to make sure that the software can discover the BraillePen 12 Touch.



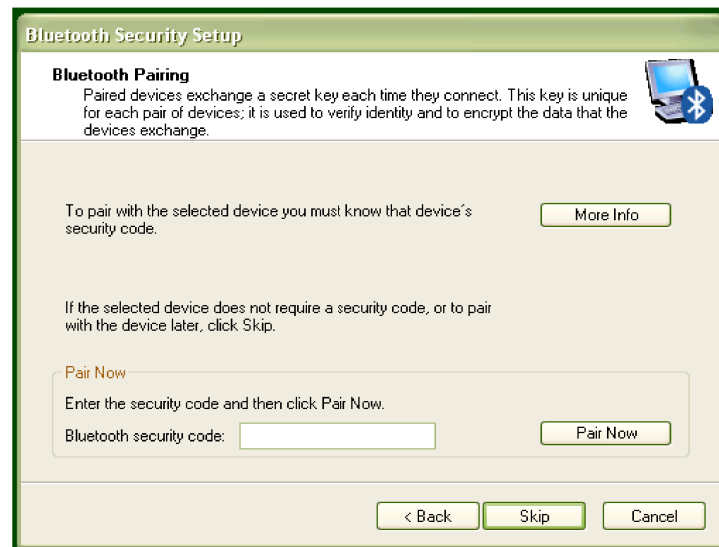
Illustration 24

Illustration 25: BraillePen 12 Touch showing in the WIDCOMM Devices

Once the BraillePen 12 Touch has been discovered, the search will stop, and you will see the BraillePen 12 Touch in the window.

Select it and click Next.

The following dialog appears to be asking for a passcode or security code. However, if you don't want to set one up for your BraillePen 12 Touch, click Skip, and the software will try to pair with the device without using a code. If the pairing fails at this step, the following notes could be of help.



*Illustration 26: Widcomm window asking for Passcode*

***Special note for potential problems with the Broadcom WIDCOMM drivers:***

Occasionally these drivers can cause communication problems between your device and the BraillePen 12 Touch, because their inbuilt security prevents the connection from operating properly. To correct this, there are two steps to take.

When you are configuring the driver, the software is set by default to ask for a security PIN. You need to turn this feature off. In Bluetooth Places on your computer, click on the Window menu "Bluetooth Interface" and select the function "Advanced Configuration". After the window appears, choose "Local Services" and double-click on the item "Bluetooth Serial Port". Turn off the "Connect Safely" setting.

Then, in the same window, on the tab "Client applications", select "Bluetooth Serial Port Interface" and disable the "Secure connection". After you have completed the configuration your connection between the device and BraillePen 12 Touch will operate correctly.

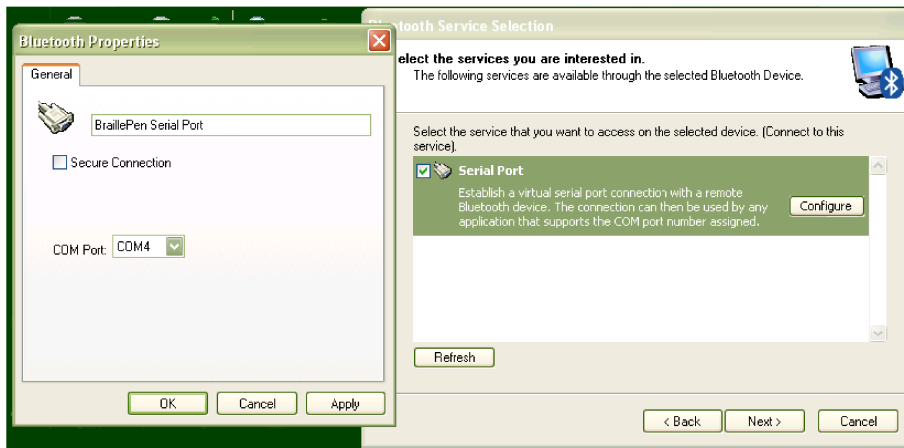


Illustration 28: Turning off WIDCOMM Security - stage 2

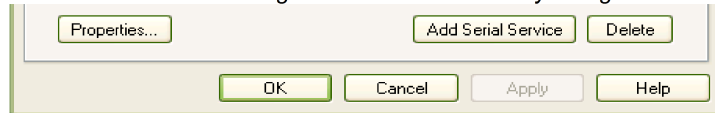


Illustration 27: Turning off WIDCOMM security stage 1

After the pairing takes place, the service discovery is done, and you are asked to select a service and, optionally, configure it. If you don't select and place a check next to a service in this step, no services will be activated – so although BraillePen 12 Touch and your PC or netbook will be paired, you won't be able to do anything with the connection. For the BraillePen 12 Touch, the only service available is Serial Port; select it and make sure the checkbox is checked, and then click Next.

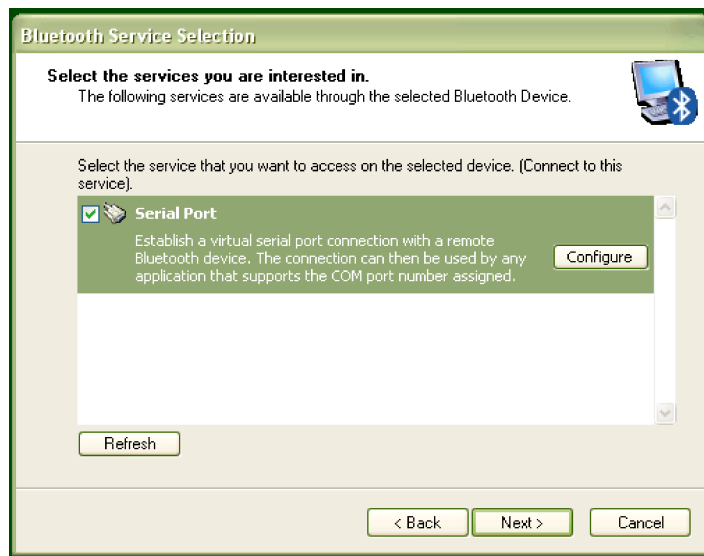


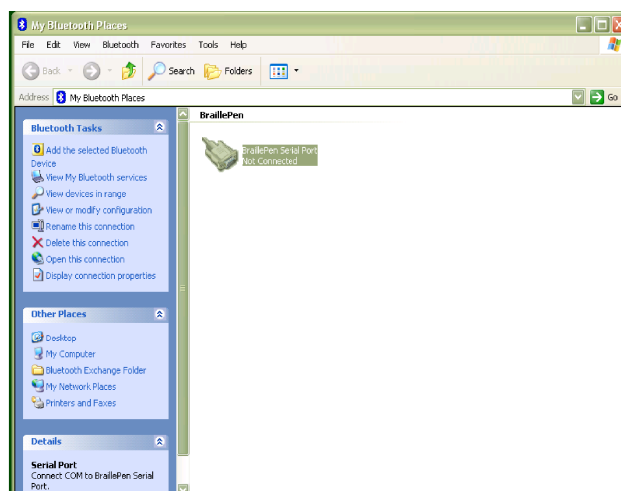
Illustration 29: WIDCOMM Service Discovery

A shortcut will be placed on the desktop, and then the final screen of the Wizard appears. Click Next.



Illustration 30: Final screen of WIDCOMM setup

There is still one last step; the pairing is done, but you have still to connect. Go to the desktop and double-click on My Bluetooth Places, which the Wizard has just put there. You will find your BraillePen 12 Touch Serial Port service in the window that opens.



*Illustration 31: My Bluetooth Places window showing BraillePen 12 Touch, ready to connect*

Make sure that your BraillePen 12 Touch is on and Bluetooth is active; then right-click on the BraillePen 12 Touch Serial Port icon and click Connect.

Connections made after this should be automatic.

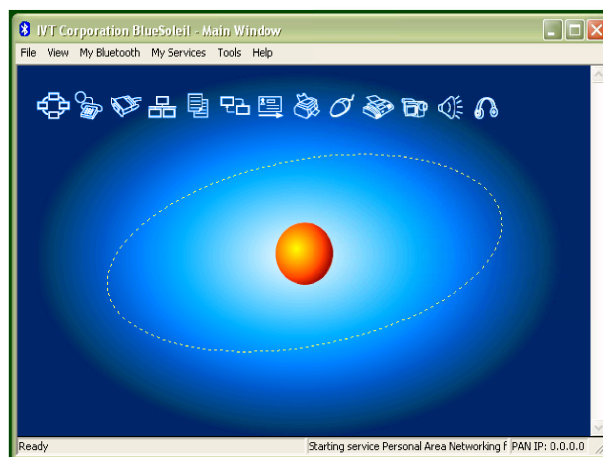
## Pairing with the BlueSoleil drivers

Although the BlueSoleil USB Bluetooth adapter comes with software for pairing, this software is quite inaccessible. For pairing with these drivers between your PC and BraillePen 12 Touch, we would advise that you seek sighted assistance.

BlueSoleil's software installs under Programs in the Start Menu. Once the software is running, a dialog comes up with a graphical representation of an orange ball which is to be clicked. However, there is also a menu item under My Bluetooth to discover Bluetooth services.

Unfortunately, once the device is discovered, there is no accessible way to tell the software to make the connection; it requires the user to click on the discovered device in the graphical interface. Once this is done, re-connection should be automatic.

Although BraillePen 12 Touch will work seamlessly with these drivers using BraillePen Write, we can't recommend them for more general use.



*Illustration 32: Graphical connection screen of BlueSoleil software*

## BraillePen 12 Touch Battery Life

Your BraillePen 12 Touch has an internal rechargeable battery, which isn't user serviceable or user-replaceable. The battery life using the default sleep timer settings is 12 hours working, standby several weeks, charge cycle 3 hours.

If you extend the sleep timer past the default, you may find that your working time appears shorter because the BraillePen 12 Touch is not spending so much time on standby.

## BraillePen 12 Touch Settings and Test Menu

To enter this menu, press Space-Control (Enter) within one second after having switched on the BraillePen 12 Touch.

The battery indicator is the first item in the menu, and displays "battery x", where x is the percentage of battery charge remaining.

To move to the next item in the menu, press Joystick Down; if you press Joystick Up, you will go immediately to the bottom item in the menu, which is exit. Use Joystick Down to step through the menu items. They are:

- Battery indicator
- Sleep time x minutes
- Beeps on or off
- Cell test
- Key test
- BT test (Bluetooth test)
- Firmware version
- Exit.

Some items in this menu show only the name on the menu with no parameters. You can go into these items, where you will be able to test your BraillePen 12 Touch, or alter its settings. For these items, press Joystick Enter to enable the settings or perform the test; press Joystick Up or down to alter settings, and press Joystick Enter once more to confirm settings.

The Settings Menu is as follows:

Battery indicator: this displays the percentage of battery life remaining.

Sleep x minutes: this item refers to the length of time BraillePen 12 Touch will stay active after the last keypress. The default sleep time is 25 minutes; this can be changed in 5-minute increments to a high of "never" or to a low of 1 minute. We don't recommend leaving the sleep timer at high settings indefinitely, since this will diminish the life of your battery.

In the sleep time menu item, press Joystick Enter to see the display "time x mins". Press Joystick Up to increase the time, and Joystick Down to decrease the time. When BraillePen 12 Touch displays the sleep time you want, press Joystick Enter to confirm. When you press Joystick Enter to confirm, you are returned to the menu, and BraillePen 12 Touch displays sleep x min, showing your new setting. The sleep time setting will be saved and become active when you exit the Settings Menu.

To move to the next item in the menu press Joystick Down.

Beeps on or off: The display will show whether beeps are currently on or off; to change, press Joystick Enter, and then Joystick Down to change, then Joystick Enter to confirm.

Use Joystick Down to move to the next item, Cell Test.

Cell Test will check whether all Braille dots function correctly. First dot 1 will be displayed, and then dot 2, and then 3, 4, 5, 6, 7 and 8 in sequence. If all dots are in good health, the message "cells ok" will appear on the display. This sequence takes around 20 seconds. To repeat this test, press Joystick Up, and the display will clear; then press Joystick Enter and the display will show "cell test" once more. From here you can either repeat the test by pressing Joystick Enter, or move to the next menu item with Joystick Down. To exit immediately from the test, press the Escape combination, Shift and Space.

Key test: This test allows you to check all keys. Press each key separately to test the key; combinations of keys will have no effect. Use this test to also test the joystick function. Use the Escape combination, Shift and Space, to exit to the menu.

Bluetooth chip test: This test will check whether the Bluetooth chip functions correctly. If the Bluetooth chip functions correctly, the text "bt test ok" will be displayed. If there is any problem, the test will display "bt test fail". If you receive this message, please contact your distributor for assistance.

Firmware version: this item displays the currently installed firmware version number, which only alters after your BraillePen 12 Touch has been updated.

Exit: press Joystick Enter to return to normal operation.

After exiting, BraillePen 12 Touch will automatically turn on in normal operating mode. This takes around 4 seconds.

## To reset the BraillePen 12 Touch:

Press the following keys simultaneously: space, dot1, dot3 and Joystick Enter;

Wait 5 seconds and release all keys; wait 6 seconds for BraillePen 12 Touch to reboot internally;

Switch the BraillePen 12 Touch on again, by pressing space, dot 1 and dot 3 simultaneously.

## Updating BraillePen Write

From time to time there will be updated versions of this software. Each update is a full installation of the software, and requires you to uninstall the version you currently have installed.

Always uninstall BraillePen Write from the Control Panel. In Windows XP, choose Add and Remove Programs; in Vista choose Programs and Features, and in Windows 7 choose Programs and Features.























As well as uninstalling BraillePen Write, you must also uninstall a file which will usually be first on the list, called \_\_mfc\_vcr. Once you have uninstalled BraillePen Write and \_\_mfc\_vcr, you will be able to install the updated software; if you have not uninstalled both files, you will receive an error message.

## Braille ASCII or computer Braille

This table gives the correspondence between ASCII characters and Braille characters, used to send translated Braille to an embosser. You may need to use it to type Braille into some devices, where the BraillePen 12 Touch driver or the device's internal software has no Braille translation built in.

ASCII Glyph	Braille Dots	Braille character
space		⠠
!	2-3-4-6	⠠
"	5	⠠
#	3-4-5-6	⠠
\$	1-2-4-6	⠠
%	1-4-6	⠠
&	1-2-3-4-6	⠠

ASCII Glyph	Braille Dots	Braille character
,	3	⠠
(	1-2-3-5-6	⠠
)	2-3-4-5-6	⠡
*	1-6	⠠
+	3-4-6	⠠
,	6	⠠
-	3-6	⠠
.	4-6	⠠
/	3-4	⠠
0	3-5-6	⠠
1	2	⠠
2	2-3	⠠
3	2-5	⠠
4	2-5-6	⠠
5	2-6	⠠
6	2-3-5	⠠
7	2-3-5-6	⠠
8	2-3-6	⠠
9	3-5	⠠
:	1-5-6	⠠
;	5-6	⠠
<	1-2-6	⠠
=	1-2-3-4-5-6	⠠
>	3-4-5	⠠
?	1-4-5-6	⠠
@	4	⠠
A	1	⠠
B	1-2	⠠
C	1-4	⠠
D	1-4-5	⠠
E	1-5	⠠
F	1-2-4	⠠
G	1-2-4-5	⠠
H	1-2-5	⠠
I	2-4	⠠

ASCII Glyph	Braille Dots	Braille character
J	2-4-5	
K	1-3	
L	1-2-3	
M	1-3-4	
N	1-3-4-5	
O	1-3-5	
P	1-2-3-4	
Q	1-2-3-4-5	
R	1-2-3-5	
S	2-3-4	
T	2-3-4-5	
U	1-3-6	
V	1-2-3-6	
W	2-4-5-6	
X	1-3-4-6	
Y	1-3-4-5-6	
Z	1-3-5-6	
[	2-4-6	
\	1-2-5-6	
]	1-2-4-5-6	
^	4-5	
_	4-5-6	



# Appendix B: Windows Keymaps

## Using the BraillePen Write Keymap

The tables below contain all the default keystroke assignments for BraillePen Write for the US Standard keyboard in Windows. Unused combinations can be found in the file `available-keystrokes.txt`, on your BraillePen CD.

The Joystick and Pan Keys are only available on BraillePen 12 Touch. These keys add many, many combinations to the possible keystrokes. These keystrokes are provided in the file `bp12 remaining keystrokes.txt`.

Both these files can be downloaded from the BraillePen website, and are available on the BraillePen CD supplied after May 31 2011.

## The US standard keyboard (US.kmf)

### *Using the Combo keystroke:*

From version 1.2i, BraillePen Write allows you to combine a sequence of keystrokes from your currently-loaded keymap, so that Windows will see the sequence as a single keystroke. This can allow you to enter complex keystrokes such as Control-Alt-F12, or Tab-Delete-Backspace, which can be required by the software you use.

Begin with the Combo keystroke, `shift + control + dots 3 6`. Type the keystrokes you want to combine. Then type the Combo keystroke to complete. Your combined keystroke will then be activated.

For example, to type Control-Alt-F12, use the following sequence of keystrokes on your BraillePen:

```
shift + control + dots 3 6
control
shift + dot 2
shift + space + control + dots 2 3
shift + control + dots 3 6
```

After the last keystroke, your application will receive the full Control-Alt-F12 keystroke.

You can use any standard keystrokes from the tables below between the combo keystrokes, and they will be activated as a Windows key combination after the second combo keystroke has been entered.

### *Using Complex keystrokes on the BraillePen:*

Your BraillePen allows you to add more keys to a keystroke than you have fingers, and this can be very useful if you want to assign a complex keystroke to a special Windows keystroke.

If you press one or some of the Braille dots first, and hold down at least one Braille dot key, you can then lift your fingers from any of the other keys and press any or all of the other keys, Pan keys or Joystick actions. When you lift your fingers off the Braille keys, the keystroke will consist of every key you have pressed, even if you let it go.

This makes it possible for you to have a keystroke that uses more than one Joystick action, for instance.

You can add these keystrokes to your keymap using BPCConfig, at any time.

### ***Assigning more than one Windows keystroke to a BraillePen Write keystroke***

If you would like to have a single BraillePen keystroke take the place of a sequence of Windows keystrokes that you use all the time, you add it to your keymap in BPCConfig.

Remember to use one of the unused keystrokes from the table at the end of this section, and when you enter the Windows keystroke into BPCConfig, make sure you press the Windows keys in the correct order.

## **The US standard keyboard (US.kmf)**

### ***Letters and numbers***

<b>BraillePen keys</b>	<b>Windows key</b>
dot 1	a
dots 1 2	b
dots 1 4	c
dots 1 4 5	d
dots 1 5	e
dots 1 2 4	f
dots 1 2 4 5	g
dots 1 2 5	h
dots 2 4	i
dots 2 4 5	j
dots 1 3	k
dots 1 2 3	l
dots 1 3 4	m
dots 1 3 4 5	n
dots 1 3 5	o
dots 1 2 3 4	p
dots 1 2 3 4 5	q
dots 1 2 3 5	r
dots 2 3 4	s
dots 2 3 4 5	t
dots 1 3 6	u
dots 1 2 3 6	v
dots 2 4 5 6	w
dots 1 3 4 6	x
dots 1 3 4 5 6	y
dots 1 3 5 6	z
shift + dot 1	A
shift + dots 1 2	B
shift + dots 1 4	C
shift + dots 1 4 5	D
shift + dots 1 5	E
shift + dots 1 2 4	F
shift + dots 1 2 4 5	G
shift + dots 1 2 5	H
shift + dots 2 4	I
shift + dots 2 4 5	J
shift + dots 1 3	K

shift + dots 1 2 3	L
shift + dots 1 3 4	M
shift + dots 1 3 4 5	N
shift + dots 1 3 5	O
shift + dots 1 2 3 4	P
shift + dots 1 2 3 4 5	Q
shift + dots 1 2 3 5	R
shift + dots 2 3 4	S
shift + dots 2 3 4 5	T
shift + dots 1 3 6	U
shift + dots 1 2 3 6	V
shift + dots 2 4 5 6	W
shift + dots 1 3 4 6	X
shift + dots 1 3 4 5 6	Y
shift + dots 1 3 5 6	Z
space	space
dots 3 5 6	0
dot 2	1
dots 2 3	2
dots 2 5	3
dots 2 5 6	4
dots 2 6	5
dots 2 3 5	6
dots 2 3 5 6	7
dots 2 3 6	8
dots 3 5	9

### ***Punctuation and special characters***

BraillePen keys	Windows key
dot 6	,
dots 4 6	.
dots 5 6	;
dots 1 5 6	:
dots 3 6	-
dot 3	'
dot 5	"
dots 1 4 5 6	?
dots 2 3 4 6	!
dots 1 4 6	%
dots 1 2 3 5 6	(
dots 2 3 4 5 6	)
dot 4	@
dots 3 4	/
dots 4 5 6	_
dots 2 4 6	[
dots 1 2 4 5 6	]
dots 4 5	^
dots 1 6	*
dots 1 2 3 4 6	&
dots 1 2 5 6	\
dots 3 4 5 6	#

dots 3 4 6	+
dots 1 2 6	<
dots 1 2 3 4 5 6	=
dots 3 4 5	>
dots 1 2 4 6	\$
control dots 1 2 4 6	
dots 1 2 5 6	\
control dots 1 4 6	~

### **Modifier and control keys**

<b>BraillePen keys</b>	<b>Windows key</b>
control dot 1 <i>or</i> joystick left <i>or</i> left pan	left arrow
control dot 4 <i>or</i> joystick right <i>or</i> left pan	right arrow
control dot 5 <i>or</i> joystick down	down arrow
control dot 2 <i>or</i> joystick up	up arrow
control dots 1 2 3	pgup
control dots 4 5 6	pgdn
shift	shift
space	space
control	left control
control dots 1 2 3 5	right control
space dots 2 3 4 5	tab
shift space dots 2 3 4 5	shift + tab
space dots 1 2	backspace
space control <i>or</i> joystick enter	enter
control dots 2 4	ins
space dots 4 5	del
shift control dot 3 <i>or</i> space dots 1 2 3	home
shift control dot 6 <i>or</i> space dots 4 5 6	end
shift space	esc
shift dot 3	alt
shift dot 2	alt +
shift dot 6	right alt
shift dot 5	right alt +
shift control dots 3 6	start or end combo keystroke
shift space dots 1 3 4	printscrn
shift space dots 1 2 3 4 5	pause
shift space dots 1 3 5	scroll lock
shift space dots 2 4 5 6	left windows key
space control dots 2 4 5 6	right windows key
control space dots 1 3 4	menu
control dots 1 4	capslock

control dots 1 3 4 5	numlock
----------------------	---------

### Function keys

BraillePen keys	Windows key
shift space dot 2	F1
shift space dots 2 3	F2
shift space dots 2 5	F3
shift space dots 2 5 6	F4
shift space dots 2 6	F5
shift space dots 2 3 5	F6
shift space dots 2 3 5 6	F7
shift space dots 2 3 6	F8
shift space dots 3 5	F9
shift space dots 3 5 6	F10
shift space control dot 2	F11
shift space control dots 2 3	F12

### Numeric keypad keys

BraillePen keys	Windows key
control space dots 2 4 5	Numpad 0
control space dot 1	Numpad 1
control space dots 1 2	Numpad 2
control space dots 1 4	Numpad 3
control space dots 1 4 5	Numpad 4
control space dots 1 5	Numpad 5
control space dots 1 2 4	Numpad 6
control space dots 1 2 4 5	Numpad 7
control space dots 1 2 5	Numpad 8
control space dots 2 4	Numpad 9
control dots 5 6	Numpad +
control space dot 2	Numpad .
control dots 2 3	Numpad -
control space dots 3 5	Numpad *
control space dots 2 5 6	Numpad /
control dots 1 3 4 5	NumLock

### Unused keystrokes in the US keymap (BP Slim keys only)

See the file `available-keystrokes.txt`.