Bluetooth Virtual Keyboard
For Palm OS5

User Guide v1.7

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Introduction

Congratulations on choosing the VKB Virtual Keyboard for PalmOS5 handheld. The keyboard will allow the effortless composition of documents and e-mails and will turn your PDA/Phone into a truly indispensable tool whether in the office or on the go.

Please take a few minutes to review the simple operating instructions in order to get the most out of your keyboard.

General Product Description

The Virtual Keyboard is a miniature, stand-alone accessory that emulates the function of a standard, full-sized keyboard. The Virtual Keyboard can connect via Bluetooth to almost any information appliance, including: PCs, Tablet PCs, Laptops, PDAs and Smartphones, with the use of an appropriate driver.

Laser Safety Precaution

The Virtual Keyboard device emits two laser beams. One beam (red) projects the keyboard image, and the other beam (invisible) is used for sensing the touched keys.

The radiation levels of both laser beams do not exceed the Accessible Emission Limits of Class 1, as defined by the international standard IEC 60825-1 (A2) and the American standard 21 CFR 1040.10. The Virtual Keyboard device is, therefore, a "Class 1 Laser product".

This means that the Virtual Keyboard device is safe under reasonably foreseeable conditions of operation.

Although the emitted laser beams are safe (as defined in the above standard), it is highly recommended not to stare directly into laser beams.

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PalmOS is a registered trademark of Palm Inc.

VKB Virtual Keyboard is a registered trademark of VKB Inc.

Bluetooth is a registered trademark of Bluetooth SIG.

Getting Started

Your Virtual Keyboard

Unpack and inspect your Virtual Keyboard. Take a few moments to familiarize yourself with device using the diagram below.
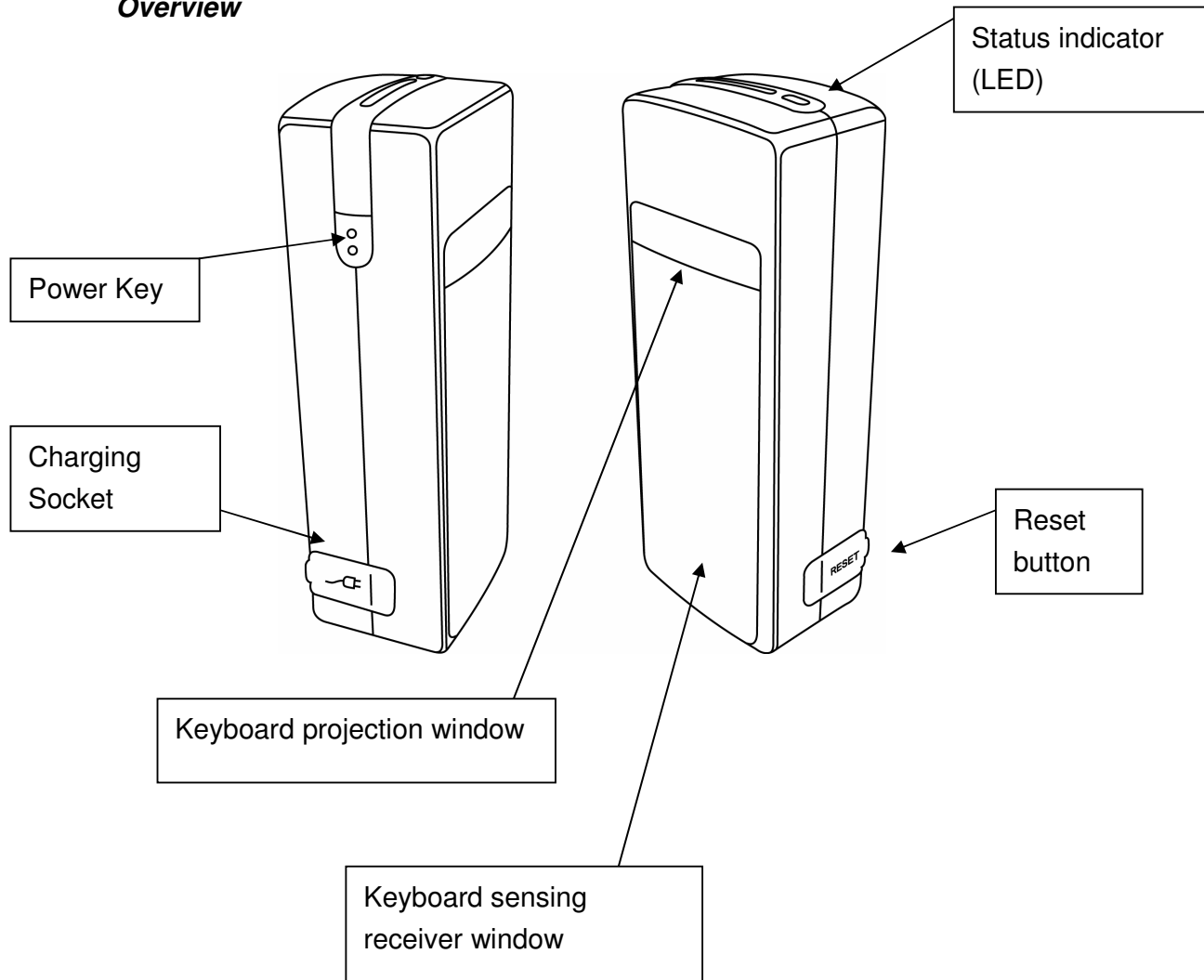
Overview

Figure 1 – Getting to know your Virtual Keyboard

Before using your Virtual Keyboard:

- Ensure that you remove all protection materials including the protection sheet on the laser windows.

- Your Virtual Keyboard will need to be charged for at least 2 hours.

Switching On

Place the Virtual Keyboard on a flat surface with the Keyboard projection and sensing windows facing you. To switch it on press the On/Off button, located on the upper-left hand side.

Once the unit is switched on an image of a keyboard is projected on to the surface. Notice that the keyboard image is the basic English keyboard, including 4 Arrow keys, 1 Control, 2 Shift keys, 1 Alt and a VKB dedicated Fn function key.

A two-color LED located at the top of the unit indicates the current status of the Virtual Keyboard, where:

Colour	Status/Cause	Action
Blinking Blue	Virtual Keyboard is ready to pair to a Bluetooth device	
Long Flash Blue	Virtual Keyboard is paired to a Bluetooth device	
Blinking Red	Virtual Keyboard's battery is low.	Recharge the Virtual Keyboard
Solid Red	The area of the projected keyboard is exposed to direct sun-shine or some other source of direct light.	Move the Virtual Keyboard to a shaded location

Table 1 – Functional Status Indicator

Virtual Keyboard your PalmOS5 PDA/Phone and Bluetooth

The Virtual Keyboard (VKB) is equipped with Bluetooth, a short-ranged radio communications technology which allows the device to communicate with your PalmOS5 PDA/Phone up to 10 meters away without the need for a physical connection.

As with all Bluetooth devices, to connect with your PalmOS5 PDA/Phone you will need to do the following:

- Pair your PalmOS device with the virtual keyboard…
- …open the VKB Driver to set up a connection…
- …and connect.

The first time you use your Virtual Keyboard with a PalmOS5 device you will also need to install some software, called a driver, on the PalmOS5 device.

Installing the driver on your PalmOS5 Device

1. Install the **Palm Quick Install** program that is provided with your PalmOS device.
2. Insert the Bluetooth Virtual Keyboard & User Guide Disk into a CD-ROM drive on your computer. (The CD should run automatically however if it does not start by itself, please open the CD and run **setup.exe**)

3. Select the PalmOS5 device, which matches yours.

4. Select **Install Software** and follow the onscreen instructions to install the software onto your PalmOS5 device.
5. The next time you perform a **HotSync** the VKB Driver will be installed on your **PalmOS5 device**.

Preparing your keyboard for pairing

Place the Virtual keyboard on a flat surface and turn it on. The blue LED at the top should flash at about once a second. This signifies that the Virtual Keyboard is currently "unpaired" with any device. If this is not the case, please see "Resetting the Device for Bluetooth Pairing" on page 18.

Your keyboard is now ready for pairing.

Pairing with your device

1. Tap the Bluetooth icon on your PalmOS5 PDA/Phone
2. Tap the **On** button
3. Tap the **Prefs** or **Setup Devices** button
4. Tap the **Trusted Devices** button

Ensure the VKB is in paring mode

1. Tap **Add Device**
2. Select **VKB Keyboard** and tap **OK**
3. Listen for the "beep" on the Virtual Keyboard, then, using the keyboard projected by the Virtual Keyboard enter a passkey of between 1 and 8 numbers on the projected keyboard and press return [↵].
4. Repeat the passkey on the Palm device and tap **OK**
5. Tap the **Home** button and tap the **VKB** program.
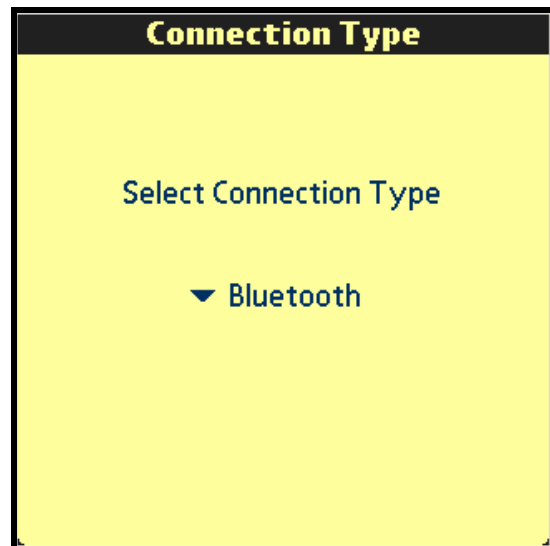6. Open the **Menu** and select **Connections** from the list.

Figure 2 – Select Connection Window

7. Select **Bluetooth** from the drop down list.
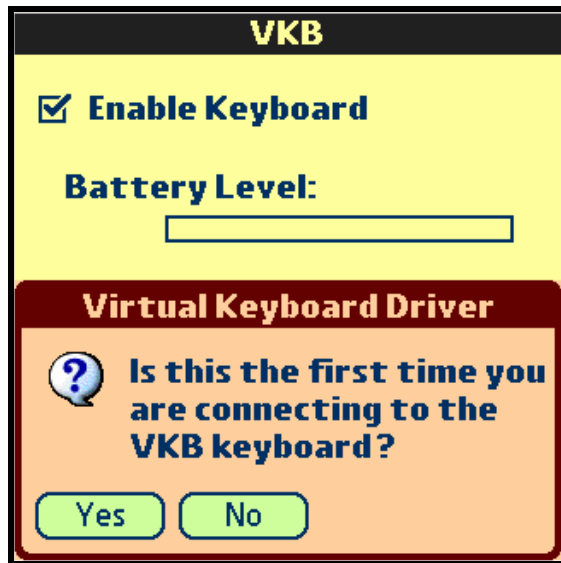8. Open the **Menu** and select **VKB**, then select **Enable Keyboard**

Figure 3 – Virtual Keyboard Driver Dialogue

9. Select **Yes** on the Bluetooth Setup dialogue box (select No on all subsequent connections).
10. Select the **VKB Keyboard** from the list and tap **OK**

The blue LED will go on to show your successful connection. Your Virtual Keyboard is now connected to the PalmOS5 device.

You are now ready to use the keyboard.

Application Demonstration

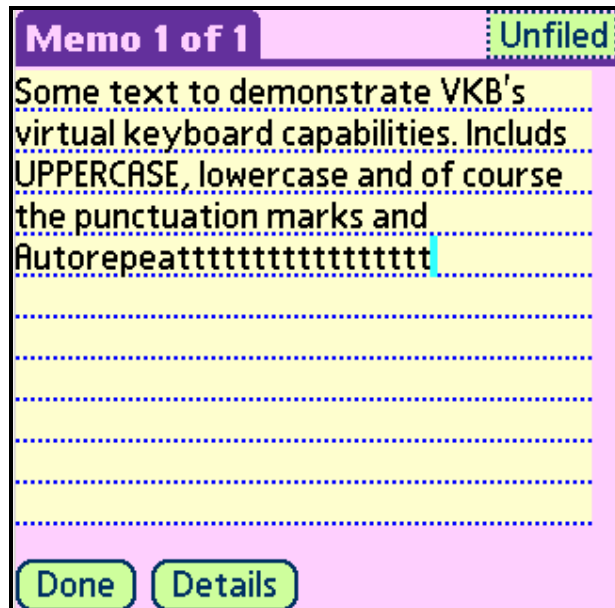Open any application and start typing.

Figure 4 - Memo editing demonstration screen

Exploring the VKB Driver

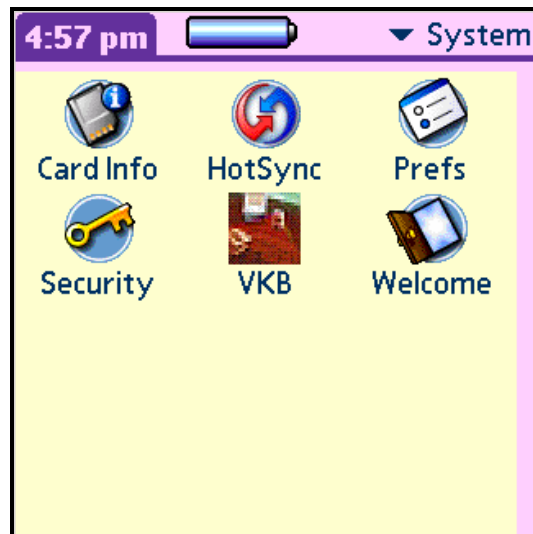Go to the Home Page, locate the software driver on your PalmOS5 PDA/phone.

Figure 5 - Screen for VKB Application Icon

VKB Form

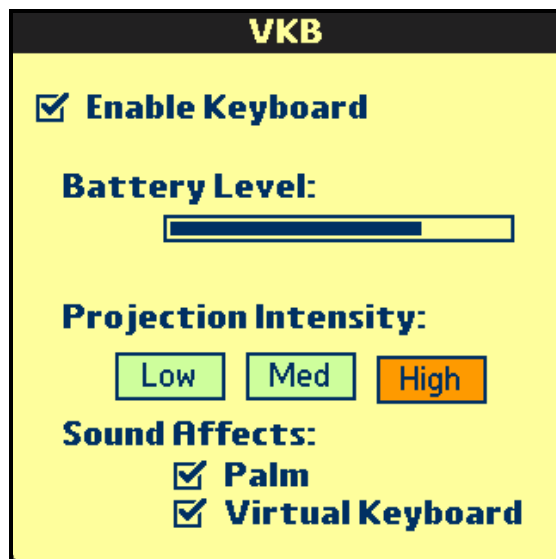Open the VKB page by clicking on the VKB icon.

Figure 6 - VKB Main Form

Battery Level

The battery level, displays the current level of the battery in the Virtual Keyboard. Use this indicator to check when the Virtual Keyboard required charging.

Projection intensity

You may adjust the intensity of the projected keyboard to so that it is visible in different light conditions. You may select from between Low, Medium and High settings.

Sound Effects

The Virtual Keyboard can be set up to emit a "key-click" whenever you press a key on the projected virtual keyboard. Using the checkboxes you can set the key-click to be emitted by your PDA/phone and/or the Virtual Keyboard.

Move between this and the other pages of the VKB driver using the **Menu**
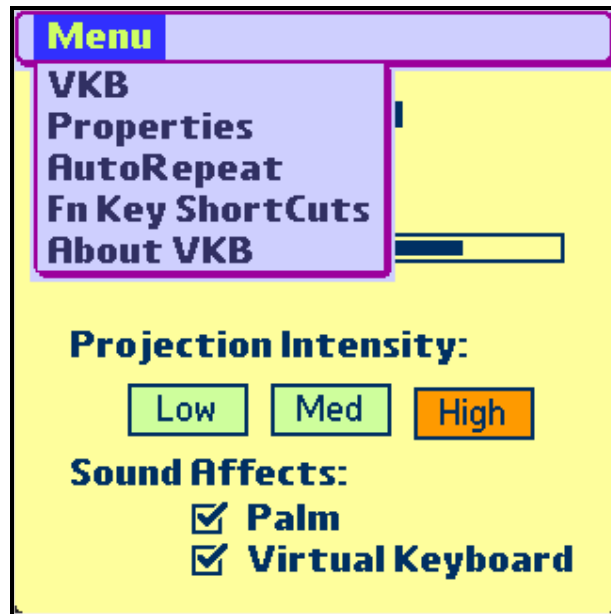

Figure 7 - VKB Menu Details
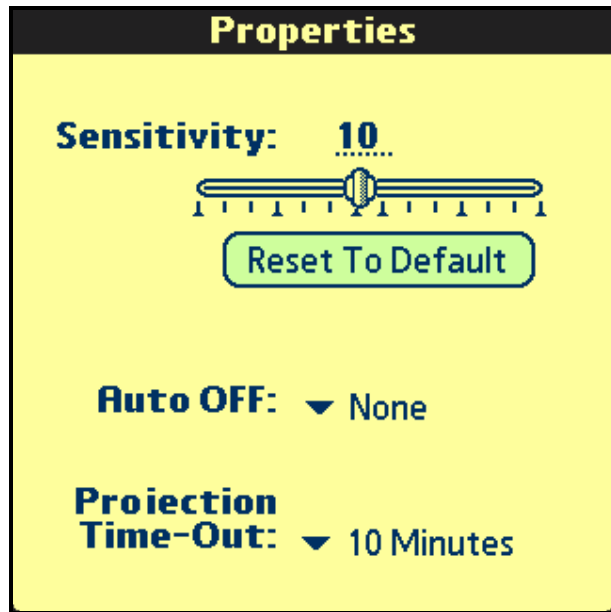
Properties Form

Figure 8 - VKB Properties Form

Sensitivity
You can adjust the sensitivity of the Virtual Keyboard's key-press detection. The default value for this parameter is 10, however you may need to adjust this for optimal use. If you are experiencing missed key presses, try raising the sensitivity setting. If you are experiencing extra key presses, try lowering the sensitivity.
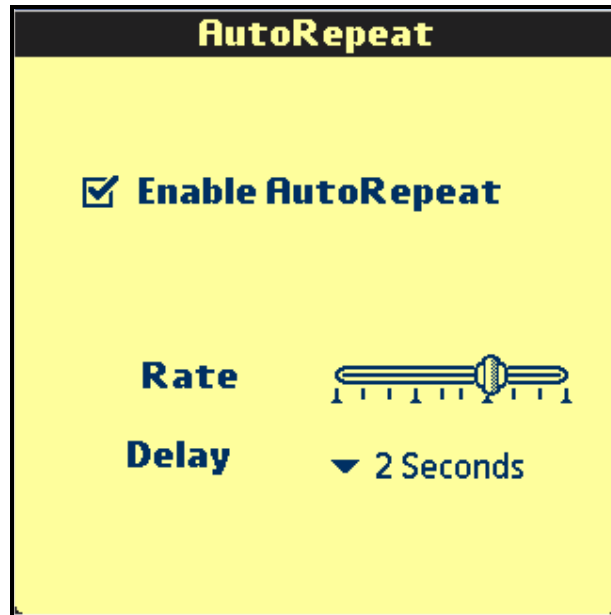
Reset to Default
Pressing the Reset To Default button will cause the Virtual Keyboard and driver to reset the sensitivity to the keyboard's factory settings.

Time-Outs
To conserve the battery of the Virtual Keyboard it can be set to switch off automatically if it has not been used for a while. There are two separate settings which may be adjusted to suit you. Projection Timeout switches off the projected keyboard. Auto Timeout switches off the whole device. When a period exceeding the Projection Timeout has elapsed without typing on the keyboard, the projection will automatically turn off. Pressing anywhere will cause the keyboard to be projected again. When the Auto Time-Out has

elapsed the Virtual Keyboard will switch off. If this occurs, press the button on the Virtual Keyboard to turn it on again.

AutoRepeat Form

Figure 9 - VKB AutoRepeat Form

The AutoRepeat feature employed by the VKB Driver allows the system to automatically repeat a key that is being pressed.

Enable AutoRepeat

Selecting the Enable AutoRepeat checkbox switches the AutoRepeat function on and off.

Repeat Rate

The rate at which the key depression occurs is set using the Repeat Rate slider.

Initial Repeat Delay

The period before the key press is repeated can be set between 1 and 4 seconds using Initial Repeat Delay drop down box.

Special Short-Cuts Form

The Short-Cuts form, displays the Virtual Keyboard's special combination keys, which may be accessed without exiting the application you may be working with.

The About Form

The About Form displays the Virtual Keyboard Driver's software version as well as the software version of the Virtual Keyboard. If you have encountered, and are reporting a problem, please relay information displayed on this page.

Remarks : the displayed screen is for reference, for detail please browse i.Tech website : http://www.itechdynamic.com

General Handling Instruction
Micro-switch

The device is equipped with a micro-switch which disables the Virtual Keyboard lasers when the device is picked up. This is a safety measure. Do not attempt to override this micro-switch.

General Maintenance

- Avoid touching the keyboard sensing receiver window.
- Never touch the keyboard projection element.
- Avoid exposing the keyboard to moisture or extreme temperatures.
- Do not disassemble or try to touch the inside of the device.
- Do not attempt to charge the device with a different charger than the one provided by VKB.
- If the windows become dirty clean only with a soft, lint free dry cloth. Do not use any solvents or cleaners.

Resetting the keyboard to factory settings

- Turn the keyboard on and gently insert the end of a sharp object into the reset hole found under the rubber flap on the right side of the keyboard. Press for about half a second and then remove the clip.
- After about 2 seconds, the keyboard will emit a short "beep" and the LED will flash blue.
- Pick up the keyboard and wait for it to turn off,
- Place the Virtual Keyboard back on the flat surface and turn it on.
- The Virtual Keyboard is now ready for pairing.

Preparing the keyboard to be paired with a different device

Once the keyboard has been paired and connected to a host device, to pair the keyboard with a different host device, turn the keyboard on, and on the projected image press the keys ⇧**+Fn+B** simultaneously for 3 seconds. The keyboard will emit a short beep and the LED will flash blue to indicate it is ready for pairing with another device.

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Troubleshooting

Problem	Possible cause	Corrective action
My keyboard is connected, but little or no keys are being detected	The detection sensitivity is to low.	Raise the detection sensitivity setting and try again.
When typing, multiple and/or erroneous keys are displayed in addition to those I have pressed.	The detection sensitivity setting is too high.	Lower the detection sensitivity setting and try again.
	Device is not resting on a firm flat surface	Reposition device to a firm surface.
My device doesn't emit sounds when pressing a key	Sound affects, on your PalmOS5 device, have not been enabled.	Enable Sound affects on the device, Preferences → System Sound.
My keyboard is turned on but no image appears.	Device is not charged	Charge device
	Device is overheated	Move device to a cooler location and wait a few minutes
	Device is not resting on a firm flat surface	Reposition device to a firm surface and verify that the micro-switch is fully depressed.
	Micro-switch stuck	Clean micro-switch

Specifications

Keyboard Projector	Light source	Red diode laser
	Keyboard layout	63 key / full sized QWERTY layout
	Keyboard size	295 x 95mm projected keyboard size
	Keyboard position	60mm from VKB unit
	Projection surface	Non-reflective, opaque flat surface
	Visibility	Good contrast up to 600 lux ambient illumination
Keystroke Sensor	Ambient illumination	Works under all standard indoor illuminations up to 600 lux
	Detection rate	Up to 400 characters per minute
	Detection algorithm	Multiple keystroke support
	Effective keystroke	Approximately 2mm
	Operating surface	Any firm flat surface with no protrusions greater than 1mm
Bluetooth	Bluetooth Specification	Bluetooth v1.1 class 2
	Bluetooth Profile Supported	HID and SPP
	Range of Frequency	2.4GHz Spectrum
	Transmission range	9m
	Number of supported passkeys	5

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Electrical	Power source	Integrated, rechargeable lithium-ion battery
	Voltage	3.6 Volts
	Battery capacity	> 120 minutes continuous typing
	Interface	Bluetooth v1.1 class 2
	Connector – to charger	Vbat, Gnd
Software	Compatibility	MS Windows 2000 / XP, PalmOS5, PocketPC, Smartphone2003,Symbian
Mechanical & Environmental	Dimensions	Approximately 35 x 92 x 25 mm
	Weight	~90 gram
	Temperature - operation	10 – 35 C$^{\circ}$
	Temperature - storage	-10 – 75 C$^{\circ}$
Certification & Safety*	EMC per CE	EN 55024; 55022; EN 61000-3-2; -3-3
	BQB, CE, FCC	
	Laser safety	IEC 60825-1; Class 1 laser enclosure

*Certification will be completed prior to commercial introduction

Short-Cuts

Short Cuts	PalmOS5 PDA/Phone	Note
Fn 1	App Button #1	
Fn 2	App Button #2	
Fn 3	App Button #3	
Fn 4	App Button #4	
Fn Return	Activate Key	
Fn Up Arrow	Page Up	
Fn Down Arrow	Page Down	
Fn B	Backlight	
Fn H	Home Page	
Fn M	Menu	
Fn N	Next Field	
Fn P	Previous Field	
Fn S	Toggle Key Clicks	
⇧ Fn B	<Break Pairing>	
⇧ Fn R	<Reset Sensitivity>	
⇧ Fn Up Arrow	Inc Proj. Intensity	Special beep is emitted at maximum intensity
⇧ Fn Down Arrow	Dec Proj. Intensity	Special beep is emitted at minimum intensity
⇧ Fn Right Arrow	Inc Sensitivity	Different beep tone emitted for each sensitivity setting
⇧ Fn Left Arrow	Dec Sensitivity	Different beep tone emitted for each sensitivity setting