Bluetooth Virtual Keyboard
For Pocket PC 2003

(with Microsoft Bluetooth Stack)

User Guide v1.7

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Introduction

Congratulations on choosing the VKB Virtual Keyboard for Pocket PC. The keyboard will allow the effortless composition of documents and e-mails and will turn your PDA 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 which keys have been touched.

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 (in line with the standard quoted above), it is highly recommended not to stare directly into laser beams.

Disclaimer

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Trademarks

Pocket PC is a registered trademark of Microsoft Corporation.
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

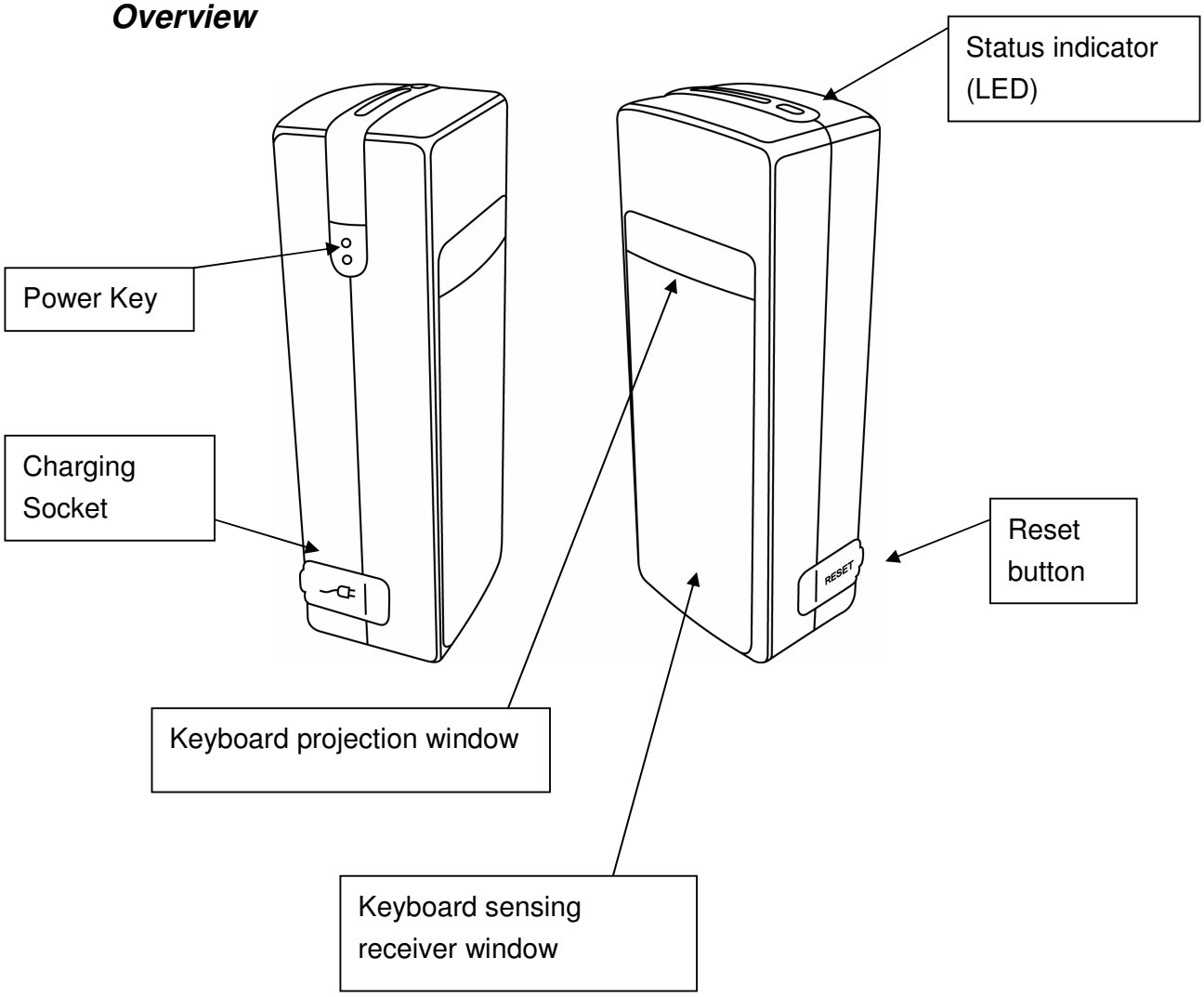


Figure 1 – Getting to know your Virtual Keyboard

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 Pocket PC and Bluetooth

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

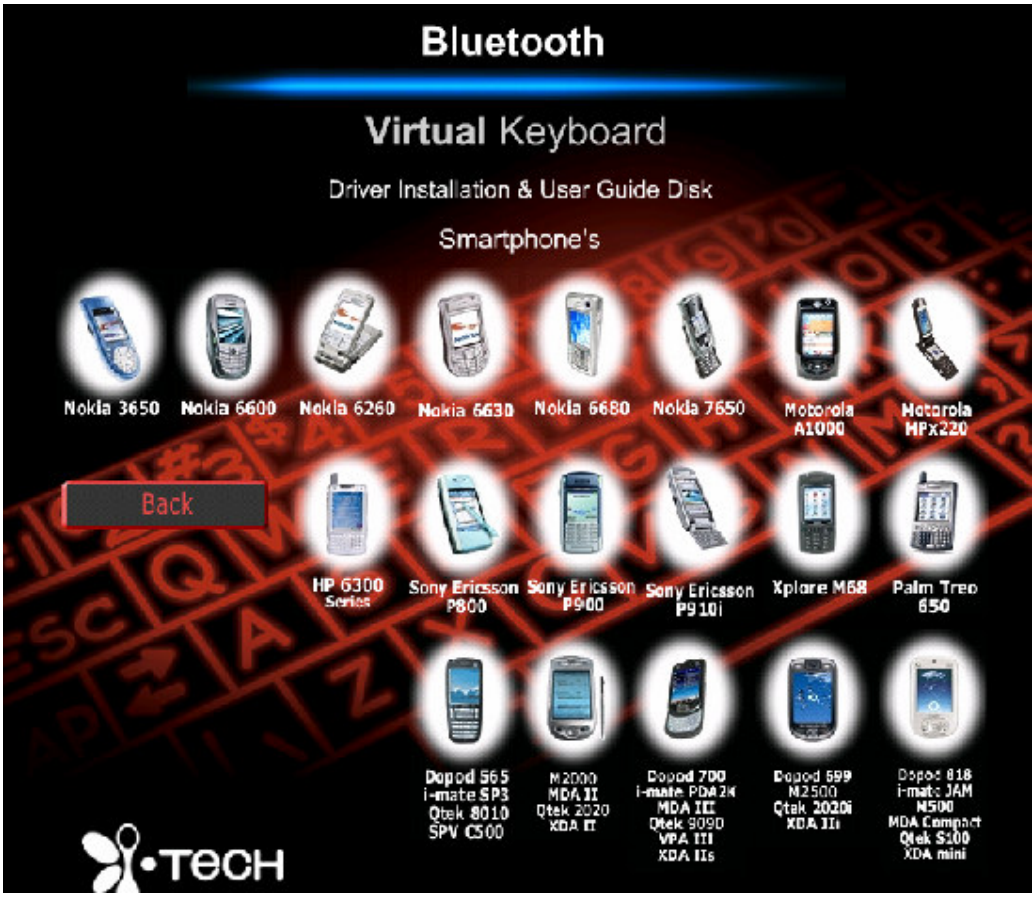
As with all Bluetooth devices, to connect with your Pocket PC you will need to do the following:

- Pair/bond your Pocket PC device to the virtual keyboard…
- …open the VKB Driver to set up a connection…
- …and connect.

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

Installing the driver on your Pocket PC Device

1) Insert the VKB CD into a CD-ROM drive on your computer.
2) Open the Microsoft **ActiveSync** program on your computer.
3) 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**)
4) Follow the onscreen prompts to arrive at the Smartphone's page.



5) Select the Smartphone device, which matches yours.
6) Select **Install Software** and follow the onscreen instructions to install the software onto your Pocket PC device.

Your Virtual Keyboard Driver is now installed on your Pocket PC device.

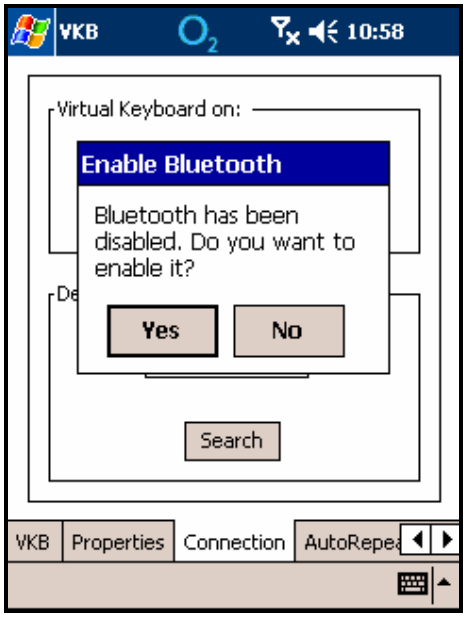
Preparing your keyboard for connecting

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 keyboard to factory settings” or “Preparing the keyboard to be paired with a different device” on page 20.

Your keyboard is now ready for connecting.

Connecting with your device

1) Tap the **VKB** program ( ).
2) Tap the **Connection** tab and select **Bluetooth** from the "**Virtual Keyboard on:**" drop down box
3) Press the **Search** button at the bottom of the dialog.
4) (If Bluetooth on your Pocket PC has not been turned on, you will prompted to do so)



5) Upon completion of the search, the drop down list of devices will be filled with VKB Keyboards found – select one.

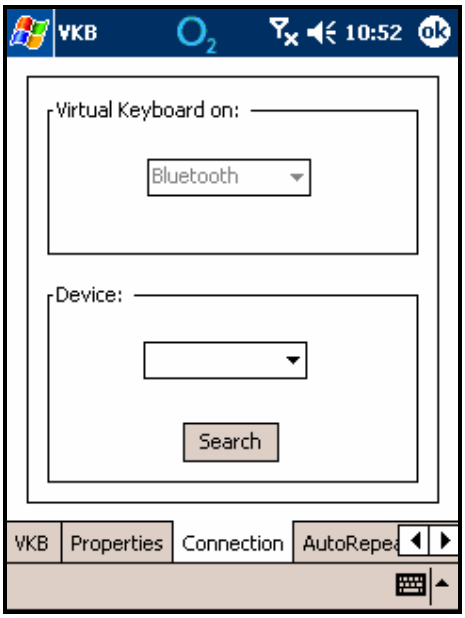


Figure 2 – VKB Connection Menu

6) Tap the **VKB** tab and select **Enable VKB**

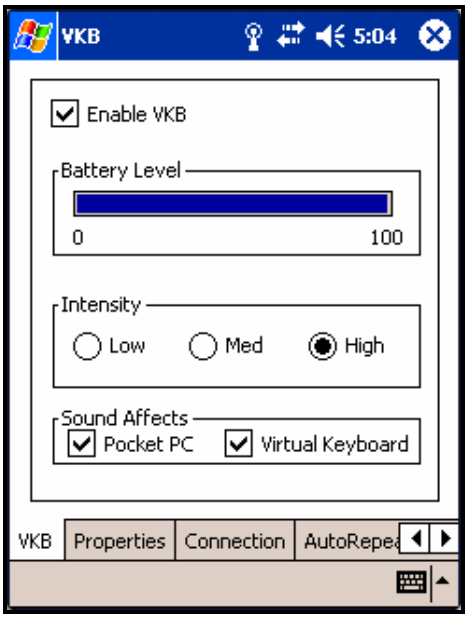


Figure 3 – VKB Main menu

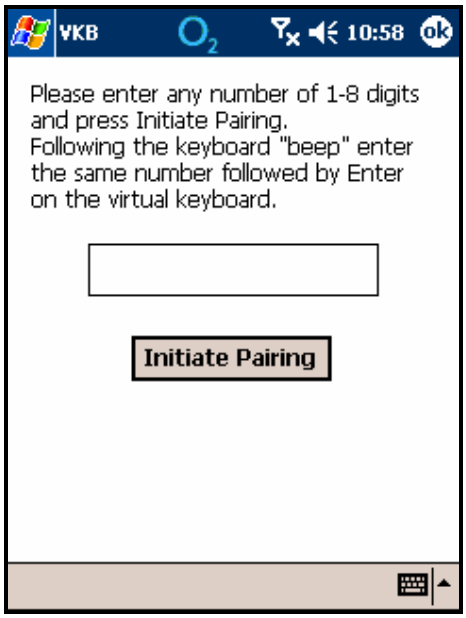


Figure 4 – Bluetooth Passkey Entry

7) Using the keyboard on the screen of the Pocket PC device, enter a passkey of between 1 and 8 digits and then tap **Initiate Pairing.**
8) Listen for the “beep” on the Virtual Keyboard, then, using the keyboard projected by the Virtual Keyboard repeat the passkey and press return [↵].

The blue LED will go on to show your successful connection. You are now ready to use the keyboard.

The Virtual Keyboard is now connected to your Pocket PC device.

Application Demonstration

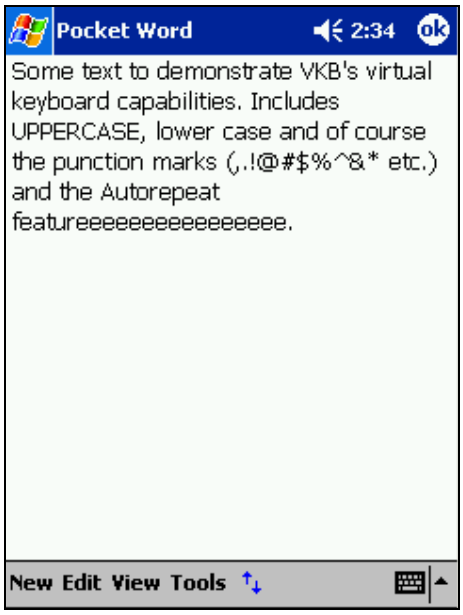


Figure 4 - Demonstration application start screen

To test the keyboard open any application (e.g. Pocket Word) and start typing.

Using the VKB Driver Software

The VKB driver software can be used to adjust the settings of your Virtual Keyboard.

VKB Page

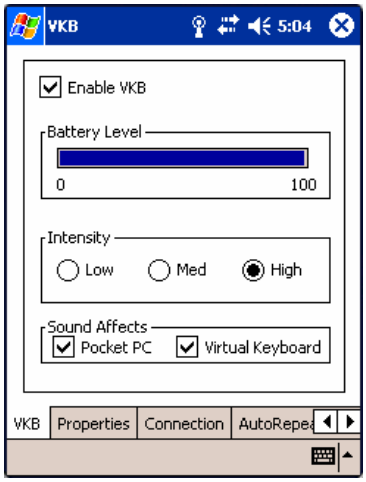


Figure 5 – VKB Main menu

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. If the battery level drops too low during use a “Low Battery” indicator will flash in your System Tray. (See Indicators). Time to recharge the battery!

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 computer and/or the Virtual Keyboard.

Properties Page

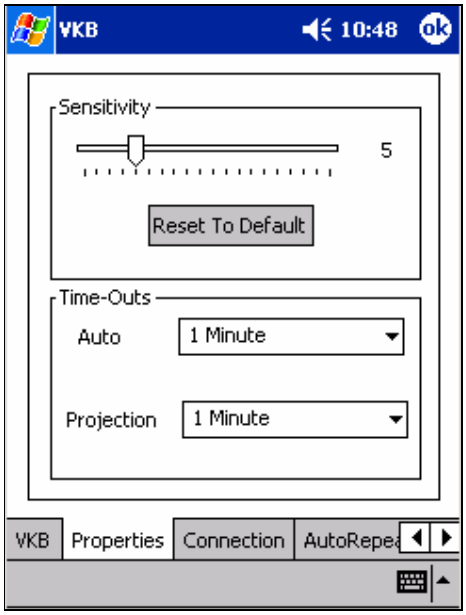


Figure 6 – Properties Page

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.

Connection Page

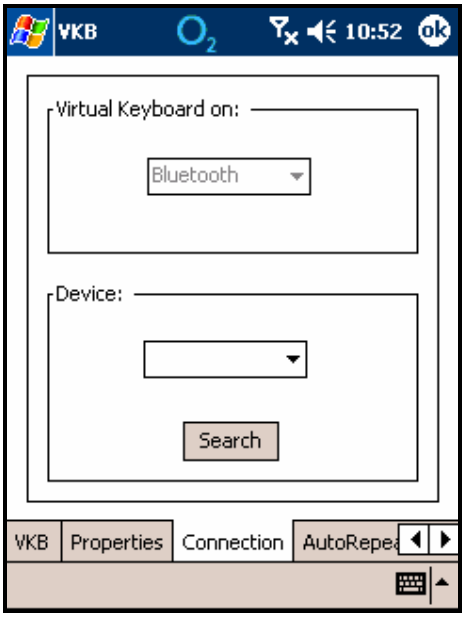


Figure 7 – VKB Connection Menu

Virtual Keyboard Connection

The Virtual Keyboard Driver has been setup to communicate with the Virtual Keyboard via Serial or Bluetooth. This should always be set to Bluetooth. If the drop down box displays **Serial** use the stylus to change this selection to **Bluetooth**.

AutoRepeat Page

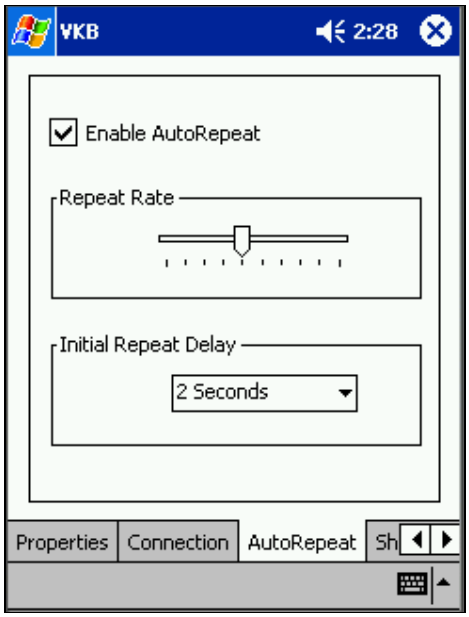


Figure 8 – AutoRepeat Menu

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.

Short-Cuts Page

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

About Page

The About Page 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.

The Virtual Keyboard Status Icon

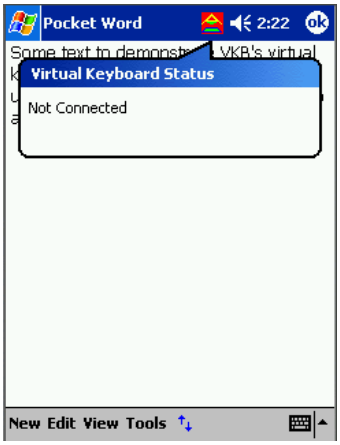


Figure 9 – The Virtual Keyboard Status Indicator Icon

When active, the VKB icon is displayed upon encountering one of the following problems. Fix the problem and the icon will disappear.

Message	Cause	Action
Not Connected	The Virtual Keyboard Driver can not communicate with the Virtual Keyboard	- Check that the Virtual Keyboard is switched on. - Check the Bluetooth pairing procedure is performed correctly. - Check that Bluetooth has been selected in the Connections Page. - Ensure the Bluetooth connection is not being used by another application.
Low Battery	The Virtual Keyboard's battery is low.	- Recharge the Virtual Keyboard
Too Much Light	The area of the projected keyboard is exposed to sunshine or some other source of direct light.	- Move the Virtual Keyboard to a more shaded area.

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.

Troubleshooting

Problem	Possible cause	Corrective action
My keyboard is connected, but little or no keys are being detected	The detection sensitivity is too 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 keyboard doesn't show the battery indicator when enable checkbox is clicked	Device is not pairing on a Bluetooth compatible device	Start pairing the device.
My Pocket PC doesn't accept the authentication of my keyboard while pairing	Matching passkey is not being entered on both Pocket PC and virtual keyboard.	Re-start pair device to re-enter the matched passkey.
My Pocket PC doesn't emit key taps when pressing a key	Sound affects, on your Pocket PC device have not been enabled.	Enable "Sound affects on Virtual Keyboard" on VKB driver.; Ensure that your Pocket PC Sounds Notifications is set for taps.

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
“Bluetooth” does not appear as option in Connections list	Your Pocket PC device does not have Bluetooth.	
	The Bluetooth software on your Pocket PC device is not compatible with the keyboard.	Please contact your service center.

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

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, Pocket PC2003, Smartphone 2003, Symbian 60/UIQ2.x
Mechanical & Environmental	Dimensions	Approximately 35 x 92 x 25 mm
	Weight	~90 gram
	Temperature - operation	10 – 35 Cº
	Temperature - storage	-10 – 75 Cº
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	Pocket PC	Note
Fn1 through Fn4	App Button #1 - 4	
Fn Up Arrow	Page Up	
Fn Down Arrow	Page Down	
Fn M	Menu	
Fn S	Toggle Key Clicks on/off	
⇧ Fn B	<Break Pairing>	
⇧ Fn R	<Reset to default Sensitivity>	
⇧ Fn Up Arrow	Increase Projection Intensity	Special beep is emitted at maximum intensity
⇧ Fn Down Arrow	Decrease projection intensity	Special beep is emitted at minimum intensity
⇧ Fn Right Arrow	Increase sensitivity	Different beep tone emitted for each sensitivity setting
⇧ Fn Left Arrow	Decrease sensitivity	Different beep tone emitted for each sensitivity setting
Alt Fn 4	Pound (£) Symbol	
Alt Fn 5	Euro (€) Symbol	