

# **Bluetooth Virtual Keyboard For Windows 2000 / XP**

**User Guide v1.6**



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## **Introduction**

Congratulations on choosing the VKB Virtual Keyboard for Windows 2000 and XP systems. So throw away that old clunky keyboard, free up valuable desk space and put an end to sticky keys.

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

### ***General Production 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 (as defined by the above standard), it is highly recommended not to stare directly into laser beams.

### ***Disclaimer***

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### ***Trademarks***

**Windows 2000 and Windows XP**, are registered trademarks of Microsoft Corporation.

**VKB Virtual Keyboard** is a registered trademark of VKB Inc.

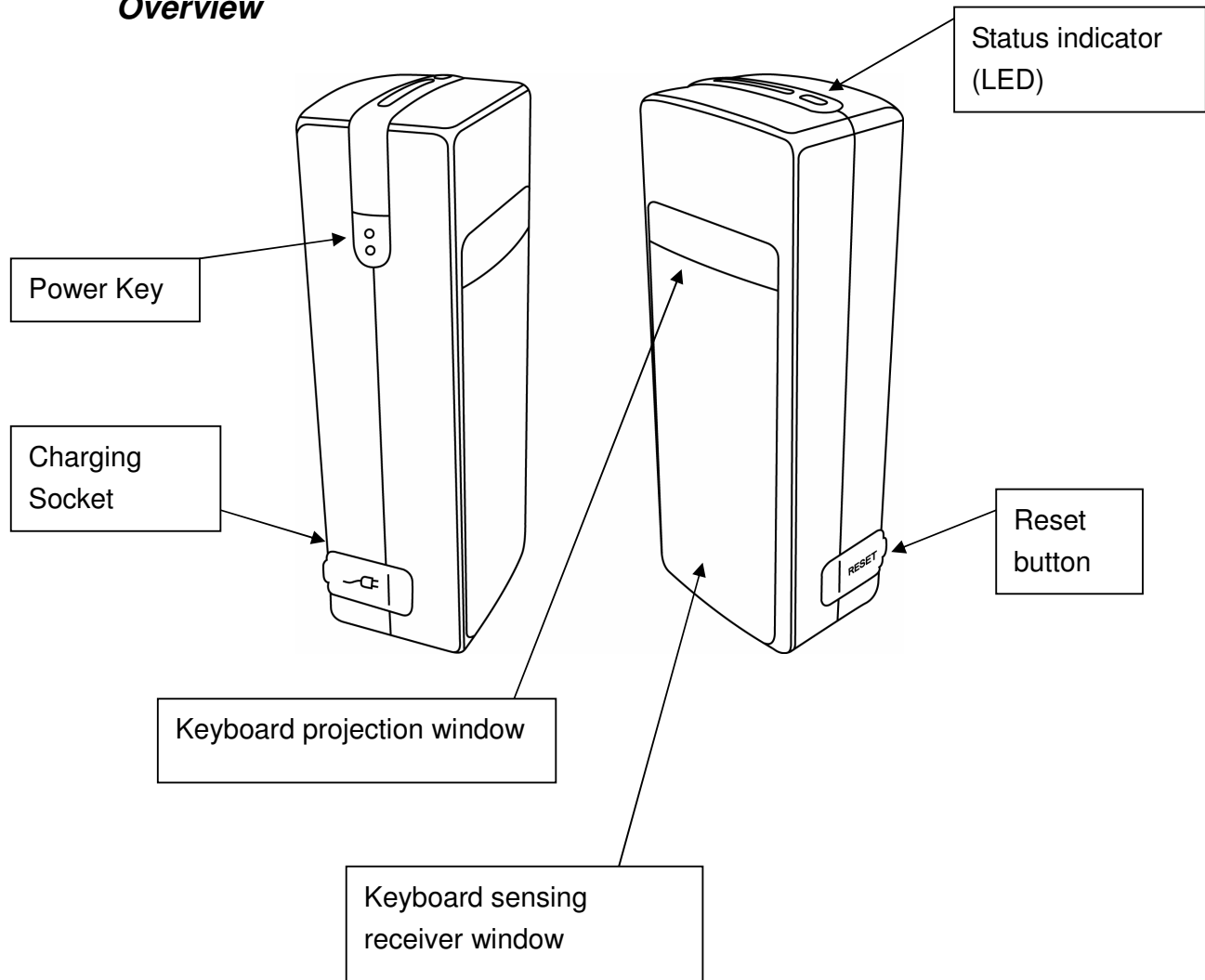
**Bluetooth** is a registered trademark of Bluetooth SIG.

## 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 (VKB) 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
<b>Blinking Blue</b>	Virtual Keyboard is ready to pair to a Bluetooth device	
<b>Long Flash Blue</b>	Virtual Keyboard is paired to a Bluetooth device	
<b>Blinking Red</b>	Virtual Keyboard's battery is low.	Recharge the Virtual Keyboard
<b>Solid Red</b>	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 Windows PC and Bluetooth***

The Virtual Keyboard you have is equipped with Bluetooth, a short-ranged wireless communications technology allowing you to communicate with your Windows PC up to 10 meters away without the need for a physical connection.

The keyboard Bluetooth supports both the HID (i.e. Human Interface Devices) service as well as the SPP (Serial Port Profile) service. For information on which Bluetooth services are provided by your computer, refer to the documentation on the Bluetooth software installed on your PC.

If your computer Bluetooth software supports HID no VKB Driver software installation is required.

If your computer Bluetooth software does not support HID, you may use SPP and you'll need to install the VKB Driver on your computer.

## ***Installing the driver on your Windows PC***

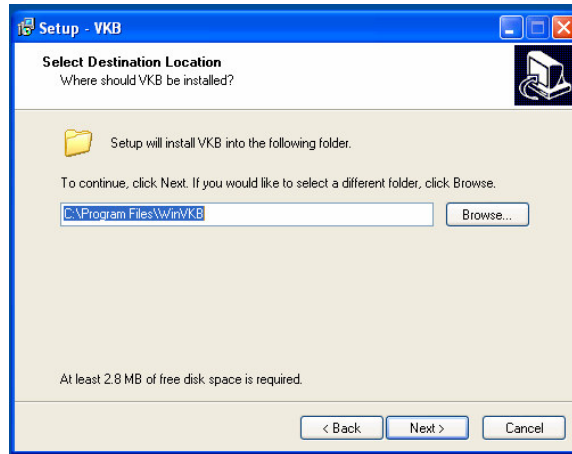
- 1) Insert the VKB CD into a CD-ROM drive on your computer.
- 2) Insert the Bluetooth Virtual Keyboard & User Guide Disk into a CD-ROM drive on your computer. (The CD should run automatically however if it does not start by itself, please open the CD and run **setup.exe**)
- 3) Follow the onscreen prompts to arrive at the PCs page.



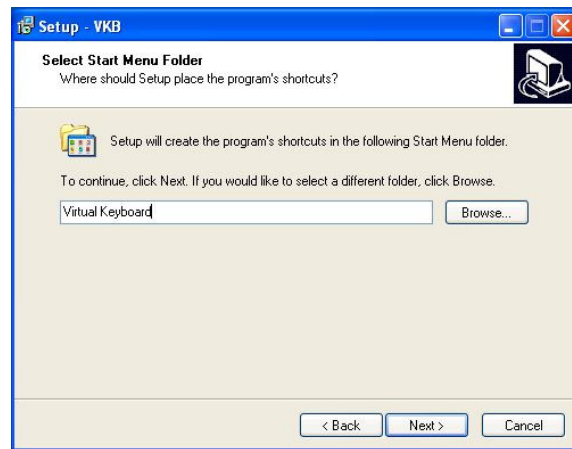
- 4) Select **Install Software** and follow the onscreen instructions to install the software onto your PC.



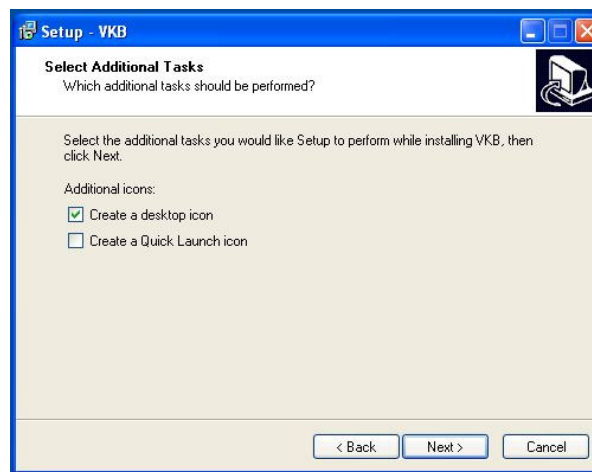
- 5) Press **Next**.



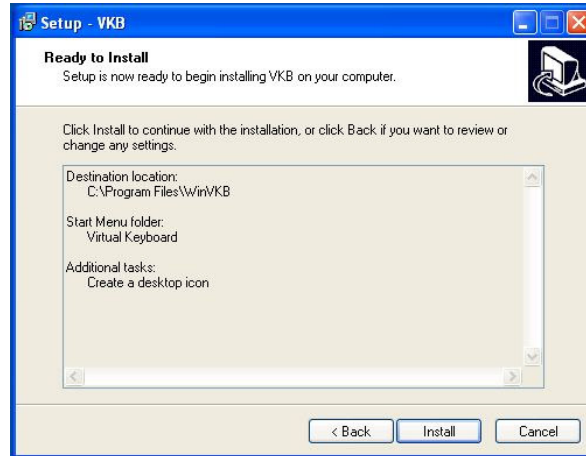
6) Change or Confirm the install location of the software. Press **Next**



7) Change or confirm the Shortcut Folder name. Press **Next**



8) Select which additional tasks you wish to complete. Press **Next**.



9) Review the installation options and press **Install**.

The VKB Driver is now installed on your Windows PC.

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

- Pair/bond your Windows to the virtual keyboard...
- ...open the VKB Driver to set up a connection...
- ...and connect.

## Pairing your Keyboard

### *Preparing your keyboard for pairing*

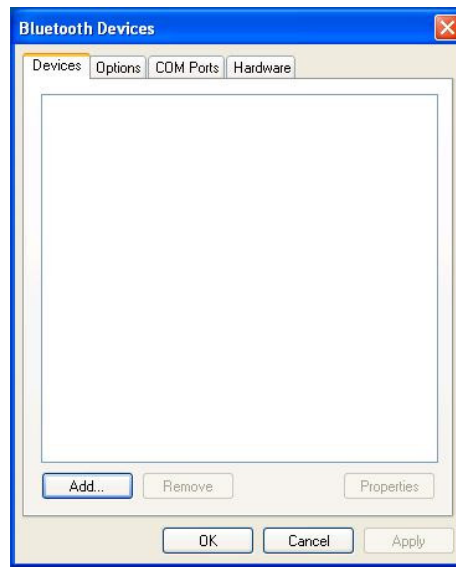
Place the Virtual keyboard on a flat surface and turn it on. The blue LED at the top should flash at about once a second. This signifies that the Virtual Keyboard is currently “unpaired” with any device. If this is not the case, please see “Resetting the keyboard to factory settings” or “Preparing the VKB to be paired with a different device” on page 25.

Your keyboard is now ready for pairing.

### *Pairing with your Computer*

**Note:** The figures in the next sections are for illustrative purposes only. Depending on the Bluetooth Software on your PC the User Interface may differ. Please refer to you PC’s documentation for instructions on pairing with devices.

- 1) Open the Control Panel on your computer and run the Bluetooth software.



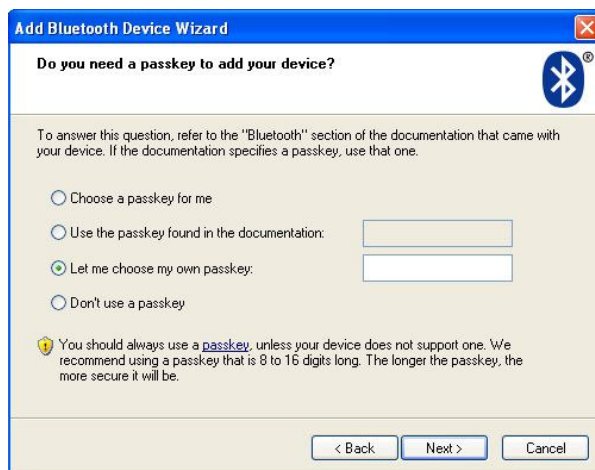
- 2) Press the **Add** button and follow the on-screen instructions to discover nearby Bluetooth devices.



- 3) Once the VKB Keyboard is detected, press **Next** to initiate the pairing process.



- 4) When prompted, select “Let me choose my own passkey” and enter a Passkey of between 1 and 8 characters.



- 5) Press **Next** and then enter the same Passkey followed by <Enter> using the keyboard image projected by the Virtual Keyboard.



- 6) Your Virtual Keyboard is now successfully paired with your Windows PC.



**Note:** Remember the number of the COM port to which the Virtual Keyboard has been assigned. You will need this information later.

## ***Connection with your Computer***

Once the keyboard and computer are paired, the Discover Services function on your computer will allow you to connect via HID (if supported on your computer) or SPP. Check your computer's Bluetooth software to see which services your computer provides and ensure that your preferred service is enabled.

### Connecting via HID Profile

If you would like to use HID Profile, select HID and connect. At this point your computer may start to install HID related modules. This is normal, please wait for the installation to complete. Once finished, the blue LED on the keyboard will go on signifying a successful connection. You are now ready to use the keyboard.



See for a list of special key combinations that use may use for navigation and keyboard settings.

### Connecting via Serial Port Profile (SPP)

- 1) If you would like to use SPP, select **Serial Port** and connect.
- 2) Upon successfully connecting, the blue LED on the keyboard will go on.
- 3) Turn off the keyboard and then turn on.
- 4) The keyboard is designed to automatically re-establish a connection.
- 5) Depending on your computer's Bluetooth software settings, you may be notified of the virtual COM port your keyboard has reconnected on. If not, please look at the settings for SPP on your computer.
- 6) Note the virtual COM port allocated to incoming connections.

## **Running the Driver**

### ***Opening the VKB driver***

1. Locate the software driver, () on your Windows under Programs.
2. Open the VKB page by clicking on the VKB icon (.

NOTE: Ensure that the  Enable Keyboard box is NOT checked.

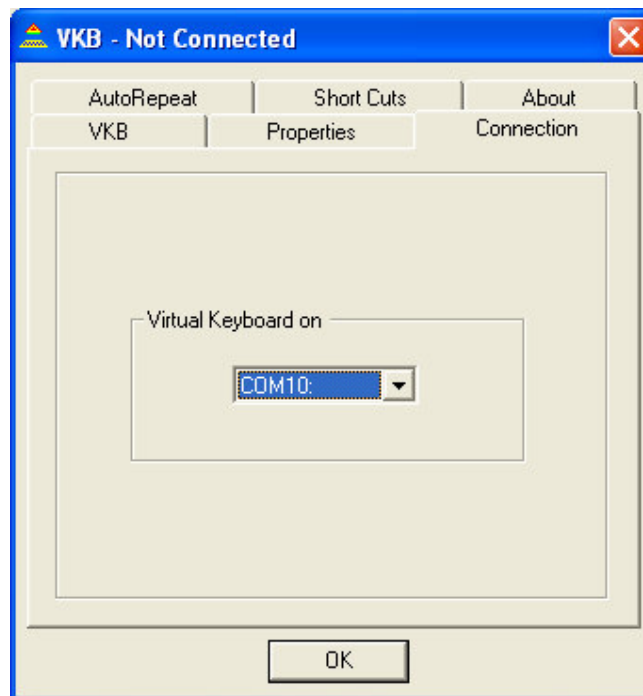
Go to the **Connection** TAB....

### ***Setting up a Connection***

The Virtual Keyboard Driver has been setup to communicate with the Virtual Keyboard via any of the provided physical or virtual COM ports. Check the configuration of the Bluetooth Software running on your computer for the virtual COM port that has been allocated to incoming connections. (See Figure 3 - IVT Service Properties

Figure 4 - Widcom Bluetooth **Configuration screen**).

In the VKB **Connection** Page, please select the appropriate COM port.



**Figure 2- VKB Connection Menu Screen**

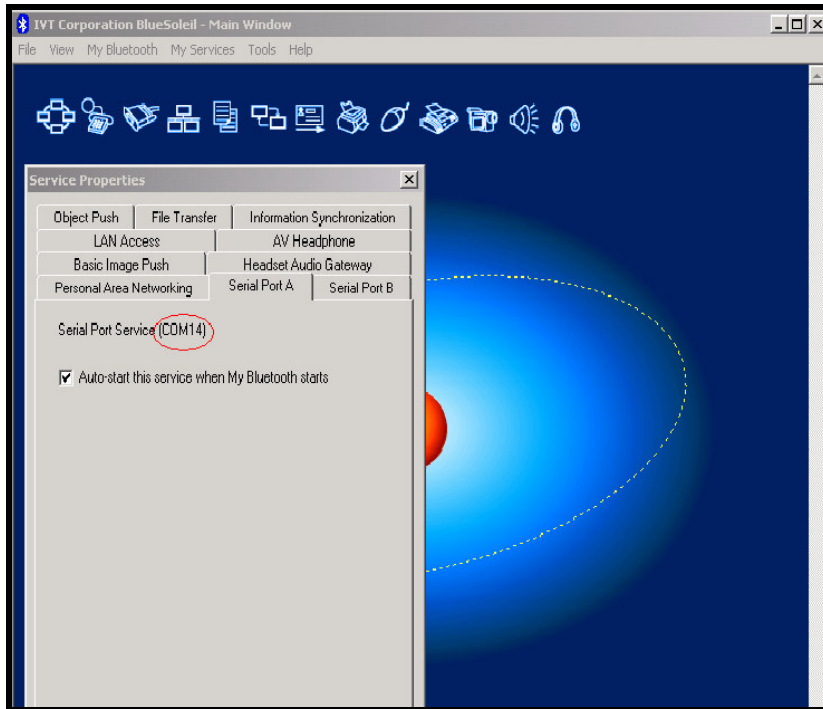


Figure 3 - IVT Service Properties

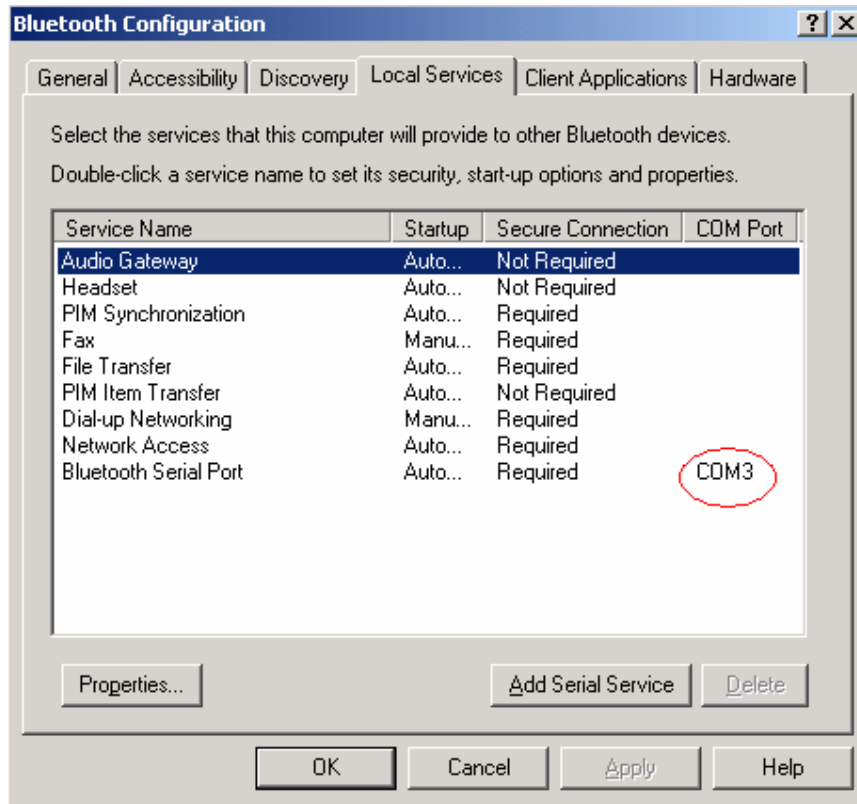
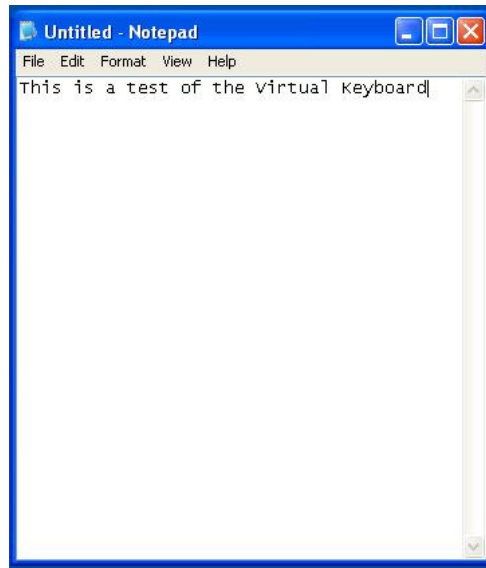


Figure 4 - Widcom Bluetooth Configuration screen.

## ***Application Demonstration***

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

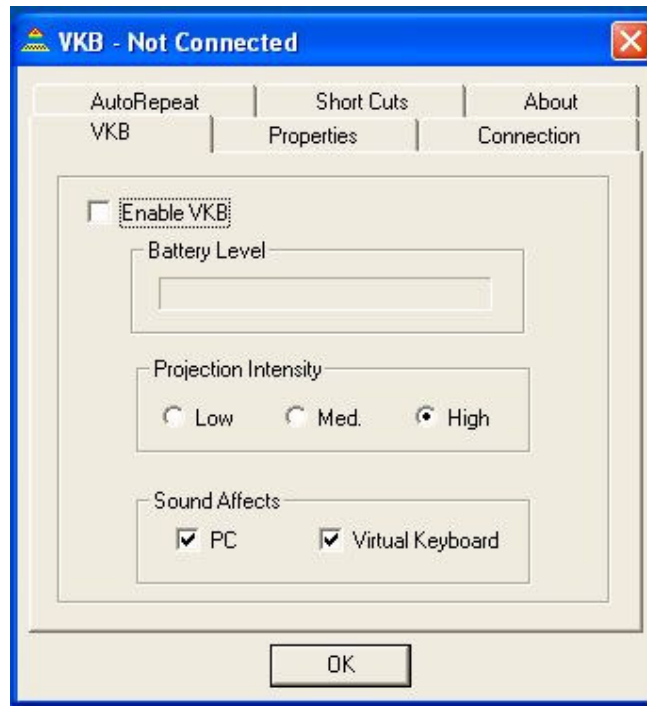


**Figure 5 – Using the Virtual Keyboard to type in Notepad**

## Using the VKB Driver Software

### *Enabling the Keyboard*

Return to the VKB TAB and press on the  Enable Keyboard box so that it is checked.



**Figure 6 -VKB main menu screen**

On the Virtual Keyboard device the blue LED will go on signifying a successful connection. You are now ready to use the keyboard.

### 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). You need to recharge your batteries.

### Projection intensity

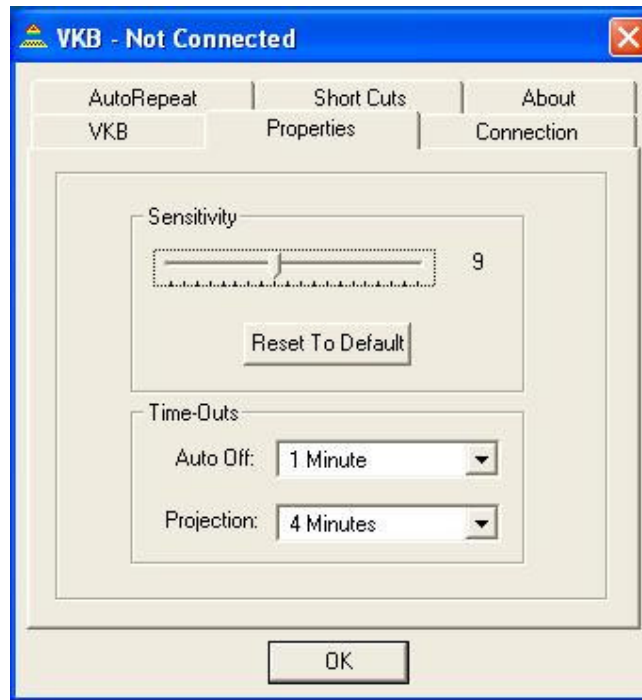
You may adjust the intensity of the projected keyboard to so that it is visible in different light conditions. You may select from between Low, Medium and High settings.

## 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.

NOTE: Before turning your device off, it is recommended to disable the driver by removing the check in  **Enable VKB**.

## ***Properties***



**Figure 7 - 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 setting. If you are experiencing extra key presses, try lowering the sensitivity.

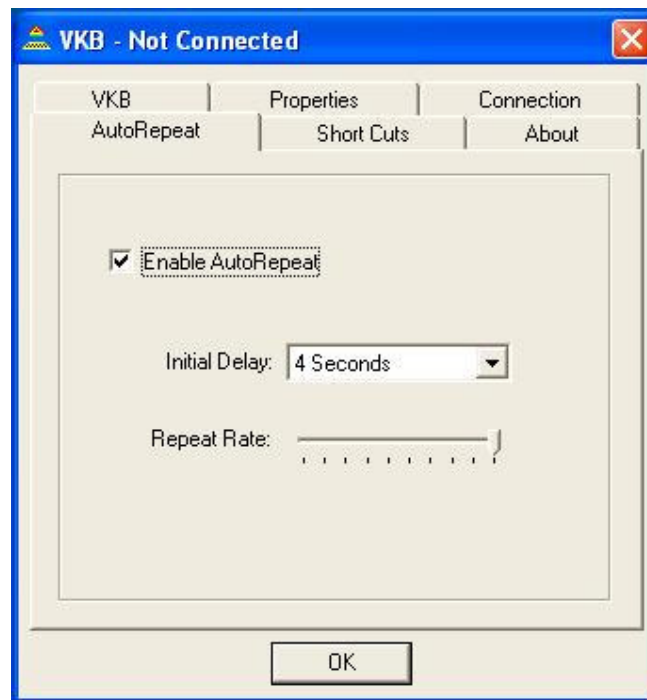
## Reset to Default

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***



**Figure 8 - AutoRepeat Page**

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.

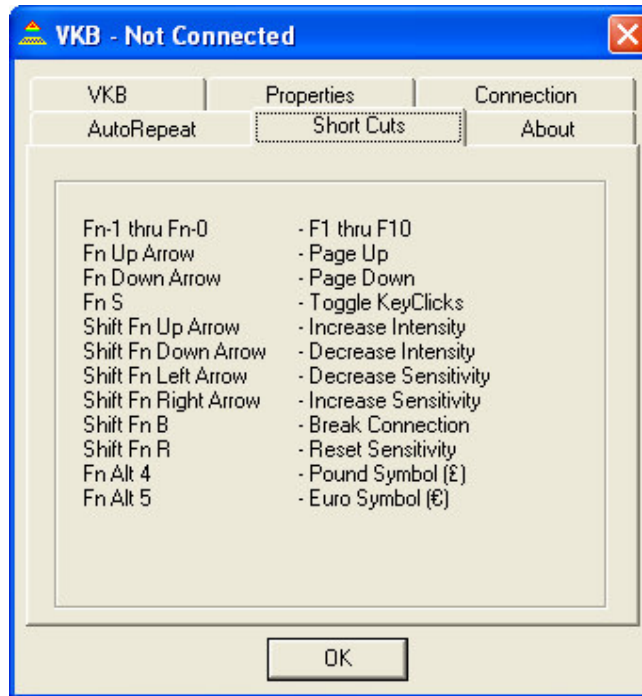
### Repeat Rate

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.

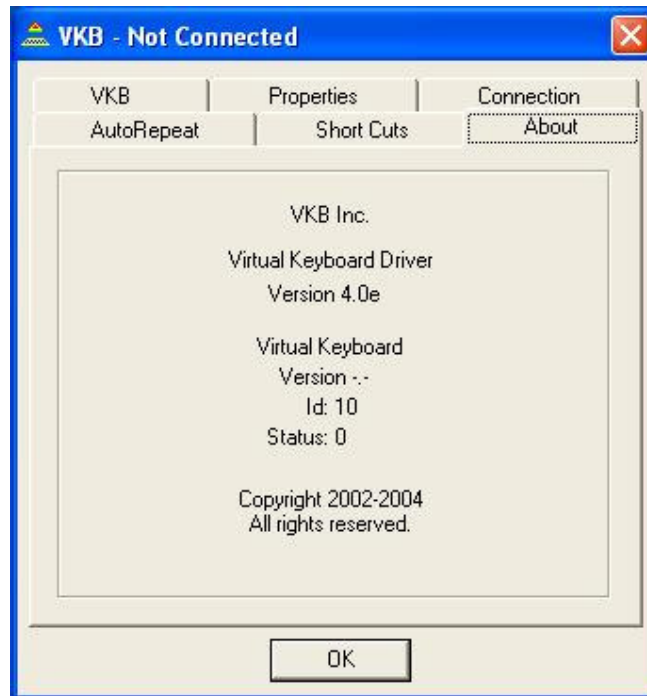
### ***Special Short-Cuts***



**Figure 9 – VKB Short-Cuts Page**

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

## About Page






**Figure 10 – VKB 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***

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	<ul style="list-style-type: none"> <li>- Check that the Virtual Keyboard is switched on.</li> <li>- Check the Bluetooth pairing procedures is performed correctly.</li> <li>- Check that Bluetooth has been selected in the Connections Page.</li> <li>- Ensure the Bluetooth connection is not being used by another application.</li> </ul>
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.

**Table 2 – Virtual Keyboard Status Icon Troubleshooting.**

## **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***

- 1) 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.
- 2) After about 2 seconds, the keyboard will emit a short “beep” and the LED will flash blue.
- 3) Pick up the keyboard and wait for it to turn off,
- 4) Place the Virtual Keyboard back on the flat surface and turn it on.
- 5) 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 computer doesn't accept the authentication of my keyboard while pairing	Device is not entering matched passkey to request authentication check	Re-start pair device to re-enter the matched passkey.
My computer doesn't emit typewriter sounds when pressing a key	Sound affects, on your PC, have not been enabled.	Enable Sound affects on the PC, device driver.
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
After first connection keyboard does not re-connect.	Your PC is not setup to accept incoming connections.	
"Bluetooth" does not appear as option in Connections list	Your Windows PC does not have Bluetooth or it has not been activated.	Install or turn on Bluetooth on your PC

## 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, PocketPC2003, Smartphone, Symbian
Mechanical & Environmental	Dimensions	Approximately 35 x 92 x 25 mm
	Weight	~90 gram
	Temperature - operation	10 – 35 C <sup>o</sup>
	Temperature - storage	-10 – 75 C <sup>o</sup>
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

## Special Combination Keys

Short Cuts	Windows	Note
Fn 1 through Fn 0	F1 through F10	
Fn Up Arrow	Page Up	
Fn Down Arrow	Page Down	
Fn Left Arrow	Left Mouse key (Mouse-enabled keyboard only)	
Fn Right Arrow	Right Mouse key (Mouse-enabled keyboard only)	
Fn M	Start Menu	
Fn S	Toggle Key Clicks	
⇧ Fn B	<Break Pairing>	
⇧ Fn R	<Reset Sensitivity>	
⇧ Fn Up Arrow	Increase Projection Intensity	
⇧ Fn Down Arrow	Decrease projection intensity	
⇧ Fn Right Arrow	Increase sensitivity	
⇧Fn Left Arrow	Decrease sensitivity	
Fn Alt 4	Pound Symbol (£)	
Fn Alt 5	Euro Symbol (€)	