

## Which Bar Code Scanner Interface is right for me?

### RS232, Keyboard, or USB.

When you purchase a bar code scanner, the most important decision that you will need to make is how to interface the bar code scanner to your computer.

Modern bar code scanners are normally available with one of three "output options" - either "Keyboard Wedge" output, RS232 serial output, or USB output. The following is a description of each of the three output options and how they work and the differences between them. Which option you choose will depend mostly on the software that you will be scanning the bar codes into and how you want everything to work as well as the types of ports available on your PC.

#### Keyboard Wedge Output

The "Keyboard Wedge" output option is the most common option. To interface a keyboard wedge bar code scanner to a PC, you would disconnect the keyboard from the keyboard port on the PC, plug the bar code scanner directly into the keyboard port and then connect your keyboard to a small "jumper cable" on the end of the bar code scanner cable (so that you do not lose the functionality of your keyboard). In other words, you are connecting the bar code scanner in the line between your keyboard and you PC. (One benefit of this is that the bar code scanner gets its power from the keyboard port so you do not need to connect any type of power supply to the scanner.)

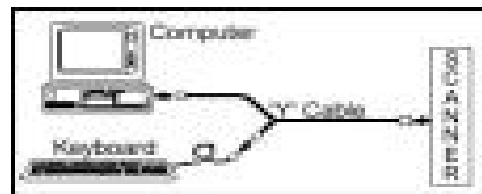
When you scan a bar code with a keyboard wedge scanner, the data that is encoded in the bar code goes into the PC through the keyboard port so that it appears to whatever software is running in the PC as if it were being typed in on the keyboard. (i.e. The bar code scanner behaves exactly like a second keyboard connected to the PC.)

With a keyboard wedge scanner, you do not need any additional software. You simply plug the scanner in and start scanning bar codes. The keyboard wedge interface is extremely simple and in most situations, you do not need to make any changes to the software that you will be scanning the bar code data into.

The main advantage of the keyboard wedge interface is that it works just like a keyboard. You put the cursor where you want the bar code data to go and then scan the bar code and the data pops in just as if you typed it on the keyboard. The disadvantage of the keyboard wedge interface is that it works just like a keyboard. If the cursor is not in the correct input field in the correct application program, then, when you scan a bar code, the data still gets entered into the PC as if it is being typed in on the keyboard. If the cursor is not in the right place or if the application that you want the bar code data to go into does not have the input focus, the data goes to the wrong place or possibly the wrong application program. Also, if you need to modify the data in any way before it goes into the application program running in the PC, you cannot do this. For example, suppose that you need to parse the bar code data so that separate parts of the data goes to different input fields or if you want to add a date or time stamp to the bar code data, it is not possible with a keyboard wedge scanner.



KEYBOARD PORT



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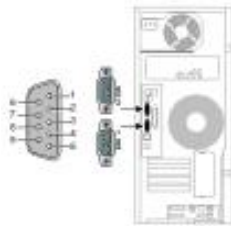
## RS232 (serial) Output

The RS232 output option means that you would connect the bar code scanner directly to an available RS232 serial port on the back of your PC. (RS232 output scanners also normally require an AC adapter to supply power to the scanner because the RS232 port cannot supply enough power to run a bar code scanner.)

With a RS232 output scanner, you would also need to either develop your application software to open and read in data from the RS232 serial port directly or use a software interface like the TALtech WinWedge software products. (<http://www.taltech.com/products/winwedge.html>) The main advantage of the RS232 output option is that you can develop your application so that it does not matter where the cursor is. When you scan a bar code, the data always goes to the correct place in your application program because the data from the scanner is going directly into the application program and is not going through the keyboard port. The RS232 interface requires a little more work up front because you either need to develop your software to work directly with the RS232 port (or configure the WinWedge software to act as the interface between the RS232 port and your application software) however the advantage to this approach is that you end up with a much more robust application that does not rely on the user making sure that the cursor is in the correct place in your application program before scanning a bar code. If you need to create a bar code application that is completely "idiot proof", then the RS232 interface option is by far the best choice.

The RS232 output option also makes it possible to manipulate the data that you receive from the bar code scanner before writing the data to the application program where you want the data to go. For example, if you want to parse the bar code data or add a date or time stamp to it, the RS232 serial output option would allow you to do this.

One issue that you may run into is that some newer desktop PCs and almost all new laptop computers do not come with any RS232 serial ports. The problem is easily solved by purchasing an "Add-on" RS232 serial adapter for the PC. There are even add-on RS232 serial adapters available that connect to a USB port on a PC. A single port add-on serial adapter that connects to a USB port should cost no more than \$30 and you can find them at any computer or office supply store.



Can Be 9 Pin or 25 Pin Connector



## USB Output

Bar code scanners that have a USB output can work one of two ways.

The first is that they can work exactly like a Keyboard Wedge scanner and the second is that they can work exactly like a RS232 serial output scanner.

When you purchase a bar code scanner that has a USB output, you normally will also need to specify which interface you want - either "USB Keyboard Wedge" (HID, Human Interface Device) or "USB RS232 serial port" (Virtual Communication Port). (Some bar code scanners are only available with the USB Keyboard Wedge option).

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### **USB Keyboard Wedge Scanners (HID, Human Interface Device)**

A USB Keyboard Wedge bar code scanner works exactly like a "Keyboard Wedge" bar code scanner except that instead of connecting the bar code scanner to the keyboard port on the PC, you plug it into a USB port. When you do this, the bar code scanner is recognized by the PC as a second keyboard device and when you scan a bar code, all bar code data goes into the PC just as if it were being typed in on a keyboard. Just like a standard keyboard wedge scanner, no additional software is needed. Windows will automatically recognize the scanner and treat it as if it were a second keyboard connected to your PC.

Since the USB Keyboard Wedge option works exactly the same as a standard Keyboard Wedge bar code scanner, there is really little difference between the two other than the port that you plug the scanner into. USB scanners all get their power from the USB port so you do not need an additional power supply. The only real advantage to a USB Keyboard Wedge scanner over a Standard Keyboard Wedge scanner is when you need to connect the scanner to a laptop computer that does not have a keyboard port.



### **USB RS232 Serial Scanners**

A scanner that has a USB RS232 serial interface will come with a special "Driver" program that you will need to install in the PC that you connect the scanner to. The purpose of the driver is to create a "Virtual RS232 serial port" that works exactly like a physical RS232 port.

After you install the driver that comes with the scanner and connect the scanner to a USB port on your PC, Windows will think that it has a new RS232 serial port and any serial communications software (including WinWedge) will be able to open this "Virtual RS232 serial port" just as if it were a standard RS232 serial port built into the motherboard of the PC.

In other words, the scanner works exactly like a RS232 serial output scanner except that it connects to the PC through the USB port. Everything that was said above in the paragraph about RS232 serial output scanners applies to a USB RS232 serial scanner. The only difference between the two is that the USB RS232 serial scanner plugs into a USB port on the PC instead of into a RS232 serial port. This means that your PC does not need to have any RS232 serial ports installed in it .



A power supply may be required in some instances.

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