USING TSI® SOFTWARE ON COMPUTERS THAT DO NOT HAVE AN RS-232 SERIAL PORT

Many TSI instruments utilize an RS-232 serial communication port to communicate with a computer. This method has worked well over the years because until recently, all personal computers had an RS-232 serial port built in as a standard feature. However, now we are finding that more and more computers are being manufactured "legacy free," which means they do not have a built-in RS-232 serial port for TSI instruments to use. This is especially true with laptop (notebook) computers. Instead, these computers have USB (Universal Serial Bus) ports which are a new improved type of serial port that is NOT compatible with RS-232, and therefore cannot be used to connect directly with most TSI instruments.

The solution is to purchase a "USB to Serial Converter" typically available for less than $75. These converters are external devices that connect in-line between the computer USB port and the TSI instrument's RS-232 serial port. They work by creating a "virtual RS-232 serial port" that looks just like a hardware port to most software applications. A software "driver" that comes with the converter must be installed on your computer before the converter will work. *Note: Make sure the drivers are Windows® XP and Windows® 7 compatible.*

We recommend selecting a converter from a reputable company that will provide technical support if necessary. Also, be aware that some converters are designed to work with a specific device and may not work with anything else. For example, the PalmConnect® USB Kit sold by Palm, Inc. for use with their popular line of PDA's will not function with other devices or TSI software.

The following is a list of USB-to-Serial converters that are known to work with TSI instruments and software. Most converters will probably work, so don't be too concerned if you have to buy a model that is not on this list.

Manufacturer	Model
Belkin	F5U103
Belkin	F5U109
Hawking Technology	HUC232S
Radio Shack	26-183
VS COM	USB-COM (TSI P/N 1102138)

Note: *Windows® XP and Windows 7 drivers available.*

Troubleshooting Tips for using USB to Serial Converters with TSI Instruments

- If your TSI software does not automatically locate your TSI instrument while using a converter, go to the TSI software's communications setup screen and try to establish communications. Try the auto-find option if available and/or test each port individually. **It may be necessary to do this each time the instrument and software are used together.**

- Make sure that you are following the instructions that came with the TSI instrument/software and that you are using the proper TSI cable between the instrument and converter. Most TSI computer cables are labeled "computer" on the computer end. If your cable is labeled "printer", it is NOT going to work.

- TSI computer cables can have either a 25-pin or 9-pin connector. Likewise, USB to serial converters can be either 25-pin or 9-pin. Inexpensive adapters are available from local computer stores or TSI to accommodate a mismatch. To connect a 25-pin TSI cable to a 9-pin USB converter use TSI part number 1302690. To connect a 9-pin TSI cable to a 25-pin USB converter use TSI part number 962003.

- Follow all instructions that came with the USB to serial converter including installation of the software driver that came with the converter. If necessary, you should be able to alter the converter's virtual port assignment. To do so, plug the converter into a USB port and then double-click the System icon in the Windows® Control Panel. Select the Device Manager tab and look under Ports. Highlight the port created by the USB converter and click Properties. Many software programs will not work if the port assignment is higher than COM4.