

# Technical User Guide

|                                                                                                                                                                                                                                                                                |                                                        |                                                                                                                                                                        |                                                   |                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------------|
| <div>Date</div> <div>18 May 2010</div> <div><input checked="" type="checkbox"/> original</div> <div><input type="checkbox"/> revised</div>                                                                                                                                     | <div>Software Version/Release</div>                    | <div>Warranty</div> <div><input type="checkbox"/> Parts</div> <div><input type="checkbox"/> Labor</div> <div><input checked="" type="checkbox"/> Normal Warranty</div> | <div>Pages</div> <div>10</div>                    | <div>Author</div> <div>Bart Bizon</div>      |
| <div>Document No.:</div>                                                                                                                                                                                                                                                       | UG10051801N                                            |                                                                                                                                                                        |                                                   |                                              |
| <div>Subject:</div>                                                                                                                                                                                                                                                            | USB-to-Serial Converter Installation                   |                                                                                                                                                                        |                                                   |                                              |
| <div>Time Required:</div>                                                                                                                                                                                                                                                      | <div><input checked="" type="checkbox"/>15 min</div>   | <div><input type="checkbox"/>30 min</div>                                                                                                                              | <div><input type="checkbox"/>45 min</div>         | <div><input type="checkbox"/>1 hr+</div>     |
| <div>Distribute To:</div>                                                                                                                                                                                                                                                      | <div><input checked="" type="checkbox"/>Internal</div> | <div><input checked="" type="checkbox"/>Dealer</div>                                                                                                                   | <div><input checked="" type="checkbox"/>ISO</div> | <div><input type="checkbox"/>Installer</div> |
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## DESCRIPTION OF ISSUE

The presently-available laptops, which are often used by the service technicians do not come with a natively installed RS-232 serial port.

At the same time the majority of our LED consoles for both the treadmill and the non-treadmill utilize the RS-232 serial port for the purpose of software updates (this is the same port that is used for CSAFE protocol communication).

Also, in case of some console designs special diagnostic messages are sent out to the serial port, which can be displayed on laptop's terminal window. Such diagnostic messages may help the technician in fault troubleshooting.

Additionally, engineering tools may evolve and allow for getting of the statistical information of the treadmill using the serial port.

Not having the serial port on the laptop calls for a solution that will emulate one.

A USB-to-serial converter is a device that bridges the above described laptop-to-console functionality gap.

Unfortunately not all USB-to-serial converters work well with the Windows XP operating system.

Some of the devices would work reasonably well, some would work 50% of the time, others would not work at all, and in extreme cases some would cause the Windows system to crash.

Finding a USB-to-serial converter that works is a problem in itself.

Life Fitness Field Engineering did substantial research in this arena and came up with a solution from a specific manufacturer that answers the need of a stable, good quality, emulated RS-232 serial communication via the USB port.

Note:

**Read all of the instructions first before proceeding with the installation.**

### **IMPLEMENTATION OF THE SOLUTION**

The Field Engineering-recommended USB-to-serial converter can be purchased from Life Fitness. The part number is 0017-00021-3153.

The converter is provided without any device drivers CD. All of the device drivers will be installed automatically once the converter is plugged in to any properly functioning USB port of the target laptop.

Please execute the below steps in order to make the device work with your system.

- a. Verify that the device is mechanically sound: no readily apparent damage to the USB nor 9-pin connector.

- b. Make sure that the operating system is updated properly.

Note:

This solution was tested with Microsoft Windows XP professional, Version 2002, Service Pack 3.

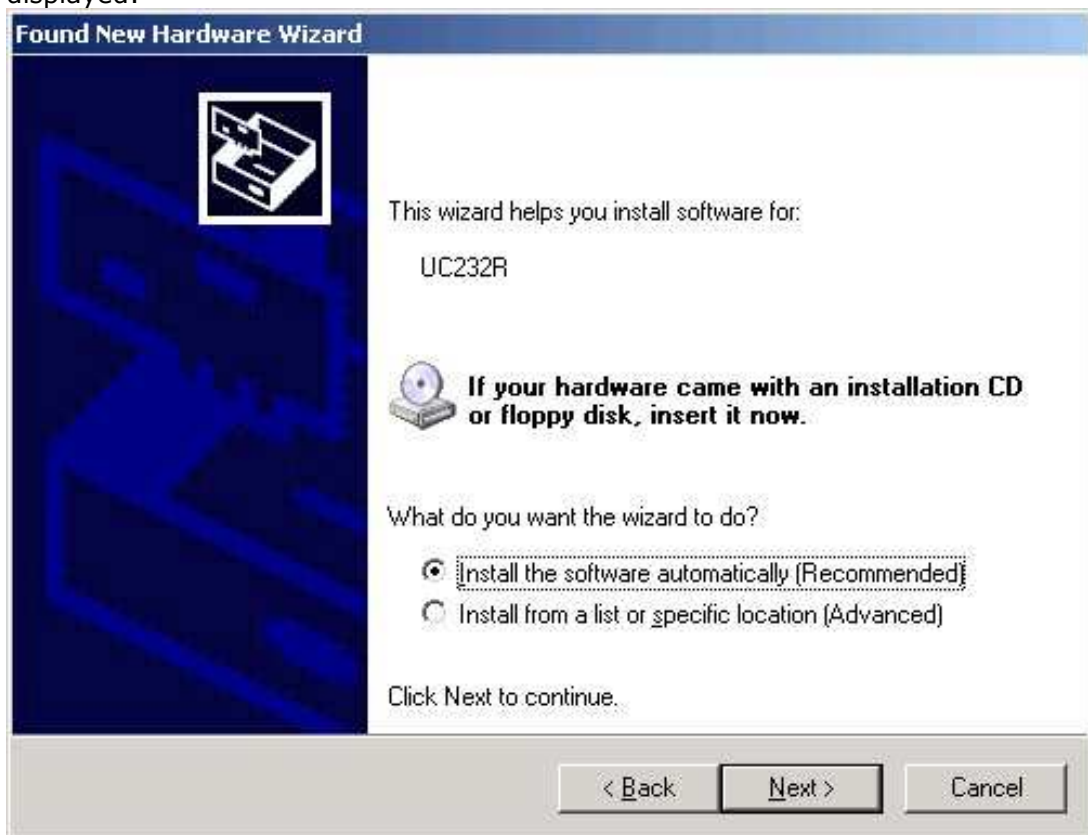
- c. Plug in the device into a functioning USB port.
- d. Follow all of the instructions that come up on your computer – those will be described below, as the installation process is activated twice, not once.

### **DESCRIPTION OF THE DEVICE DRIVERS INSTALLATION PROCEDURE**

1. After the USB-to-serial converter is connected to a USB port, the New Hardware Wizard will be displayed



2. From the three radio button type choices shown above select "Yes, this time only" and click the "Next >" button. Clicking "Next >" will cause the following screen to be displayed:



Select the "Install the software automatically (Recommended)" radio button. Click on the "Next >" button.

3. Clicking on the "Next >" button shown above causes the following window to pop up:



4. After a few seconds the drivers will be installed and the following window will be displayed:



Click on the "Finish" button.

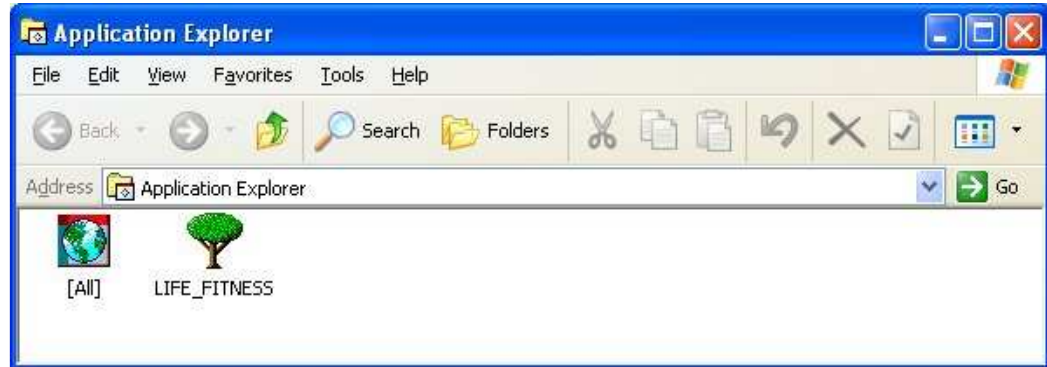
5. After clicking on the "Finish" button shown above expect the steps from 1 to 4 to be repeated. Each time proceed as described before. According to the manufacturer of the USB-to-serial converter this repetition of steps was intentional.
6. Your converter is ready to use when your system reports it as such. An information bubble shown below will be displayed in the vicinity of your system clock:



7. If the above steps failed, make sure that your firewall and proxy settings allow for the Internet connection of the Hardware Wizard.

The following steps apply to **Life Fitness employees** only who use Life Fitness' **wired** LAN and to be performed only in case of not being able to successfully install the device drivers using the Hardware Wizard:

- a. On your desktop find the Application Explorer icon and double-click on it. This will result in the window shown below.



- b. Double-click on the [All] icon (depicted above)
- c. The content of the next window varies based on the applications available to you as configured by the Information Technologies (IT) department. Consequently the entire window is not shown. However you must find and double-click on the icon depicted below:



- d. As a result of double-clicking on the above icon a box will be flashed for a brief instance. There is no other confirmation of your action. The box is not displayed long enough to see the message was.
- e. Try to install the drivers again. If the Hardware Wizard fails again, contact IT explaining that the proxy settings do not allow you to pull the latest version of the device drivers.

### **VERIFICATION OF THE SOLUTION**

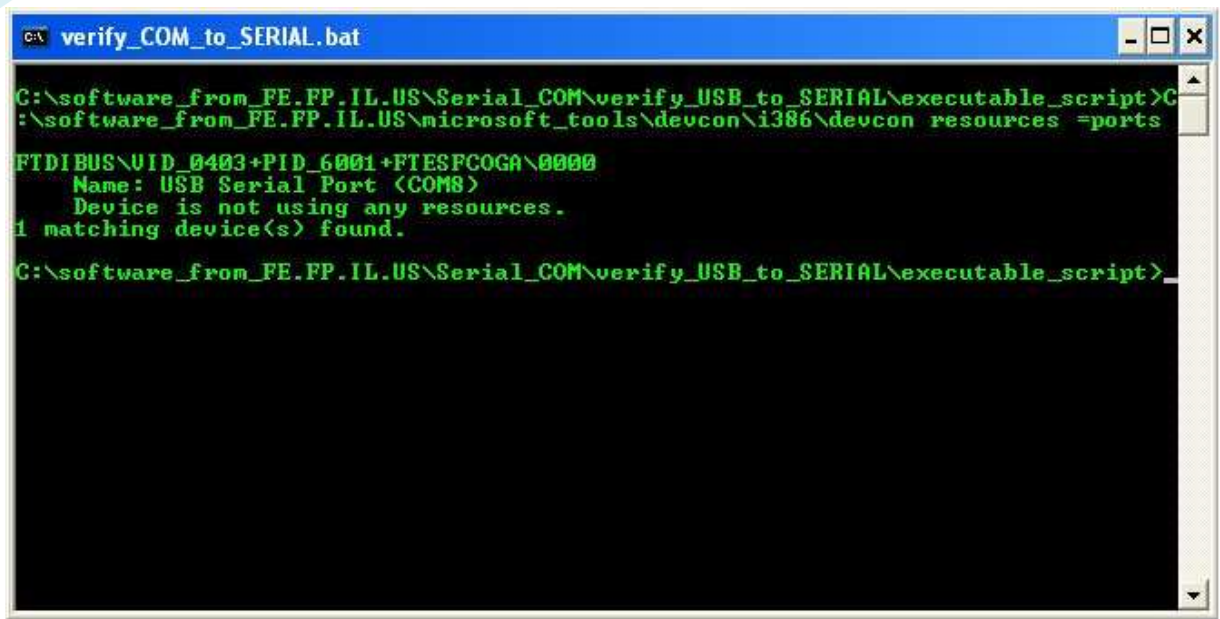
In order to verify that your computer had properly installed the converter execute the following steps or **execute step #7 (skipping steps 1-6)** if you had executed steps 1-6 in the past and did not modify settings:

1. Log in to [www.lftechsupport.com](http://www.lftechsupport.com)
2. Click on: Software Releases (tab) >> Z TEST TOOLS (link)
3. Save Microsoft\_tools.exe to a location of your choice
4. Click on: USB-to-serial\_Converter (link)
5. Save verify\_USB\_to\_SERIAL.exe to a location of your choice
6. Execute both files listed in #3 and #5 above by double-clicking on them – in each case simply press the Unzip button and close the zip utility.
7. Enter  
C:\software\_from\_FE.FP.IL.US\Serial\_COM\verify\_USB\_to\_SERIAL\executable\_script  
directory
8. Copy verify\_COM\_to\_SERIAL.bat to the desktop or to a **convenient** location of your choice
9. Double-click on the verify\_COM\_to\_SERIAL.bat file  
If you have a USB-to-serial properly installed, you will see the following message:  
**FTDIBUS\VID\_0403+PID\_6001+FTESFCOGA\0000**  
**Name: USB Serial Port (COM8)**  
**Device is not using any resources.**  
**1 matching device(s) found.**

In order for the test to be considered a success the following must be TRUE:

1. The first line of the report must start with **FTDIBUS\**
2. The second line must state: **Name: USB Serial Port (COMx)**, where x is any non-zero and non-negative number.

This is what this message looks like when displayed in the command window:



```
C:\verify_COM_to_SERIAL.bat

C:\software_from_FE.FP.IL.US\Serial_COM\verify_USB_to_SERIAL\executable_script>C:\software_from_FE.FP.IL.US\microsoft_tools\devcon\i386\devcon resources =ports

FTDIBUS\VID_0403+PID_6001+FTESPCOGA\0000
    Name: USB Serial Port (COM8)
    Device is not using any resources.
1 matching device(s) found.

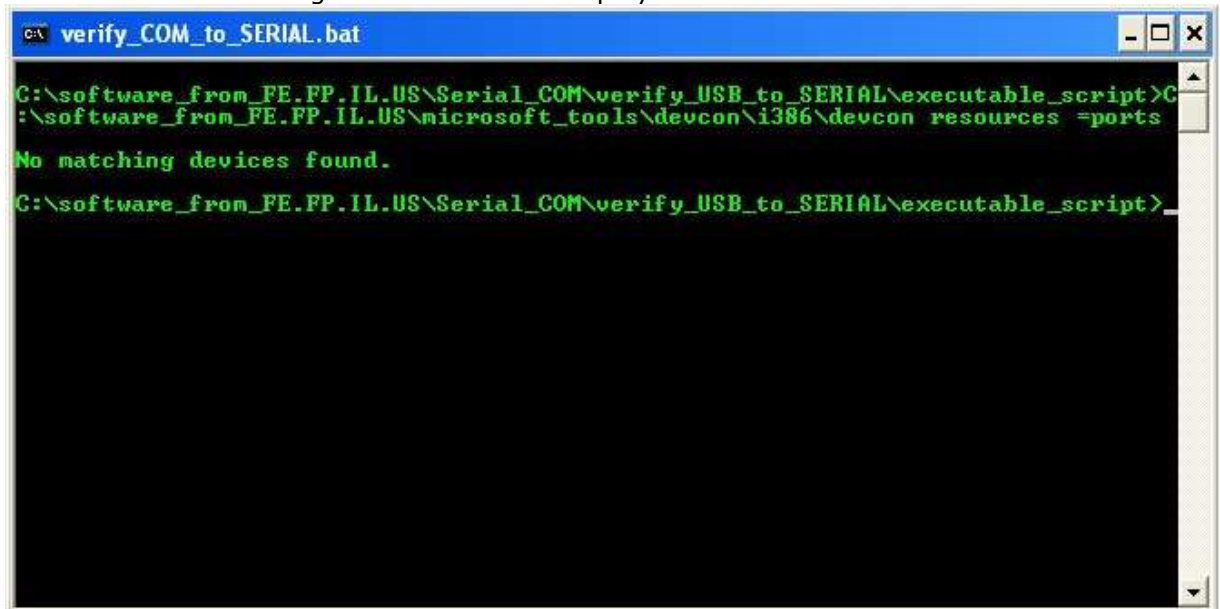
C:\software_from_FE.FP.IL.US\Serial_COM\verify_USB_to_SERIAL\executable_script>
```



In case of a failed detection of the USB to serial converter the following will be displayed:

**No matching devices found.**

This is what this message looks like when displayed in the command window:



```
C:\software_from_FE.FP.IL.US\Serial_COM\verify_USB_to_SERIAL\executable_script>C
:\software_from_FE.FP.IL.US\microsoft_tools\devcon\i386\devcon resources =ports
No matching devices found.
C:\software_from_FE.FP.IL.US\Serial_COM\verify_USB_to_SERIAL\executable_script>
```

### **CHANGING THE SERIAL PORT NUMBER**

If the assigned port number is very high there is a chance that some of the Life Fitness tools may not work properly.

To assign a different port number to the converter proceed as follows:

1. Make sure that your device is functional when connected to the USB port by utilizing the **verify\_COM\_to\_SERIAL.bat** script (see #7 of the VERIFICATION OF THE SOLUTION section above).
2. Proceed with the remaining points if step #1 above was successful
3. Click on Start
4. Select Run
5. In the "Open:" box type "control sysdm.cpl" – this will bring up the system properties
6. Click on the Hardware tab
7. Click on "Device Manager" button
8. Find "Ports (Com & LPT)" and double click on it – this should produce a "USB Serial Port (COMx)" as the only choice or one of the choices
9. Right-click on the "USB Serial Port (COMx)" and select "Properties"
10. In the Properties window, click on the "Port Settings" tab
11. Click on the advanced button – this brings up the "Advanced Settings" window
12. Select a different port number (for example 2), even if it was marked as being used

13. Click the "OK" button on the windows that you had opened since launching the System Properties window
14. Click the "OK" button of the system properties
15. Re-run the **verify\_COM\_to\_SERIAL.bat** script (see #7 of the VERIFICATION OF THE SOLUTION section above) verify that the Name: line reflects the COMx setting that you just did in the steps 3-14 above.

#### **SUMMARY**

1. Every time you need to verify if your USB-to-serial converter works properly, double-click on the **verify\_COM\_to\_SERIAL.bat** that you had placed on your desktop or in a convenient location of your own.
2. The process of installing drivers is done once.
3. **Installing your co-workers USB-to-serial converter will cause your system to assign a new port number to the device being currently used.**