

Driver Installation and Hyperterminal Operation of iLoad Digital USB Sensors

Driver Installation

Insert the iLoad Digital USB Driver CD OR the LoadVUE or LoadVUE Lite CD into your computer's drive. If you have downloaded the driver files from our web site onto a location in your hard disk, substitute that location instead of the CD drive in the instructions below. Drivers for Windows XP and Windows Vista are available here.

If you have purchased LoadVUE or LoadVUE Lite software with your iLoad Digital USB sensor, please ensure that you install the drivers as described in this document before you install the LoadVUE software. Also note that the screen shots in this document are for Windows XP, but the process is the same with Windows Vista although the appearance of screens is different.

Note: The iLoad series sensors are intended for use with an NRTL approved device such as a computer or regulated power supply.

Plug in your iLoad Digital USB sensor into an available USB port on your Windows computer. The New Hardware Wizard window will come up in a few seconds.

Select the option for "No, not this time" and click **Next**.



On the next screen select the option for "Install the software automatically" option and click **Next**. Your computer should scan the CD to find appropriate drivers for the sensor.



On the next dialog box click **Continue Anyway**.



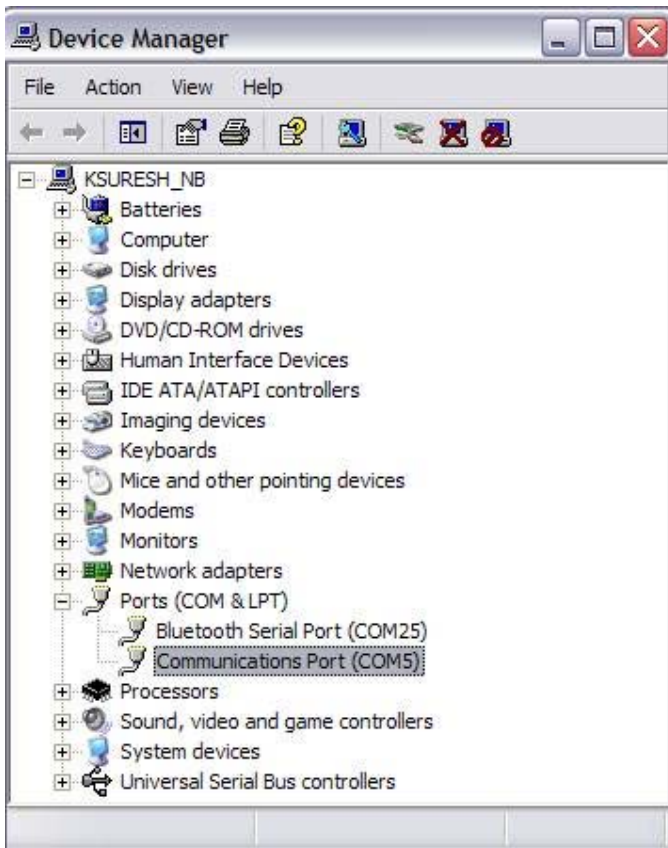
Windows installs the driver for your iLoad Digital USB sensor. Click **Finish**.



The sensor will appear as a COM port to Windows whenever you plug it in to the same USB port on your computer. If you use a different physical USB port, you may need to go through this procedure again to associate a COM port with that USB port. However, you will usually not have to insert the CD again.

To verify the COM port number that has been assigned to the sensor, open the Hardware Device Manager. You can do so by going to the Control Panel in Windows and double-clicking on **System**. On the System dialog box click on the Hardware tab and select the **Device Manager** button.

When your iLoad Digital USB sensors is connected and correctly installed, you should see a COM port assigned to it as shown highlighted in the following screen shot (next page).



If you have more COM ports than you have sensors connected, you can double-click on the entry for a COM port. The ports associated with iLoad Digital USB sensors will indicate that they have a Loadstar Sensors driver as shown below.



You are now ready to start using your iLoad Digital USB sensor.

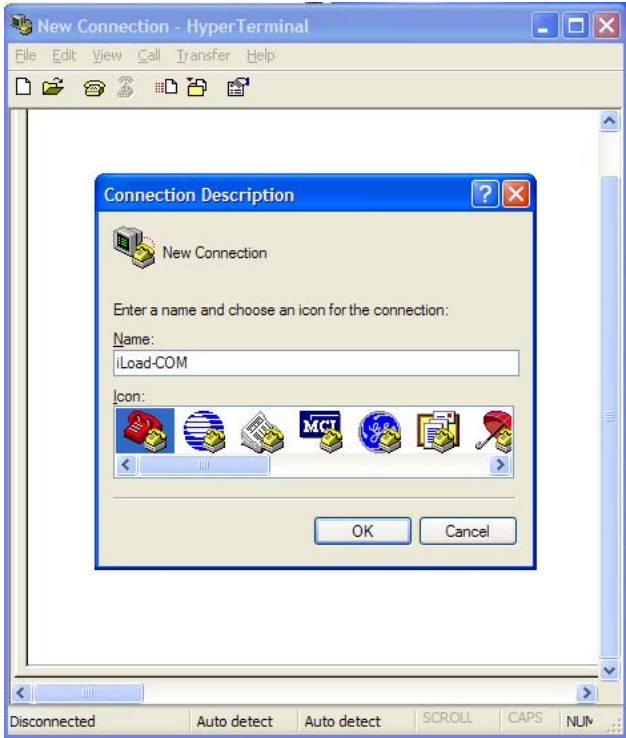
Hyperterminal Operation

In Windows XP, launch the Hyperterminal program.

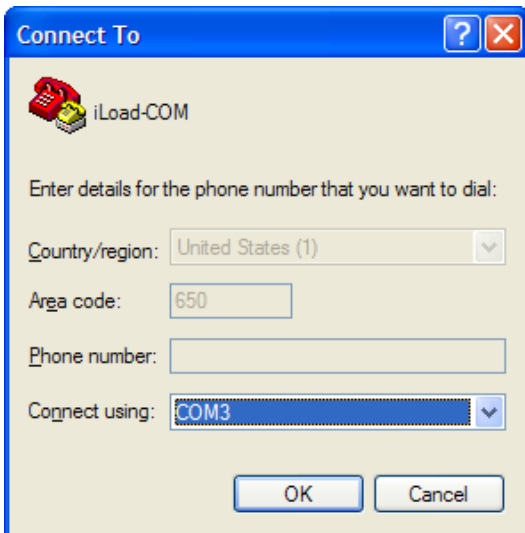
Start...All Programs...Accessories...Communications...Hyperterminal

Note: Windows Vista does not include a terminal client. However, free terminal client software like Teraterm is available.

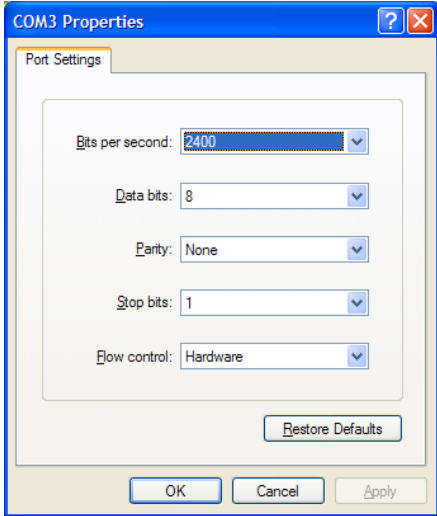
Set up a new connection to connect to the iLoad Digital USB sensor's COM port.



In the "Connect To" window, select the appropriate COM port.

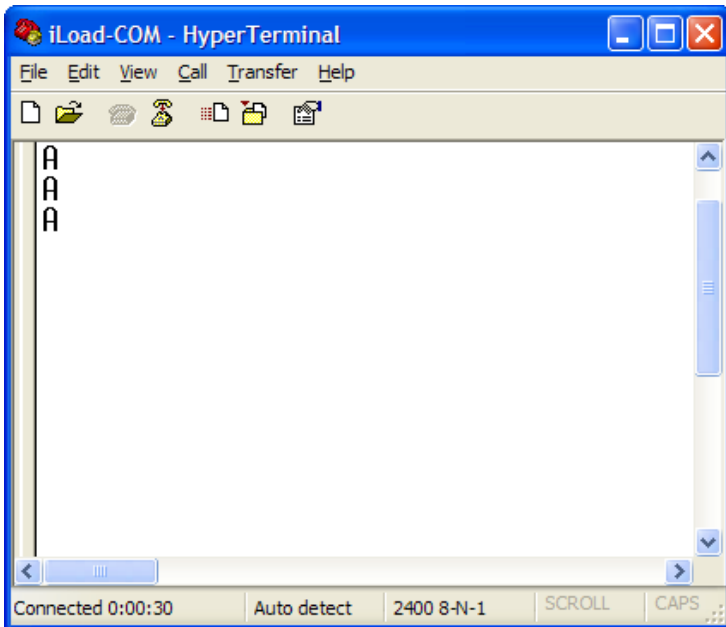


In the "Port Settings" dialog box, accept the defaults. The baud rate etc is not applicable to the iLoad USB sensors.

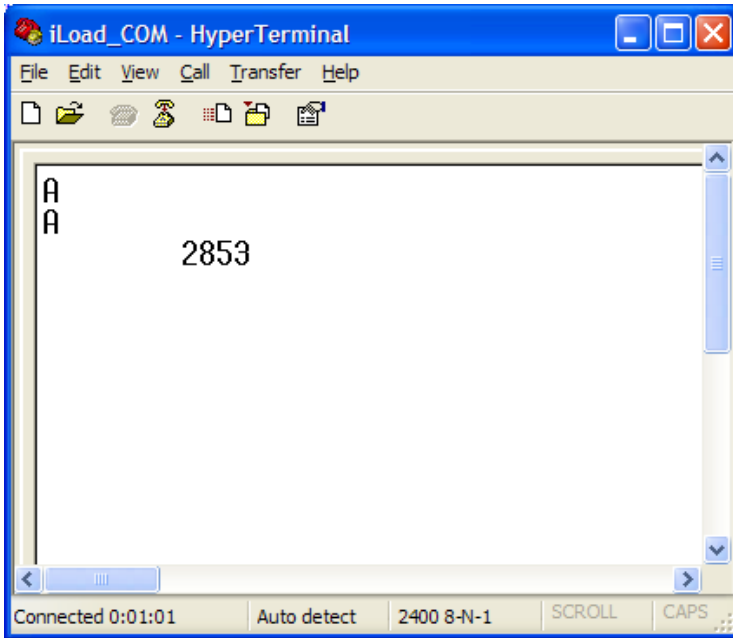


Note: Since this is a virtual COM port via a physical USB port and not a real COM port, the settings for baud rate, data bits, parity, stop bits and flow control that must usually be set for a physical COM port are not required. Any setting will do.

Click **OK** to accept the settings. Then click "Enter" a few times. You should see the sensor respond with an "A".

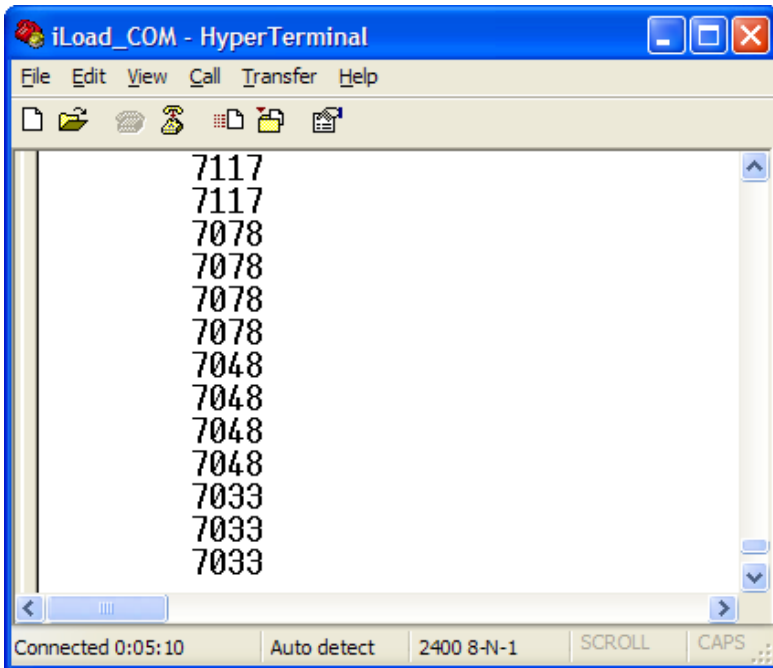


Type "00W1" and hit <Enter>. The sensor will respond with the current load on the sensor in millipounds. In the figure below the load is 2.853 pounds.



Type "CT0<Enter>" to tare the sensor. This will zero the load (all further readings will subtract the load sensed at this point.)

Type "00W0<Enter>" to output the load continuously. Hitting <Enter> at any time will stop outputting the readings.



Basic command set

The iLoad Digital USB sensor can be used through LoadVUE or LoadVUE Lite software from Loadstar Sensors. It can also be used directly as a COM port using any terminal emulation software such as HyperTerminal that is included with Windows XP. To set up Hyperterminal or other terminal emulation program to communicate with the sensor, select the appropriate COM port in the program and connect. Once connected, a few simple commands are all that are needed to operate the sensor:

<Enter>	This just pings the port and the sensor responds with “A” to indicate that it is set up and ready.
CT0	This sets the tare (or zero) for the sensor. If you plan to zero out a preload, please use this command.
O0W1 O0W0	The O0W1 command outputs the weight or force reading once. O0W0 outputs a continuous stream of weight or force readings. Simply send a <carriage Enter> to stop streaming. The output is in 1/1000 of a pound (millipound). E.g., if the reading returned is 2345, the sensor reading is equivalent to 2.345 lb.
O0S2	Outputs the temperature within the sensor in deg. C. Note that this is the temperature within the sensor and is usually a few degrees higher than ambient.
SLC	This command outputs a floating point number that indicates the load capacity of the sensor in lb.
SS1	This command outputs the last three digits of the serial number of the sensor.
SS0	This command outputs the model number of the sensor.

Writing Your Own Software to Communicate with iLoad Digital USB Sensors

Since the iLoad Digital USB Sensors present themselves to Windows as COM ports, it is very easy to write your own program to read the sensor loads. Simply open the COM port from your application and send the string `O0W1<CR>`. Then read the returned string back in millipounds. We recommend the following steps:

1. Open the port at 9600 (baud rate is not important), N, 8, 1.
2. Write a `<CR>` to the port.
3. Wait for a few milliseconds (say, 100 to 1000, this depends on your hardware, try a longer wait first then shorten it to see what works. (An alternative is to wait until there is a required number of characters in the input buffer, in this way the wait time is reduced to a minimum).
4. Read the input buffer and discard till there are no characters to read. (You can check if you get an 'A' back)
5. Write `O0W1<CR>` to the port,
6. Wait again for a few milliseconds.
7. Read the input buffer and process. This will contain the weight.
8. Repeat Steps 5 to 7 as needed.
9. Discard any bytes left in the input buffer before you close the port.
10. Close the port.

If callbacks (or events) are available, it is preferable to use them instead of polling the sensor in step 7 above. This way Windows will inform the application that there is data to be read.

Examples for Labview and Matlab are available on our support pages.