



# Kestrel® Interface USB Cable

Communication Software Ver. 1.12

Thank you for purchasing the Kestrel Interface and Communication software. This system will upload the stored data from your Kestrel 4000 Pocket Weather Tracker or Kestrel 4100/4200 Pocket Air Flow Tracker to your PC. This permits long-term storage, in-depth analysis or detailed charting.

## 1) What's in the Box

- **Interface Cradle:** Kestrel snaps into the cradle and communicates optically.
- **USB / Adapter Cable:** Plugs into the interface and an available USB port on your PC. This cable includes an integrated Serial to USB adapter which requires separate drivers installed in step 3.
- **Digitus USB-RS232 Adapter CD-ROM:** Installs drivers required for the USB to Serial adapter cable provided. Must be installed first!
- **Kestrel Upload Application CD-ROM:** Installs Kestrel Communication Software that pulls the data from the Kestrel to a comma-delimited text file. The software's primary function is to upload stored data from a Kestrel Meter. The software is also able to perform some configuration functions.

## 2) What You'll Need

- PC with an available USB port.
- Windows 3.1 or higher.
- Kestrel 4000 or 4000NV Pocket Weather Tracker; Kestrel 4100 or 4200 Pocket Air Flow Tracker

## 3) Install the USB - Serial Adapter

- **BEFORE** plugging the adapter cable into your computer, load the blue-green Digitus USB-RS232 Adapter CD-ROM (with the "Install First" sticker) into your computer's drive. Browse to the CD-ROM in My Computer and open the "PC" folder.
- Double-click "PL-2303 Driver Installer.exe". Follow the on-screen prompts to install the drivers for the USB adapter cable.
- When the "InstallShield Wizard Complete" window appears, click "Finish".
- Now, plug the USB connector of the cable into your computer. On Plug and Play compatible versions of Windows, a "Found New Hardware" icon will appear, followed shortly by a message that your new hardware is installed and ready for use. (On older versions of Windows, you may need to complete the "Add New Hardware" process manually. Refer to the documentation for your operating system for more information.)
- Your adapter cable is now installed and ready to use with the Kestrel interface. **You will need to finish setting up the communication (COM) port in step 6.**

## 4) Set up the Interface

### Connect the Interface:

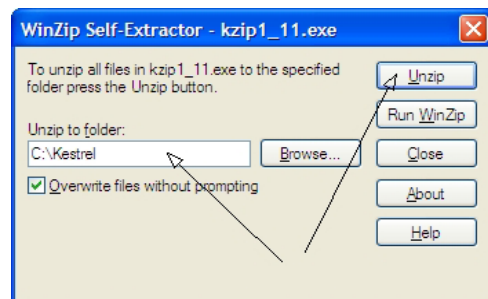
- Plug the free end of the USB adapter cable (end with the pins) into the connector on the interface.

### Load the Kestrel 4000:

- Place the Kestrel 4000 into the cavity of the interface with the battery door end of the Kestrel closest to the cable plug. The Kestrel should be facing up, so the display is visible. The lanyard will fit in a slot in the interface, and does not need to be removed for uploading.

## 5) Install the Kestrel Communication Software

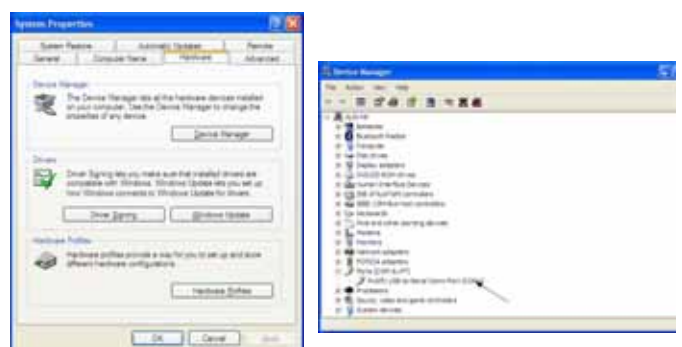
- Load the CD marked "Kestrel Upload Software" and "Stop! Install Adapter Software First" into your computer's drive. Browse to the CD-ROM in My Computer and double-click "Kzip1\_12.exe". This is a self-extracting zip file, which will extract the required files to your hard drive. Specify your desired installation location in the "Unzip to folder:" dialog box on the left of the unzip window before clicking "Unzip". **The recommended location is C:\Kestrel.**



- The Unzip utility will place these seven files in the specified directory. All seven of these files must be present in this directory for the software to run. Do not delete or rename any of these files.
  - Comdef.ini [defines the COM Port used]
  - Kstr11\_12.exe [the Kestrel Communication Software]
  - TB510.DLL - XNMBA420.DLL
  - XNMTE420.DLL - XNMBA458.DLL
  - XNMTE458.DLL
- The installation will also place a .pdf version of these instructions, interface\_USB\_112.pdf, in the installation directory for future reference.

## 6) Set the Communication Port:

- The USB-Serial adapter software installed in step 3 allows your computer's USB port to imitate an RS-232 Serial port as required by the Kestrel Interface. You must ensure that this software is using a COM Port number that can be accessed by the Kestrel Communication Software - COM 1, 2, 3 or 4.
- Open your Windows Device Manager. (Found under Control Panel / System / Hardware. Enter "Device Manger" under "Help" if you are unsure how to locate the Device Manager in your version of Windows.):



- Click the [+] next to "Ports" to view the adapter port. Double-click "Prolific USB-to-Serial Comm Port" to view its properties.
- Click the "Port Settings" tab, then the "Advanced..." button. On the COM Port Number dialog box at the bottom of the screen, select an unused COM Port between 1 and 4. COM 1 is the preferred port if available, as this is the default for the Kestrel software. Write the selected number down for use in the next step.



- The Kestrel Communication Software is set to communicate with COM 1 by default. If you selected a different COM Port in the previous step, you will need to change this setting. This setting is stored in a very small text file called "comdef.ini" found in the Kestrel directory created above. Using Windows Notepad or other text editor of your choice, open "comdef.ini". The single digit in this file is the number of the COM Port the software will use to communicate. Change this to the number of the com port your interface cable is actually plugged into OR, if you are using a Serial to USB adapter, the COM Port number created by the adapter software. Save and close the file.
- Close and restart the Kestrel Communication Software to ensure that it reads comdef.ini and uses the correct COM Port.

## 7) Upload Data

### Double-Check Communication Setup:

Before attempting to upload, double-check the following:

- The USB adapter cable is securely connected to the computer and interface;
- The adapter cable is set to use a COM Port between 1 & 4, and this COM Port setting is specified in comdef.ini;
- The Kestrel is properly mounted on the interface;
- The Kestrel is turned on.

### Launch the Kestrel Communication Software:

- Browse to the "Kestrel" directory created when you installed the software. Double click "Kstr11\_12.exe" to start the software. (If you wish, you may use the steps appropriate for your version of Windows to create a shortcut from this .exe file on your desktop for faster access to the program.) A splash screen will appear, with instructions to press any key to continue.

### Upload Data from the Kestrel:

- Select Upload Data Log from the Communicate menu.
- The software will attempt to communicate with the Kestrel. It may take approximately 4 seconds to establish a connection. \*\* If the connection was not successful, re-read the above instructions under "double-check communication setup." \*\*
- At the prompt, select a file name and location. The file will be saved in a comma separated values format (csv). The default name is formatted for the current date (yyyymmdd.csv). The default directory is called "data" and is automatically created under the "Kestrel" software directory.
- The data will be displayed on the screen as it is uploaded. The upload may take up to 2 minutes, depending on the amount of data.
- After the upload is complete, a text file is automatically created in order to store notes pertaining to the uploaded data. Select a file name and location. The file will be saved in a text format with a ".rem" extension. The default name is the same as the data file. The default directory is "data".
- You may write up to 99 lines of notes in the remarks file. Complete your remarks with a carriage return on a blank line to indicate the remarks are complete.
- The data will remain available on the screen for review. See Fig. A for a data screen example and explanation of the data column abbreviations.

## 8) Perform Other Program Functions

### Options on the "Communicate" Menu:

- **Clear Data Log:** Select "Clear Data Log" from the "Communicate" menu to clear all of the data **on the Kestrel**. You will not be able to restore this data once cleared!
- **Restore Units Defaults:** Select "Restore Units Defaults" to reset the units of measure on the Kestrel to the default metric or imperial factory settings.
- **Restore Pressure Cal:** Select "Restore Pressure Cal" from the "Communicate" menu to reset the pressure sensor calibration to the factory setting.

☞ Use this option **ONLY** if the pressure calibration setting on the Kestrel was incorrectly set through an inadvertent or incorrect calibration procedure.

- **Properties/Identification:** Select "Properties/Identification" from the "Communicate" menu to display detailed properties of the Kestrel for diagnostic purposes. This option is generally only used by the factory or under instruction from Kestrel technical support.

### Options on the "File" Menu:

- **Open:** Select "Open" from the "File" menu to open and view previously saved files. Browse the computer for the desired file and double-click to open. The data will be read in from the file and displayed on the screen.
- **View:** Select "View" from the "File" menu to display the data from the current file or upload if cleared by another program operation (such as printing or resetting).
- **Printer Setup:** Select "Printer Setup" from the "File" menu to configure the printer and associated options. **Be sure to set the Paper Orientation to Landscape for proper printing of the data table.**
- **Print:** Select "Print" from the "File" menu to print a report containing all the data points as displayed on the screen.
- **Exit:** Select "Exit" from the "File" menu to exit the program.

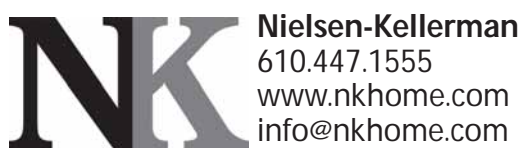
## 9) Chart, Graph or Analyze

To perform more in-depth data analysis and manipulation, or prepare charts or graphs, you may open the .csv files created by the Kestrel Communication Software in Microsoft Excel, Lotus 123, or other spreadsheet program.

**Fig. A) Sample Screen Shot of Data Upload - Column Heading Abbreviations**

| Formatted Date-Time | DT       | WS  | TP   | WC   | RH   | HI   | DP   | WB   | BP    | AL   | DA  |
|---------------------|----------|-----|------|------|------|------|------|------|-------|------|-----|
| YYYY-MM-DD HH:MM:SS | s        | mph | °F   | °F   | %    | °F   | °F   | °F   | inHg  | ft   | ft  |
| 2002-04-26-09:43:48 | 13329420 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:43:49 | 13329421 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:43:50 | 13329422 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:43:51 | 13329423 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:43:52 | 13329424 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:43:53 | 13329425 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:43:54 | 13329426 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:43:55 | 13329427 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:43:56 | 13329428 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:43:57 | 13329429 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:43:58 | 13329430 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:43:59 | 13329431 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:00 | 13329432 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:01 | 13329433 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:02 | 13329434 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:03 | 13329435 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:04 | 13329436 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:05 | 13329437 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:06 | 13329438 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:07 | 13329439 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:08 | 13329440 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:09 | 13329441 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:10 | 13329442 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:11 | 13329443 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:12 | 13329444 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:13 | 13329445 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:14 | 13329446 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:15 | 13329447 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:16 | 13329448 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:17 | 13329449 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:18 | 13329450 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:19 | 13329451 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:20 | 13329452 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:21 | 13329453 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:22 | 13329454 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:23 | 13329455 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:24 | 13329456 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:25 | 13329457 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:26 | 13329458 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:27 | 13329459 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:28 | 13329460 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:29 | 13329461 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:30 | 13329462 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:31 | 13329463 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:32 | 13329464 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |
| 2002-04-26-09:44:33 | 13329465 | 0.0 | 73.9 | 73.9 | 32.6 | 68.9 | 41.0 | 57.0 | 30.15 | -261 | 678 |

| Heading             | Description  |
|---------------------|--|
| Formatted Date-Time | Formatted Date-Time (YYY-MM-DD HH:MM:SS)                     |
| DT                  | Unformatted Date-Time (seconds since 01/01/2000 as 00:00:00) |
| WS                  | Wind Speed   |
| TP                  | Temperature  |
| WC                  | Wind Chill   |
| RH                  | Relative Humidity  |
| HI                  | Heat Index   |
| DP                  | Dewpoint   |
| WB                  | Wet Bulb Temperature   |
| BP                  | Barometric Pressure  |
| AL                  | Altitude   |
| DA                  | Density Altitude   |



Made in the USA - may include some non-US components.  
 © 2005. Kestrel, the Kestrel logo, NK, Nielsen-Kellerman and the NK logo are trademarks of the Nielsen-Kellerman Co.