

PicoCount 4500 Quick Start

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Introduction.

The VehicleCounts.com **PicoCount 4500** 4 channel vehicle counter is designed with the latest in technology to give 250Mbyte+ memory, high resolution timestamps, over 10 year battery life, and no-setup-required operation, the **PicoCount 4500** sets the standard for 4 channel air hose counters. The Picocount interfaces directly to your PC using **TrafficViewer Pro** software for data downloads, unit configurations, reports and data exports. The **TrafficViewer Pro** software is **free** and is available <u>here</u> or if you wish to use the "Beta" version, you can get it from <u>beta</u>.

This document is written with the assumption that you are familiar with automated traffic counters, their setup and usage. It also assumes you are familiar with the terminology used in the traffic counting industry.

We now lead you through a typical study using the **PicoCount 4500** counter and the **TrafficViewer Pro** software to familiarize you with both the hardware and the software.

When you receive your PicoCount check it closely for damage. You should have received the following items:

+ The PicoCount Counter.

+ A download cable.**

+ This Quick start document.

** If this is your first unit, you should also have ordered a download cable which will be needed to interface to your PC. VehicleCounts.com offers a USB download cable (Part# VC-DC-USB).

USB driver install.

If you are using the USB download cable, the first thing you will need to do is install drivers for it. The USB driver install program may be downloaded from our website at <u>www.vehiclecounts.com/downloads.html</u>.

To determine if you will need to install drivers, plug the download cable into your PC. You will see a Windows info screen pop up saying "New hardware found".

If you are lucky, Windows will recognize the USB download cable and automatically install/activate the drivers and you will see a Windows info screen pop up saying "Hardware installed and ready to use". If this is the case, you may proceed starting TrafficViewer Pro.

If Windows does not recognize the USB device or the appropriate drivers, the driver install wizard should pop up. Close the wizard. Then download and run the Driver Install program from our website. Once the installation is complete, the USB download cable should properly connect each time you plug it in.

Starting TrafficViewer Pro.

Make sure the USB download cable is connected **before** starting **TrafficViewer Pro** software. The TrafficViewer Pro software scans for all Windows® serial port connections (including USB) as it starts, if a new Windows® serial connection is made after the software is running, the software will not be aware of the serial connection.

Upon starting TrafficViewer Pro software, you should see the following window, the TrafficViewer Pro desktop:



Occasionally, you might see the screen below pop up first, if so, just click on "Close" when it has finished (discussed in detail in the **TrafficViewer Pro** manual).

💵 Checking for Traffic Viewer updates	
Current version: 1.4.0.5 Checking update server for latest version information Latest version: 1.4.0.5 Released: 05/06/2008 No new updates available. Done.	<
Close	

Connecting to the PicoCount 4500.

Connect your **PicoCount 4500** to your PC with the download cable. Then click on "Auto-Detect" in the Communications dialog box:



After a few seconds the communications dialog box should show the PicoCount connection status similar to below:

PicoCount 4500	V2.20	Connection	Dates/Times PC
s/n: 12081401		09/06/2012	
ID:		12:35	12:36
Start Date 08/24/2012	Memory L	Jsage	1%
Start Time 14:52	314 Bytes	of 256MB	

Once this screen appears, you need to clear the data in the counter by clicking on the "Clear Unit Data" button in the lower left of the **TrafficViewer Pro** screen.



The following dialog will pop-up:

Erase u	nit data?
⚠	If you reset the unit all data in the unit will be erased and cannot be retrieved! Please be sure you have downloaded the data from your unit before you reset.
	Are you sure you would like to reset the unit now?
	Yes No

Click on "Yes".

Clearing the unit data insures that any current data in the machine is discarded and most importantly that the date/time is synchronized with your PC. As a practice, you should always clear the counter's data before setting it out for counts. This insures that you only have one study (or session of data) and it keeps the PicoCount 4500's built-in clock "synchronized" with your PC.

You are now ready to set the **PicoCount 4500** out for counting. The PicoCount's have no power switches and are **ALWAYS** counting, though no memory gets used if there are no "hits" on the air switches.

Collecting some data.

For your first count study with this counter, we recommend doing a **test** study so that you become familiar with setup and data collection, before just going off and doing a *critical* study.

Set the PicoCount out like any other automated traffic counter (ATC). If you are new to using counters with air hoses, you should read the "Setting up the air hoses" section of the **PicoCount 4500** manual first.

If you are only needing volume data (vehicle counts, or axle counts), you may position the hoses in any suitable "volume" configuration (side by side, split median, long-hose/short-hose, etc.). For volume only collection, spacing between hoses is not critical.

If you are setting up for speed and/or classification, it will require pairs of hoses placed in parallel across the lane(s) at a known spacing (which can be anything from 1ft to 16ft, or 30cm to 500cm). If you don't have a preferred spacing, 3ft or 100cm are good options.

Once the hoses are set, connect them to your PicoCount. There are four hose connections to the **PicoCount 4500**, the "A" hose, the "B" hose, the "C" hose, and the "D" hose. The "A" hose connection is the nozzle (barb) closest to the letter "A" embossed into the PicoCount.

Once the hoses are properly connected, your study begins. As mentioned above, there are no switches to worry about, the PicoCount is always counting, so just let it collect data for the desired duration of your test study.

Downloading the data.

Once you have collected your test study, connect the **PicoCount 4500** to your PC as described above, and you should see a screen like this:



Now click on the "Download" button in the lower left of the TrafficViewer Pro window, and you will see a screen like this:

TrafficViewer P	ro v1.3.6.90 *BETA* - by Veh	icleCounts.com				
<u>File</u> <u>Communications</u>	<u>View Online Advanced Help</u>					
Communications PicoCount 4500 s/n: ID:	V2.19 Connection Date:	PC 2/2012				
Start Date 09/10/2012 Start Time 12:06	Memory Usage	1% Cc		PH (optional displayed or	n speed reports/exports)	
Download Comple Progress:		00% To ch Char To ch Char To ch char to a h the d	ange Layout ange the lane se layout dick nge Layout". ange the el connected nose dick on hannel letter e image to the	e & Hose Layout → ▼	Northbound	The lane names on the right may be a direction on the list or any other name you want to use, just type it in.
		Class	Measure Eng ification Scheme FHW Hose Spacing 36		Dwell Time	30 ms
				Cancel	Continue	©2008-2012 VehideCounts.com
Download Reset Unit	Configure Unit				Dpen Fil	
COM35 Opened	show Live	Tra	afficViewer Pro is up-t	o-date.		

First the Downloading dialog will pop up showing a progress bar of the download and when it is complete it will appear as shown above. Immediately after the download is complete the Data Setup dialog will appear as shown above.

Road Layout & Hose Setup Layout Descriptio Ш 4 hoses (short/long) 4 lanes with median Volume Only Data using Short/Long hoses This is a volume setup that counts hose hits (axles of vehicles) and divides by 2 (or any number you specify as "Axles/Vehicle"). With short hose/long hose setups you can get counts for each lane. The software will automatically subtract the shorter hose form the longer hose to get the hits in a lane before diving by axles/vehicle. Ш Т NOTE: The number of lanes shown are the number of lanes that can have unique counts based on the hose configuration used. The actual roadway can have more lanes but they will be totaled in one of the "lanes". П Cancel Select Layout

Next click on the "Change Layout" button and you should see a screen like this:

Here you highlight the hose setup that best represents how you had the hoses set up for the study then click on "Select Layout". There is a brief description of each hose layout on the right side of this panel. In our example data it was volume only data collected from a four lane road with a median between, one side going North, the other going South. Each side was collecting data in a long hose - short hose type of configuration which yields occupancy volumes for all four lanes.

Data Setup (hose config, etc.)		-
Location		
Comments		
Posted Speed MPH (op	tional displayed on speed repor	orts and used by "Calculate Dwell")
Lane & Hose	e Layout	
Change Layout To change the lane or hose layout click "Change Layout". To change the channel connected to a hose click on the channel letter	BACD Northbour	nd ind ind ind ind ind ind ind i
on the image to the right.	Southbour	ind 🔽
Measure English 👤		Dwell Time 30 ms Calculate Dwell
Classification Scheme FHWA (15 bit	ns) (*) 🔽	Edit Axles/Vehicle
	hes	Luit Axies/venice
📕 Spacing U	nknown or Axle Hits Only	
	Cancel Continue	•

The "Data Setup" screen now shows your hose configuration.

The top three fields are optional. These fields are presented in reports, exports and saved data files, if they are filled in.

Now select how the traffic is moving with respect to the hose setup (the arrows), then specify what directions these correspond to. **NOTE!** Keep in mind that if you make a mistake here, it in no way changes the data you have collected, only in how it is interpreted. If you got something wrong, you may return back to this window and "fix" the setup without having to download the data again.

Since we are collecting volume data only several of the lower fields are greyed out. One field you can set is "Dwell Time" which normally is always the same value. If it is your first time, you might just click on the "Calculate Dwell" button and it will give you a good default dwell time for the configuration you have chosen. The other field which you can change is "Measure". This field will present all speeds and data/times in either English or Metric formats.

All the fields in this window are explained in detail in the **TrafficViewer Pro** manual.

Once you are satisfied with the settings, click on the "Continue" button and a "Data Overview" screen will appear which has a thumbnail summary of the data you just collected.

Data Overview - 2012-10-17 Simulator 4 hose LS-LS.t	vp
Unit Type: PicoCount 4500	Unit ID:
Location:	Serial #: 12052402
Comments:	Hose A Counts: 10080
Hose Setup: Four hoses, short/long, multi-lane, median	Hose B Counts: 5285
	Hose C Counts: 5285
	Hose D Counts: 10068
Total Vehicles: 100750 Northbound(B) Vehicles: 23976 Northbound(A) Vehicles: 26429 Southbound(C) Vehicles: 26429 Southbound(D) Vehicles: 23916 Edit Header Print Reports Export Data	Save Data Close

This screen is a summary of all the data you collected in your test study. For our example data, it shows the occupancy volumes of each of the four lanes.

At this point, before printing any reports or doing any exports, it is wise to click on the "Save Data" button to save a RAW data file. You should ALWAYS do this, even though you may not think you will need the RAW data again.

Printing a Report.

Now click on "Print Reports" and you will see the following screen:

Start/Stop Time	
Data Summary Start 09/20/12 Stop 10/09/12 Stop 15.47 Start/Stop Time Selection Only data between the start and stop times will be printed. © Select by # of days © Select specific times Start on 09/20/2012 and show 20 Bin Intervat: 15 Min	Report Selection Volume Northbound(B) Northbound(A) Southbound(C) Southbound(D) Total
	Cancel Continue

Select the time range of the report (by days, or by a specific range of date/times). Then specify the binning time intervals (normally 1 hour, sometimes other values). Finally check the boxes for the types of reports you would like. Then click on "Continue".



Now you will see a "Print Preview" of your selected reports. If these look good, you may click on "Print", else you may return back to the data overview screen (this way you can review the reports without actually printing them which can be very handy) by clicking on "Close".

Printed: 10/23/2012 at 17:01	PiceCount 4500 V2 20 (s/n# 12052402)	Printed: 10/23/2012 at 17:01		PicoCount 4500 V2 20 (s/n# 12052402)
TrafficViewer Pro v1.4.0.95		TrafficViewer Pro v1.4.0.95		
R&R Technologies, Inc.			R&R Technologies, Inc.	
Daily Vehicle Volume Report			Daily Vehicle Volume Report	
Location:		Location:		
Unit ID: Study Date: 10/01/2012		Unit ID: Study Date: 10/02/2012		
Interval: 60		Interval: 60		
Northbound(B) Northbound(A) Southbound(C) Southbound(D) Total		Northbound(B) North	hbound(A) Southbound(C) Southbound(D) Total	
Volume Volume Volume Volume Volume Volume 1176		Volume V 00:00 - 00:59 575	Volume Volume Volume Volume 575 575 575 2300	
01:00 - 01:59 0 561 561 0 1122 02:00 - 02:59 0 559 559 0 1118		01:00 - 01:59 573 02:00 - 02:59 576	573 573 573 2292 576 576 576 2304	
03:00 - 03:59 0 575 575 0 1150		03:00 - 03:59 584	584 584 584 2336	
04:00 - 04:59 202 375 375 201 1153 05:00 - 05:59 574 574 574 574 2296		04:00 - 04:59 577 05:00 - 05:59 541	577 577 577 2308 541 541 541 2164	
06:00 - 06:59 568 568 568 568 2272		06:00 - 06:59 571	571 571 571 2284	
07:00 - 07:59 559 559 559 2236 08:00 - 08:59 583 583 583 583 2332		07:00 - 07:59 565 08:00 - 08:59 568	565 565 565 2260 568 568 568 2272	
09:00 - 09:59 575 576 576 576 2303		09:00 - 09:59 567	567 567 566 2267	
10:00 - 10:59 569 568 568 566 2271 11:00 - 11:59 573 573 573 572 2291		10:00 - 10:59 565 11:00 - 11:59 554	565 565 565 2260 554 554 554 2216	
12:00 - 12:59 558 558 558 558 2230		12:00 - 12:59 569	569 569 569 2276	
13:00 - 13:59 562 562 562 561 2247 14:00 - 14:59 572 572 572 563 2279		13:00 - 13:59 558 14:00 - 14:59 574	558 558 558 2232 574 574 574 2296	
15:00 - 15:59 566 566 566 524 2222		15:00 - 15:59 575	575 575 575 2300	
16:00 - 16:59 567 567 567 566 2267 17:00 - 17:59 560 560 560 560 2240		16:00 - 16:59 571 17:00 - 17:59 575	571 571 571 2284 575 575 575 2300	
18:00 - 18:59 568 568 568 568 2272		18:00 - 18:59 552	552 552 552 2208	
19:00 - 19:59 574 574 574 2296 20:00 - 20:59 578 578 578 2312		19:00 - 19:59 564 20:00 - 20:59 573	564 564 564 2256 573 573 573 2292	
21:00 - 21:59 582 582 582 582 2328		21:00 - 21:59 562	562 562 562 2248	
22:00 - 22:59 564 564 564 564 2256 23:00 - 23:59 570 570 570 570 2280		22:00 - 22:59 462 23:00 - 23:59 0	461 462 1846	
Totals 11025 13479 13479 10966 48949		Totals 12951	12950 12950 12950 51801	
AM Peak Time 04:40 - 05:39 00:01 - 01:00 00:01 - 01:00 04:40 - 05:39 04:40 - 05:39 AM Peak Volume 591 591 591 591 2364		AM Peak Time 01:23 - 02:22 01 AM Peak Volume 587	1:23 - 02:22 01:23 - 02:22 01:23 - 02:22 01:23 - 02:22 587 587 587 587 2348	
PM Peak Time 21:04 - 22:03 21:04 - 22:03 21:04 - 22:03 21:04 - 22:03 21:04 - 22:03		PM Peak Time 17:23 - 18:22 17	123 - 18:22 17:23 - 18:22 17:23 - 18:22 17:23 - 18:22	
PM Peak Volume 591 591 591 2364		PM Peak Volume 585	585 585 585 2340	

Once you are finished reviewing your data and printing your reports, you can close the "Print Preview" dialog by clicking on the "Close" button.

Your data has been collected, downloaded, reviewed, saved, and reports generated. That is the basic operations in a nutshell. You are now ready to go out and collect data. Remember to clear the unit data before each new study. If you forget to do this, all is not lost, but it makes data retrieval a bit more messy. This is discussed in the **PicoCount 4500** manual in the "When things don't go right" section.

Boilerplates.

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