TRAFX MARUAL

Part I



Advanced Counting Systems



Tip!
Enjoy Premium
technical support as a
DataNet user.
See page 21



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Products: By placing an Order, Buyer is deemed to have accepted the following warranty terms and other limitations. TRAFx warrants to Buyer that each Product shall be substantially free from defects in materials and workmanship under normal use for a period of one (1) year from the date on the Invoice (or for a period of five (5) years if TRAFx's optional extended limited warranty is purchased). The exclusive remedy and entire liability under this warranty will be for repair or replacement of the Product under warranty on a like-for-like basis, at TRAFx's sole option. TRAFx shall not have any obligation to repair or replace any Product under warranty until Buyer returns the warranted Product to TRAFx in accordance with these Terms and Conditions of Sale. This warranty shall not apply to any Product defects resulting from but not limited to the following: (a) improper maintenance or installation; (b) misuse, neglect or accident; (c) damage from moisture or corrosive environments; (d) electrostatic discharge; (e) operation outside the Products specification; (f) failure to follow Product instructions or (g) alterations or modifications made to the Product in any way.

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This limited Product warranty applies solely to original Buyer and is non-transferable.

DataNet: For the sake of clarity the above Product warranty does not apply to DataNet, for which warranty terms are found in DataNet's Terms and Conditions of Use (see trafx.net/legal)

Third Party Merchandise: Third party merchandise (e.g., cables) carries different warranty terms than TRAFx Products. Any warranty and technical support provided for third party merchandise is provided by the original manufacturer, not by TRAFx and TRAFx shall use reasonable commercial efforts to transfer that warranty, if transferable.

Definitions:

- "Buyer" means the person, organization or other legal entity that places an Order.
- "Invoice" means the sales invoice issued by TRAFx to Buyer for the Items listed on the TRAFx Quote and Order Form.
- "Items" means any quoted item listed on the TRAFx Quote and Order Form.
- "Order" means the placement of an Order by Buyer to TRAFx by submitting a TRAFx Quote and Order Form or by submission or use of a purchase order or other procurement instrument or means, electronically or otherwise, which Order placement constitutes Buyer's irrevocable and binding agreement to abide by TRAFx's Terms and Conditions of Sale.
- "Product(s)" means any product manufactured by TRAFx listed on the TRAFx Quote and Order Form, excluding DataNet.
- "TRAFx" means TRAFx Research Ltd., a corporation registered in the province of Alberta (Canada).



In a nutshell, limited warranty period is normally 1 year and covers manufacturing defects.

Support and repairs



- For support, see p. 17, and also visit trafx.net/support
- Before sending something for repair contact us via trafx.net/support
- Download the latest versions of manuals and software at trafx.net/support

TRAFX Manual - PART I

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TRAFx DataNet - Quick Guide (page 20)



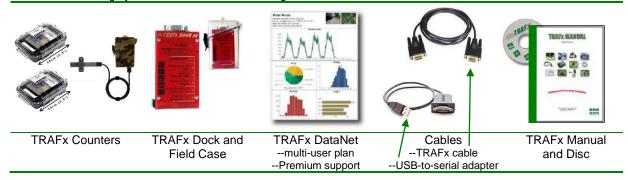
1.1 Overview

TRAFx Research Ltd. designs and builds advanced counting systems. These systems are primarily for:

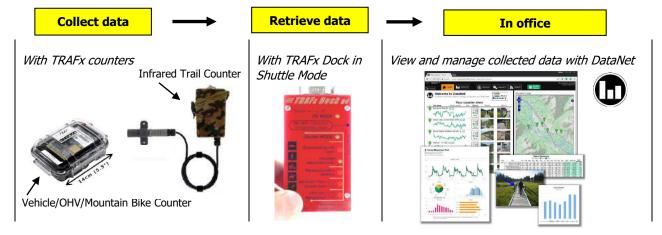
- Parks and public lands management
- Recreation studies

- Traffic and transportation studies
- Visitor studies

A TRAFx counting system consists of the following items:



A TRAFx system covers all stages, from data collection to data analysis and management.



Once you learn how to use one type of TRAFx counter, the other types are very easy to learn — all TRAFx counters have a common hardware and software foundation, forming a coherent technology family.

1.2 Generations

TRAFx was founded in 2001. Though our designs have evolved and improved greatly over the years, backwards compatibility has been carefully maintained. For example, a G2 counter from 2005 is compatible with a G4 dock from 2019. Further, our DataNet software is compatible with all generations of TRAFx counters and docks, even those from 2001. Below is a brief historic overview.

G4 counter/dock G3 counter/dock G2 counter/dock	2017+ 2008 2005	Backwards compatible	S
G1 counter/dock	2001		

Quick Guide

This guide presents a streamlined way to use TRAFx counting equipment. Do 1 to 5 <u>before</u> going to the field. After counter installation, do 8 to 10 each time.



This page also serves as a handy reference for the overall process.



Connect up using PC



Before starting read page 6 --- these are important words of wisdom.

Then, carefully do pages 7 and 8. Here's a summary.

- 1. Put batteries in your counter and dock
- 2. Confirm dock is in PC Mode
- 3. Connect: **PC---cable(s)---dock---counter**--if using the USB cable, install its driver first!
- 4. Open TRAFx Communicator and click GO!



Name counter/select mode

Using your PC's keyboard, enter "N" to name a counter and "S" to select mode. Remember to press the PC's **Enter** key (←). See page 9.



Set Dock's time





See page 13 to configure the dock's time. Here's a summary.

- 1. Connect: **PC---cable(s)---Dock** in Shuttle Mode
- 2. Open TRAFx Communicator and click GO!
- 3. Enter "C" to configure (yy-mm-dd and 24hr time)
- 4. Press Enter (←)



Print counter instructions

Now, jump ahead to page 16 and print out the required instructions that correspond to your counter type (e.g., vehicle, OHV, mountain bike, infrared trail counter).





Read counter instructions

After printing, follow the counter's instructions; the specified distances and other details are very important.



Install counter

Install counter in the field as per its instructions. Take a couple of photos of the site.



Launch counter



Counter

After installation, launch the counter <u>otherwise no data will be</u> <u>recorded</u>. Launching and downloading involve the exact same steps. Do steps 1 to 5 below.



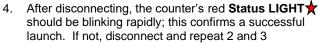
8 Do

Download counter



Here's how to use the dock's Shuttle Mode to download (and launch) a counter in the field after collecting data for a day, a week, a month, or more.

- Confirm that the dock is in Shuttle Mode
- 2. Connect to a counter. "Downloading" should blink
- 3. Disconnect when "Finished" blinks



Put a fresh desiccant pack inside the counter's case and close it

Go to the next counter. Repeat 1 to 5.



Before going to the field to download, confirm dock's:

(1) time is correct, (2) battery voltage is 3.4V or higher,
(3) old data is erased. See pages 13 to 15 for details.



Transfer data from Dock to PC



In your office, do as follows. See page 14 for details.

- Connect: PC---cable(s)---Dock in Shuttle Mode
- 2. Open TRAFx Communicator and click GO!
- 3. Click Download+ to save Shuttle file
- 4. Find Shuttle file (double click it to view it)
- 5. Lastly, enter "E" to erase dock



Use DataNet

The last step is to use DataNet to view your data. Go to pages 20 and 21 to learn how. Here's a summary.

- 1. Go to trafx.net to log in
- 2. UPLOAD Shuttle file and assign data to a counter site
- 3. **ANALYZE** and report data (i.e., generate totals, etc)









1.4 Words of wisdom

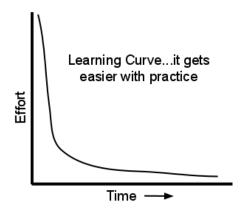
Please take a minute to read the following advice — it could save you a lot of time. Experience of other users has shown the following:



Overall approach

- Take a few hours to familiarize yourself with the equipment in the comfort of your office before heading out to the field.
- Follow the manuals carefully; you are learning how to do something new and unfamiliar. The Quick Guide on page 5 walks you through the entire process.
 - This manual and the contents of the TRAFx Disc are available for free download at <u>trafx.net/support</u> Ensure you are using current versions.
- ✓ Take the time necessary to select and prepare installation sites. Do not rush this. A wellselected and prepared site can be used year after year.
- After first installing a counter, return about a week later to do your first data download.
- ✓ After that, download monthly, if possible. This greatly reduces the risk of losing large amounts of data due to possible human error (e.g., incorrect installation), environmental conditions (e.g., a squirrel attacks the counter), technological issues (e.g., loose wire connection or weak batteries), and security issues (e.g., someone tampers with the equipment).
- Be sure to take the TRAFx manual to the field, and <u>use the checklists</u> provided in Part II.





People



Make one person in your organization responsible for learning how to operate TRAFx equipment well. This experienced person can then assist and supervise others, if necessary. Having several users who rotate or only occasionally use the equipment is a formula for grief and trouble. Avoid making short-term personnel (students, volunteers, seasonal staff, etc.) responsible for operating TRAFx equipment.



Learn from other user's mistakes

Why repeat other people's mistakes? Here are some.

- 1. Forgetting to install USB-to-serial adapter's driver software during initial setup.
- 2. Not following counter's installation instructions, especially the specified distances.
- 3. Forgetting to configure the Dock's clock after changing its batteries.
- 4. Forgetting to (a) change counter's desiccant pack each time when downloading a counter, (b) store and transport the desiccants in a sealed container.



Desiccant packet
(silica gel)
Visit
trafx.net/support
regarding size, type and
where to buy

- 5. Sliding rather than pressing the dock's mode button (do <u>not</u> slide it).
- 6. Forgetting to disconnect dock from PC when finished (quickly drains dock's batteries).

CHAPTER 2 — GENERAL OPERATION

This chapter consists of three steps and contains important information that applies to all TRAFx counter types and generations. Carefully work your way through it, even if you dislike manuals. Later, in Part II, use of specific counter types is covered.

What you need:

- Desktop or laptop PC (Intel/AMD)
- TRAFx Counter (and batteries)
- TRAFx G3 or G4 Dock (and batteries)
- TRAFx cable (and USB adapter cable)





2.1 STEP 1 — GET SET UP

The first step is to get things set up---the counter, the dock, and TRAFx Communicator.

A. TRAFX Counter

Put batteries in any TRAFx counter, carefully observing polarity (+ and -).
The vehicle/OHV/mountain bike counter uses three alkaline "C" batteries; the infrared trail counter

uses three alkaline "AA" batteries.





B. TRAFX Dock

Insert three alkaline AAA batteries into your dock (not rechargeables).

- 1. Remove battery holder's screw
- 2. Press down on lines and slide battery holder cover up
- Insert three AAA batteries (e.g., Energizer), carefully obeying + and -
- 4. Replace cover and screw

Put your dock in PC Mode by gently pressing its mode button with your fingernail. The dock's PC Mode LIGHT should be blinking.





When <u>not</u> connected to a PC, a G4 Dock automatically turns OFF after 5 minutes of inactivity, to save battery power.



C. TRAFX Communicator

To "talk" to (i.e., communicate) and configure your TRAFx counter and dock you need the TRAFx Communicator app (V4.1 is the current version).



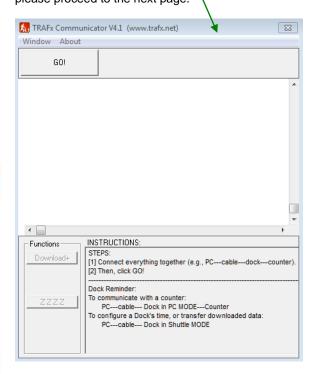
TRAFx Communicator for Windows (7/8/10) is on the TRAFx Disc. Or, download the latest version at: *trafx.net/support*





Using a MAC or Chromebook? Please email us via our Support Hub at <u>trafx.net/support</u> for these versions of TRAFx Communicator.

Find TRAFx Communicator and move it to your PC's desktop (or run it from the disc if you are not allowed to do this). You should see a hiker icon. Double click it to open and run it. You should see the screen below. If so, please proceed to the next page.



If your PC completely blocks TRAFx
Communicator, contact your IT staff, or
whoever set up your PC. They will need to
change your security settings to allow TRAFx
Communicator to run. If they have concerns about
TRAFx-related software, have them refer to:
TRAFx Overview for IT Staff

Download at: trafx.net/support

2.2 STEP 2 — CONNECT UP AND COMMUNICATE

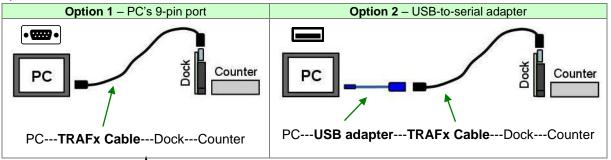
After putting batteries in your counter and dock, connect up (PC, dock and counter), using Option 1 or 2, to communicate with a counter. Ensure your dock is in PC Mode.



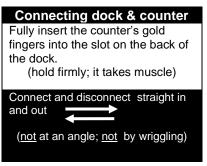
Option 1 Many government and corporate PCs have a 9-pin port (see left). Look carefully around the back of your computer for it. It offers the fastest and easiest way to connect up. Connect up as shown under Option 1 below.



Option 2 Only if your PC does not have a 9-pin port, use the supplied **USB-to-serial adapter**. But you must first install its driver software. See Appendix 2 on p. 19 for instructions. After installing the required driver software, connect up as shown under Option 2 below.



Need replacement cables? See Appendix 2 (p. 19)

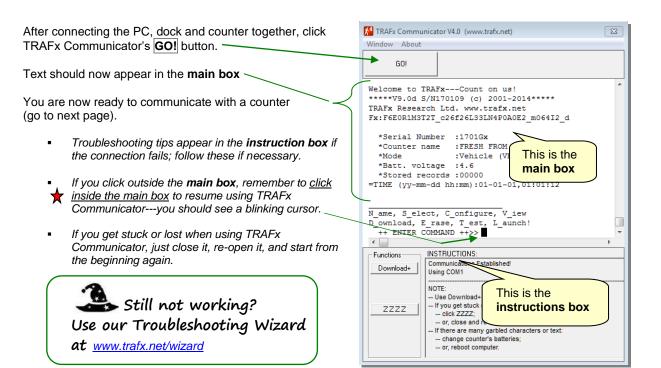






Vehicle/OHV/MB Counter

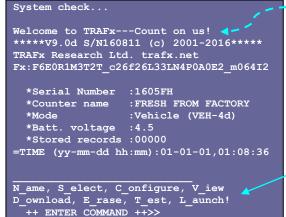
Infrared Trail Counter



2.3 STEP 3 — COMMUNICATE WITH COUNTER

STEP 3 covers how to communicate with a TRAFx counter using a PC to name it, select a mode, change its settings, etc. This general information applies to all types and generations of TRAFx counters. Connect up as described on p. 8. Ensure your dock is in PC Mode.

TRAFx Welcome Display



After clicking GO! the first display you should see on your PC's screen is the **TRAFx Welcome Display**.

The PC's keyboard is used to enter letters and numbers to instruct a TRAFx counter what to do.



At the bottom of the TRAFx Welcome Display is a menu of commands. On your keyboard, enter the word's <u>first letter</u> to select the command and then press **Enter** (\leftarrow 1).

N ame Enter N to name a counter

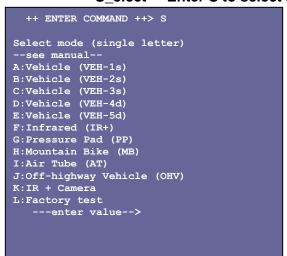




Enter ${\bf N}$ to give a counter a name. Use geographic names that correspond to the road or trail. Put a sticker on the counter with this name, too.

Enter a name for the counter using the PC's keyboard. The name may include both letters and numbers, to a maximum of 20 characters (but keep it under 10). After entering a name, press **Enter** (←) on the PC's keyboard.

S_elect Enter S to select a counter mode (vehicle, infrared, etc.)



Every TRAFx counter has a list of modes. When selecting a mode from the list ensure it matches your counter type.

After entering **S** a list appears. To select a mode, enter the mode's reference letter (A, B, C, etc.) and press **Enter** (\leftarrow).

TRAFx Vehicle/OHV/Mountain Bike Counter - normally enter D for vehicles; H for mountain bikes. and J for OHV (ATVs, quads)



TRAFx Infrared Trail Counter – enter F



(TRAFx Manual - Part II has more information on modes and their use.)

Each time a mode is selected, its default settings are freshly loaded.

Basic counter setup is now complete. Repeat the above for each counter. If you are following the Quick Guide go to page 13 now.

C

Enter C to configure counter settings C onfigure

```
++ ENTER COMMAND ++> C
=TIME (yy-mm-dd hh:mm):16-11-30,14:18
   ---enter value-->
=START(yy-mm-dd hh:mm):16-11-27,07:00
    --enter value-->
  *Counter name :Cedar Road
                 :Vehicle (VEH-4d)
  *Batt. voltage :4.5
*Stored records :00000
=TIME (yy-mm-dd hh:mm):16-11-30,10:19:06
=START(yy-mm-dd hh:mm):16-11-27,07:00
PERIOD (1/24/0=Timestamps) :001
DELAY
        (see manual)
                            :016
THRESHOLD (see manual)
                            :012
RATE (Fast/Slow)
  Are settings above OK? (Yes/No):
PERIOD (1/24/0=Timestamps) :001
    ---enter value-->
DELAY
                            :008
   ---enter value-->
THRESHOLD
                            :020
   ---enter value-->
```

Enter **C** to configure (i.e., change) the counter's settings.

Upon entering "C" the first two settings you will see are TIME and START.

For now, skip by TIME and START by pressing the keyboard's Enter key (←); the dock in Shuttle Mode automatically sets TIME and START, so you don't have to set these.

(START is the date/time at which data logging begins; see below).

Next a question appears: "Are settings above OK?" To change the mode's settings (to better optimize a counter for a particular situation), enter "N" for No. After entering a new value, press the Enter key (←). The counter instruction documents (p. 16) explain what the settings are for.

To leave a setting unchanged, just press the Enter key (←) to skip by it.

After changing settings, all settings stream by again. This provides an opportunity to double check them.



Jump to page 13 now

- The rest of this chapter is for old G2 docks (2005 to 2007), or if using PC Mode in the field (not recommended).
- Shuttle Mode (see p. 13) automates what follows, greatly reducing risk of human error.



++ ENTER COMMAND ++> C =TIME (yy-mm-dd hh:mm):16-11-30,14:18 ---enter value--> =START(yy-mm-dd hh:mm):16-11-27,07:00 ---enter value--> *Counter name :Cedar Road *Mode :Vehicle (VEH-4d)
*Batt. voltage :4.5 *Stored records :00000 =TIME (yy-mm-dd hh:mm):16-11-30,10:19:06 =START(yy-mm-dd hh:mm):16-11-27,07:00 PERIOD (1/24/0=Timestamps):001 DELAY (see manual) :016 THRESHOLD (see manual) :012 RATE (Fast/Slow) : F Are settings above OK? (Yes/No):

To set the counter's time, first enter C.

Upon entering "C" the first setting you will see is TIME. In order for the counter to log data properly, it must have the current date/time.

TIME - Enter current date and time and then press the Enter key (←). You must use the international, scientific format (yearmonth-day), with a 24hr clock (i.e., military time).

yy-mm-dd Example: Nov 30th, 2016, 2:18pm = 16-11-30, 14:18

START - Normally, do not enter a START time, as this will be determined automatically. To skip by this setting, press the Enter key (←).

Note: If you remove or change the counter's batteries, you 5 must re-enter TIME !!!

Info about START

- START is the date/time at which data logging begins.
- Upon entering "L" for Launch, or if using a TRAFx Dock in Shuttle Mode, START is automatically set to:
 - --the top of the hour (e.g., 14:00) if using hourly totals (unless it is less than 5 minutes away, in which case the next top of the hour is selected).
 - --5 minutes after entering "L" for Launch, if using timestamps.
- $\stackrel{\wedge}{\nabla}$ However, you can enter your own START date/time (e.g., two days in the future), with a PC.
- If setting your own START date/time, always enter the top of the hour (e.g., 16:00) if using hourly totals; enter midnight (e.g., 16-11-30, 00:00) if using daily totals.



V_iew Enter V to view current mode settings

٧

++ ENTER COMMAND ++> *Serial Number :1605FH *Counter name :Cedar Road *Mode :Vehicle (VEH-4d) *Batt. voltage :4.5 *Stored records :00000 =TIME (yy-mm-dd hh:mm):16-11-30,14:28:52 =START(yy-mm-dd hh:mm):16-11-27,07:00 PERIOD (1/24/0=Timestamps) :001 :016 DELAY (see manual) THRESHOLD (see manual) :012 RATE (Fast/Slow) :F N ame, S elect, C onfigure, V iew D ownload, E rase, T est, L aunch! ++ ENTER COMMAND ++>

Enter V to view the counter's current settings and other information, such as battery voltage, how many records are in the counter's memory, the counter's name, etc.

Remember: you must use yy-mm-dd, and 24 hour time (i.e., military time).

Enter D to download all data stored in the counter's memory

D

D ownload ++ ENTER COMMAND ++> D Welcome to TRAFx---Count on us! *****V9.0d S/N160811 (c) 2001-2010***** TRAFx Research Ltd. trafx.net Fx:F6E0R1M3T2T c26f26L33LN4P0A0E2 m064I2 Sets:N:H:001:008:M:012:000:F:Y:F:016:000 *Serial Number :1605FH *Counter name :Cedar Road :Vehicle (VEH-4d) *Mode *Batt. voltage :4.5 *Stored records :00072 =TIME (yy-mm-dd hh:mm):16-11-30,15:06:02 =START(yy-mm-dd hh:mm):16-11-27,15:00 PERIOD (1/24/0=Timestamps) :001 DELAY (see manual) :016 THRESHOLD (see manual) :012 RATE (Fast/Slow) :F Calibration: 03150 16-11-27,15:00,00944 16-11-27,16:00,01023 16-11-27,17:00,01286

Enter **D** to download data.

To download <u>and save</u> data to a file click TRAFx Communicator's special **Download+** button (bottom left area). Communicator then automatically creates and names a file. Browse to where you want it saved on your PC and then click Save. The data is then dumped into the file. Find the file; to open it, double click it. (Try this, even without data.)

-Header information (i.e., stuff located above the data), including settings used, automatically downloads before the stored data does.

Each line of data comprises one "record".

"END OF DATA" marks the end of the download.

E_rase Enter E to erase all data stored in the counter's memory

Ε

++ ENTER COMMAND ++> E

END OF DATA

-close data file

-then check it

Confirm erase data (Yes/No): Erasing data ...

Before erasing data ensure the data has been successfully downloaded <u>and saved</u> to a file. Open the file and inspect it.

Enter **E** to erase data in the TRAFx counter's memory. Confirm yes or no for this action. This reduces the risk of accidental erasure of field data. After downloading and saving data, erase it; <u>do not</u> let data accumulate in the counter's memory.

Enter T to begin a test session T est

++ ENTER COMMAND ++> T *Serial Number :1605FH *Counter name :Cedar Road :Vehicle (VEH-4d) *Mode *Batt. voltage :4.5 *Stored records :00000 =TIME (yy-mm-dd hh:mm):16-11-30,15:20:41 =START(yy-mm-dd hh:mm):16-11-27,15:00 PERIOD (1/24/0=Timestamps):001 DELAY (see manual) :016 THRESHOLD (see manual) :012 RATE (Fast/Slow) Are settings above OK? (Yes/No): _____ Test to screen in progress... -enter Z four times to end 16-11-30,15:20, 00001 00002 00003 etc.

Test is an optional feature that allows you to see data collection in real-time on a PC's screen, as actual counts occur.

T

Each counter's instruction document (p. 16) has detailed information regarding how to use Test. See this information when using it. For now you just need to know that Test exists.

Enter L to launch a counter to collect data L aunch!

*Serial Number :1605FH *Counter name :Cedar Road :Vehicle (VEH-4d) *Mode *Batt. voltage :4.4 *Stored records :00000 =TIME (yy-mm-dd hh:mm):16-11-30,15:21:27 =START(yy-mm-dd hh:mm):16-11-30,16:00 PERIOD (1/24/0=Timestamps) :001 :016 DELAY (see manual)

THRESHOLD (see manual) :012 :F RATE (Fast/Slow)

Are settings above OK? (Yes/No):

...5,4,3,2,1...BLAST OFF!!!

++ ENTER COMMAND ++>> I.

1-Remove counter from dock 2-Status LED still blinking rapidly? 3-long axis correctly oriented? 4-lid seal clean? 5-bag/container? 6-see manual for details

Important: Erase all stored records (i.e., data) before launching the counter. If you forget to do this, you will be reminded during the Launch process.

Enter L to launch a TRAFx counter for data collection.

Note: You must enter "L" to launch a counter. If "L" is not entered, then no data will be collected. Do not forget to enter "L" to launch the counter!

Upon entering "L" for launch, START automatically advances to a date/time in the future (see bottom of p. 10), when data collection will begin (unless you have entered your own START time).

Double check the settings, especially TIME, which must be the current date/time. If the settings are OK, then enter Y for Yes. Entering N for No cancels Launch!

After Launch! remove the counter from the dock. Check the Status LIGHT S. It must be blinking rapidly (4x/second) after removal from dock. If not, reinsert the counter into the dock, double check all settings, and try Launch again. Ignore the other lights for now.

Reconnecting the counter to the dock cancels the Launch!





Find the above confusing? Note that Shuttle Mode automates all this, greatly reducing the risk of human error. We strongly recommend you use Shuttle Mode instead. See next page.

2.4 USE SHUTTLE MODE

2.4.1 Overview

All G3 and G4 Docks have "Shuttle Mode". Shuttle Mode provides an easy and convenient way to retrieve data from one or more counters in the field, without a laptop. Just connect the dock in Shuttle Mode to a counter and it downloads and launches the counter automatically. After you return to your office, transfer the downloaded data stored on the dock to a PC.

Advantages:

- The easiest and fastest way to download and relaunch a counter
- More compact, portable, rugged and easy to use in the field than a laptop.
- Much longer battery life (years for G4 Dock vs. only hours for laptops).
- Reduces human errors; automates the download and launch process.

Shuttle Mode

=TRAFX DOCK 64 Counter -PC MODE • ON / OFF - hold button Change mode - press Shuttle MODE 00 Downloading, etc. Auto --wait--Finished --disconnect now--Replace Counter's Batteries Set Dock's Time - SLOW Counter Alert - FAST >75% Full - SLOW Memory Full - FAST 1 blink/2sec = slow www.trafx.net 4 blinks/sec = FAST

2.4.2 Instructions

(This section assumes you have already completed pages 7 and 8).

Configure Dock's time

(If you have a counter connected to the dock, remove the counter from the dock now.)

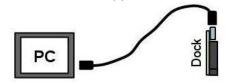
The dock has a quartz clock for time keeping. You must configure (i.e., set) the dock's TIME, otherwise Shuttle Mode won't work.



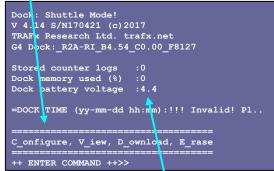
Put your dock in Shuttle Mode, using your fingernail. (The Dock Alert LIGHT blinks as a

Open TRAFx Communicator. Connect: PC----cable(s)---Dock

reminder to set the dock's time).



After clicking the GO! button you should see information about the dock, and the dock's menu at the bottom.



Also note that the dock's battery voltage is displayed (replace batteries if < 3.4 volts).

(4.) Enter "C" to configure the dock's TIME.

Input TIME, carefully noting the required format (yy-mm-dd and 24 hr time and press Enter (←).



yy-mm-dd Eq: May 3rd, 2017, 5:00pm = 17-05-03 17:00

Note: 24hr time is also known as "military time". Examples: 9am = 09:00; 9pm = 21:00

Each time you change or remove batteries, you must configure the dock's time!



Dock setup is now complete. Disconnect the cable from the dock.

The dock can now be used as an autonomous "shuttle". When connected to a counter the dock automatically:



checks counter's batteries downloads counter's data (if any) 2. erases counter's data (if any) 3. sets / updates the counter's clock 5. sets its START time gets its diagnostic info 6. creates a counter log 7. launches counter

The diagnostic info is used by DataNet's powerful Diagnostic Tool. Diagnostics

2 Key Steps for the field

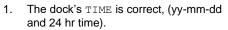
Here is a handy summary regarding Shuttle Mode and how to download / launch a counter in the field. Use this summary before going to the field and while there.



Shuttle Mode Key steps for the field

Don't forget to do this each time...

Before going to the field confirm that:





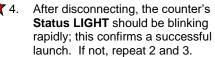
- The dock's battery voltage is 3.4 or higher (if not, replace dock's batteries and reconfigure TIME).
- 3. Erase old data stored in the dock's memory. Enter E for Erase.



Go to a counter in the field.



- . Confirm that dock is in Shuttle Mode.
- 2. Connect to a counter.
- 3. Do what the dock's LIGHTs indicate (see next page for LIGHT guide).
 ---If the Replace Counter's Batteries
 LIGHT blinks, disconnect, replace the counter's batteries and then reconnect.



5. Put a fresh desiccant pack inside the counter's case.

Go to the next counter. Repeat 1 to 5.

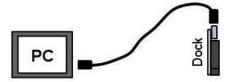
If you are following the **Quick Guide** jump ahead to p. 16 now.

3 Transfer Dock's data to PC

After downloading data from counters in the field with Shuttle Mode, transfer this data from your dock to your office PC.

To transfer the counter logs stored in the dock's memory to your PC follow these steps:

- 1. Confirm dock is in Shuttle Mode.
- Open TRAFx Communicator. Connect: PC---cable(s)---Dock



 After clicking the GO! button you should see information about the dock, and the dock's menu at the bottom.

To download the dock, click on TRAFx
 Communicator's special Download+
 button. All the individual counter logs
 download together as a single Shuttle file.

The Shuttle file containing all the counter logs has now been transferred from the dock and saved as a file on the PC.



To confirm this, find the downloaded Shuttle File (where did you save it?) and click it to open it. **Notepad**, a program normally present on all PCs, should

automatically open it.



After the Shuttle file has been transferred and saved to a PC, always erase all the counter logs stored in the dock's memory. Enter "E" for Erase.

++ ENTER COMMAND ++>> E

Permanently erase all counter logs
stored in dock? (Yes/No)

Enter "Y" to erase all counter logs.

The dock is now ready the next time you want to download data in the field. Lastly, disconnect dock from PC (otherwise dock's batteries quickly drain).

4

Use DataNet

So, you've downloaded and saved a Shuttle File and it is on your PC. What's next? The next step is to bring the Shuttle File into DataNet to see your totals, create summary tables and charts/graphs, etc. See pages 22 and 23.



A. General

G3 Dock: released in 2008 G4 Dock: released mid-2017 What follows covers both.

B. Battery-related

G3 Dock (green)

- 3 to 6 months bat. life
- always on; always blinking

Dock (red)

- 4 to 6 years bat. life
- ON/OFF button; also, auto-on (upon connection) and auto-off (after 5 minutes inactivity). Therefore, much longer battery life.



--After inserting batteries, configure the dock's TIME using a PC!! (see p. 13)

-Disconnect dock from PC when done (otherwise dock's batteries quickly drain).

Counter

Replace Counter's Batteries blinks when:

- G3 Dock counter's voltage <3.3V (30%)
- G4 Dock counter's voltage <3.1V (15%)

If the Replace Counter's Batteries LIGHT blinks: (1) disconnect dock, (2) replace the counter's batteries, and (3) reconnect dock. See p. 14

If leaving a TRAFx Vehicle/OHV/Mountain Bike counter for a long time before returning again (i.e., approx. 2 months or more), give the counter new batteries regardless of whether Replace Counter's

C. Shuttle Mode memory capacity

Batteries LIGHT comes on or not.

How many counters can the dock in Shuttle Mode download? That depends upon the amount and type of data they have.

Scenario	Dock	Download	Records
	storage	time per	in counter
	capacity	counter	memory
	(approx.)	(approx.)	
Hourly totals	375	7 secs	720
– 1 month	counters		
Hourly totals	125	21 secs	2160
- 3 months	counters		
Timestamps	275	10 secs	1000
-1000	counters		
Timestamps	20	140 secs	14000
-Memory Full	counters		

Download speed is roughly 100 records/second

LIGHT guide

Part I

	Comment	Blink Rate
CHAFN DOCK G4 DOCK G4 DOCK G4	PC MODE PC Mode Counter detected; no PC PC and counter detected	Slow Fast Solid
N / OFF - hold button hange mode - press	SHUTTLE MODE Shuttle Mode PC detected	Slow Solid
Shuttle MODE of Some Downloading, etc.	Downloading, launching, etc. Wait! Do not disconnect!!!	Fast
wait	Finished. You can safely disconnect now	Fast
Finisheddisconnect now	Low batteries. Disconnect counter, replace its batteries; then re-connect.	Fast
Replace Counter's Batteries	Dock Alert Set dock's time using a PC (see p 13)	Slow
Set Dock's Time - SLOW Counter Alert - FAST	Counter Alert -remove/re-insert counter's batteries -or, bring back to office	Fast
>75% Full - SLOW	Memory 75% Full	Slow
1 blink/2sec = slow rafx.net 4 blinks/sec = FAST	Memory Full Do not download anymore counters	Fast
	Slow = 1x/2sec	ec

D. Notes

Shuttle Mode Menu Commands

c = C_onfigure dock's date/time v = V_iew list of counter logs (co

= V_iew list of counter logs (connections)

= D_ownload the dock to a PC

= E_rase the dock

In winter, put the dock in its case and keep near your body.



Keep dock dry at all times. Immediately dry it (no batteries) with gentle heat if it becomes wet.



E. Troubleshooting the Dock

a. Dock not blinking?

G3 Dock: Replace dock's batteries G4 Dock: Turn it on. Still not blinking? Replace dock's batteries.

(After, configure dock's time – see p. 13)

b. If the dock does not react or function properly:

- A. Soft-reboot hold in Mode button for 10 seconds (Still not working? Try B below).
- B. Hard-reboot remove all batteries for 1 full minute. Reconfigure the dock's TIME with PC after reinserting its batteries!!
- c. If the Counter Alert LIGHT blinks, reboot the counter by removing and re-inserting its batteries. If that does not fix the counter, do the counter test and inspection on p.18
- d. Still not working? See our Troubleshooting Wizard at www.trafx.net/wizard



CHAPTER 3 - PRINT COUNTER'S INSTRUCTIONS

(PART II)

Each counter type has its own instruction document.

- TRAFx Infrared Trail Counter
- TRAFx Vehicle Counter
- TRAFx OHV Counter
- TRAFx Mountain Bike Counter

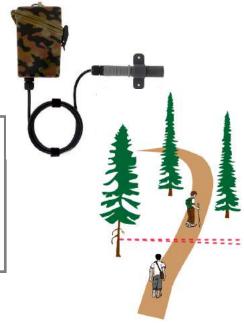
Carefully read the counter's instructions (settings, installation, maintenance, etc.) before using the counter. The instructions contain <u>critical</u> information regarding your counter(s).

The counter's instruction document is on the TRAFx Disc, or download the current version at <u>trafx.net/support</u> Print it, hole punch it and add it to this manual. Read it before going to the field.

Print these







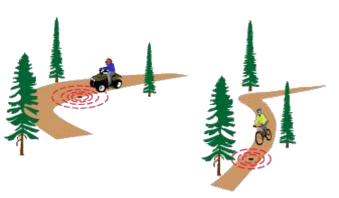








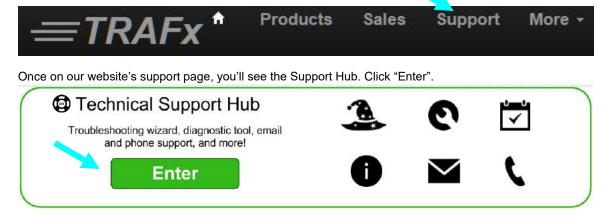
Important: Want to detect both highway vehicles and OHVs? Always refer to the instructions of smallest vehicle type you want to detect (e.g., the TRAFx OHV Counter Instructions).



CHAPTER 4 — SUPPORT



Technical support, including by email and phone, starts at our website's support page at <u>trafx.net</u> Please visit our website and click "Support" to begin the support process.



(Unable to visit our Support Hub? The tables and FAQs that follow address most support scenarios.)

4.1 Troubleshooting Table

#	Problem	How to resolve
1) ************************************	PC / TRAFx Communicator problems I cannot "talk" with my dock (or counter) using my PC TRAFx Communicator does not work I have a new (or upgraded) PC. What do I do?	Use Troubleshooting Wizard at trafx.net/support
2 OSER	Dock problems ■ My dock is not blinking / working	See dock troubleshooting (p. 15) Try Troubleshooting Wizard
	Using Shuttle Mode, I connect to a counter but only Shuttle Mode blinks	See dock troubleshooting (p. 15) • Reboot dock
	Counter/Dock Alert is blinking on my G3 Dock. Why?	Set dock's time (p. 13)
3	Ounter problems Missing data; stopped counting early Extremely high (>10,000/day) counts; or no counts Short battery life What am I doing wrong? What step did I forget?	Use DataNet's file diagnostic tool 1 Login to DataNet 2 UPLOAD > Diagnostics
O	 No lights blink on my counter My counter does not work with my dock Is my counter damaged or dead? 	Do counter test (see next page)
	 Counts are moderately higher or lower than expected How do I make adjustments? 	See troubleshooting section in counter instructions (p. 16)
4	Wrong date/time How I do I correct date/times in a data file?	Use Date Correction Tool trafx.net/support



4.2 Counter Test

This quick and easy test confirms that your counter has battery power and that your dock is able to download / launch it. In other words, it confirms basic health. Please carefully do each step below.

STEPS	Counter test	
1	 Confirm your G3 or G4 Dock is blinking in Shuttle Mode If the second light from the bottom also blinks, see p. 13; you need to set the dock's time first. 	Shuttle MODE, O
2	Connect dock to counter (without cable or PC).	Counter
3	If "Downloading" blinks, and eventually "Finished", then your counter passes the basic health test. If only Shuttle Mode blinks, reboot your dock. See p. 15 If it passes but still does not work properly see 22 below.	Downloading, etcwait Finisheddisconnect now
4	If "Replace Counter's Batteries" blinks, do this: a Disconnect counter from dock b Remove old batteries from counter c Insert new batteries d Do Step 1, 2, and 3 again.	Replace Counter's Batteries
5	If "Replace Counter's Batteries" still blinks it means the counter is not getting battery power. Do the six-point counter inspection below.	Replace Counter's Batteries
	Counter Inspection	
6	 Inspect the batteries. Backward? Inspect the red and black battery wires. Disconnected? Inspect the six battery holder contact points. Dirty? Corroded? Inspect the counter's circuitboard. Moisture stress? Corrosion? Inspect the counter's 18 gold fingers. Any corrosion? Do you see anything else that looks suspicious? 	
7	Find something (1 to 6)? Feel free to email us via our Support Hub. Provide photos of your counter's circuitboard and battery holder. Also, see Q1 below.	trafx.net/support
	Counter Maintenance	
8	See maintenance section in counter instruction documents (p. 9)	

4.3 Support FAQs

Q1: How do I get a counter (or dock) repaired?

If after having reviewed the above table, the counter (or dock) is still not working, email us via our Support Hub at trafx.net/support. We first need to determine whether or not it is repairable. A moisture-damaged and/or corroded counter circuitboard is usually not repairable. Ordering replacement parts is often the solution.

Q2: One of my counters is not working. What's the next step?

Do the counter test above. If it passes the test but still does not work properly, use DataNet's Diagnostic Tool (see #3 on p. 17).

Q3: How do I install my counter? How far away should I install it? Can you recommend a box?

All these questions are answered in the counter's instructions. See p. 16

Q4: I am taking over from someone else. What do I do? Where do I start?

Go to trafx.net/support and download TRAFx Manual - Part I and the applicable counter instructions. Carefully read both. Also, confirm the counters have been installed properly.

Q5: If I remove counter's (or dock's) batteries, do I lose my data? No, your data is safe.

APPENDIX 1 — LCD Tally Display Reset

If you special ordered the factory installed LCD tally display, see its instruction document on the TRAFx Disc. Or, download at *trafx.net/support*

APPENDIX 2 — USB Driver Installation

As mentioned, only use a USB-toserial adapter (and its required driver) if your computer <u>does not</u> have a 9pin serial port. The adapter plugs into a PC's USB port.



Requirements:

- Sewell USB-to-serial adapter (see below)
- Desktop or laptop PC (Intel/AMD) with Windows 7/8/10
- Using a MAC or Chromebook? Contact us via our Support Hub <u>trafx.net/support</u>

Step 1: Install USB driver software

- Insert the TRAFx Disc into your PC (or download the driver at <u>trafx.net/support</u>)
- Find and open the "USB to serial driver" folder
- Click on "Driver Installer.exe" and follow its instructions.
- 4. Lastly, reboot your computer.

(If you are not allowed to install software, contact your IT specialist.)

Step 2: Plug adapter in

After installing the driver software, plug the USB adapter into a USB port on your PC.

Important: if the adapter was plugged in during the driver installation process in Step 1, disconnect and reconnect it to the USB port.

Go to p. 8 after completing Step 1 and 2 above.

Where do I buy replacement cables?

USB-to-serial adapter

sewelldirect.com
Part #: SW-1301
Ships same day



Or, google: ATEN UC232A

This one is fine, too

Only use the above two; others often don't work!

TRAFx Cable

Null modem cable, 9-pin, F/F mouser.com

Part #: P450-006



APPENDIX 3 — TRAFx Disc

The disc is primarily for those unable to download software from our website. Its contents include:

- TRAFx Manual Part I and Part II
- Misc "how to documents"
- TRAFx Communicator (for Windows)
- USB-to-serial driver (for Windows)

Note that TRAFx Communicator can run directly from the disc, if you are unable to install it.

Download the latest version of everything on the disc at *trafx.net/support*



APPENDIX 4 — General Specs and Notices

G4 Specs	Counters	Dock
Operating temp. (C)	-40 to 55	-20 to 55
Operating temp. (F)	-40 to 131	-4 to 131
Battery size	C and AA	AAA
Battery type	Alkaline	Alkaline
Battery max. temp. (C/F)	55 / 131	55 / 131
Battery life	See Part II	See p. 15
Voltage range	2.7 to 5	2.7 to 5
Communications	RS232	RS232
Communication speed	115.2K	115.2K
File type	ASCII / .txt	ASCII / .txt
Time keeping (@20C)	+/- 10ppm	+/- 10ppm
Circuitboard surface	Gold (ENIG)	Gold (ENIG)
Anti-moisture coating	Silicon	Silicon
EMI Compliance	FCC, IC, CE	FCC, IC, CE
Field case	Weatherproof	Weatherproof
Submersible	No	No

Notices

- Carefully read and follow TRAFx Manual Part I and Part II before using TRAFx products.
- 2. Keep TRAFx equipment dry at all times.
- Replace a counter's desiccants pack each time you download data.
- 4. Use safe field practices and precautions.
- 5. Happy counting!



Tip from the Count

Like many USB devices, you might occasionally need to disconnect and reconnect the adapter from your computer's USB port, especially after restarting your computer, or after not having used it for awhile to wake it up.



DataNet is a comprehensive web-based solution to view, analyze, manage and present your TRAFx data. It is an essential part of your TRAFx counting system, and of a successful, efficient and



effective counting project. Bottom line: it saves you time. DataNet reflects over a decade of design, development and refinement. Over a thousand organizations use it.

DataNet's highlights include:

- Comprehensive yet very easy to use
- Quickly generate totals, charts, reports, etc
- Makes data management simple
- Promotes "best practice"
- A multi-year DataNet plan for five users is included as part of your system package
- Premium-level Tech Support for your counters, docks, etc. is bundled with DataNet



- Web-based (nothing to install or maintain)
- Login to your secure account from anywhere

How does DataNet fit in? After you have retrieved data from counters in the field, and you are back in your office, you upload the data file (e.g., Shuttle file) from your PC to DataNet.

Here is how to get started:

- First, **learn** more about DataNet, using this guide and the online DataNet demo.
- Second, activate your organization's subscription plan (next page).

1 Demo

Go to <u>trafx.net/datanet/demo</u>, log in to the DataNet demo, and click along with this guide.

Each DataNet account allows two user types:



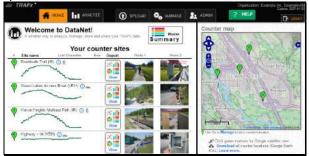
- (1) **Administrators:** can do everything (upload data, create sites, delete data, add other users, etc.).
- (2) **Viewers:** can generate totals, charts, reports, etc., but cannot add, delete or change things (upload data, delete data, remove other users, etc.).

For this demo, you are logged in as a <u>Viewer</u>.

Find <u>HOME</u> and <u>ANALYZE</u>. All users (Administrators and Viewers) will frequently use these.

HOME – Provides an overview: counter sites, reports, photos, master summary, a map, etc. When you upload new data, HOME automatically updates.



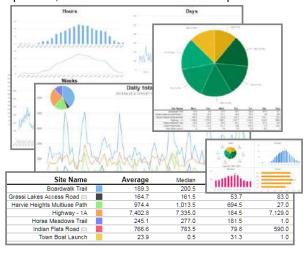


Explore by clicking around: the icons, reports, photos, map markers, etc. The single-click, instant **Master Summary** (monthly rollup) is a favorite.

ANALYZE – It is here you generate charts (i.e., graphs), reports, and totals, and, if desired, export them and their source data. Follow the three easy steps: select site, date range, and report type.



For practice, create five to seven different reports.

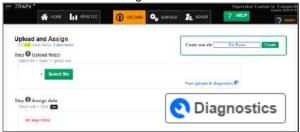


To export to Excel, just click on the Excel icon.



The next three menu items (UPLOAD, MANAGE and ADMIN) are used by Administrators. As a Viewer, you can "see" but you cannot "do".

upload a file (e.g., Shuttle File), and then you assign its data to specific counter sites. To create a new counter site use the green box.



There is also a powerful file diagnostic tool to examine uploaded data for possible problems.

MANAGE – This is where you manage your counter sites and their associated information and settings (name, location, photos, data files, etc.). Also, new counter sites can be created here.



Click a site to manage it. You can manage:

- 1. Site Info (name, location, photos, etc.)
- 2. Data Options (adjustments, divide by 2, etc.)
- 3. Data Sets (move, remove, export)

ADMIN – This is where an Administrator can add (and remove) other users. Administrators are responsible for adding (or removing) other users, not TRAFx.



A new user can be added either as an **Administrator**, or a **Viewer**. Just follow the prompts. You can have multiple Administrators and multiple Viewers---this is up to you and your organization. As mentioned, Administrators have full privileges, whereas Viewers have fewer privileges.

The quick tour is now finished. For comprehensive information see DataNet's Manual.





IMPORTANT: Although TRAFx backs up your DataNet data daily, store all your original data files in a safe place.

2 Activate

A TRAFx System Package includes a pre-paid multiyear plan for five DataNet users. DataNet's activation code sticker is located below, in the original hardcopy manual that shipped with your TRAFx System Package.





If you cannot find your original manual and/or activation code, email us proof of purchase, through our Support Hub at trafx.net/support

Activation only needs to be done <u>once by one person</u> in your organization. That person automatically becomes an **Administrator** and can invite (add) other users, via DataNet's **ADMIN** tab.

DataNet's start-date was your system package's ship date so there is no advantage to delaying activation.

Also, by activating DataNet you enjoy Premium-level Support (see below). Additionally, equipment tips and reminders are available in DataNet.



Enter activation code and your email > email verification occurs > create your organization's DataNet account > register and read agreement > use DataNet

DataNet includes five DataNet user licenses. Each user (i.e., person) requires a license; email/password sharing is not allowed.

Premium-level technical support

DataNet users enjoy premium-level technical support (priority email response, and support by phone) for all their TRAFx equipment (counters, dock, DataNet, etc.), with their Premium Support ID. This ID is displayed in the upper right corner of DataNet, upon log in. Have it handy when contacting us.



All technical support begins at our **Support Hub** at *trafx.net/support*

DataNet Gallery

What can DataNet do? Below are just a few examples that can be created instantly.



