

---

## **LIMITED WARRANTY**

JAMAR Technologies, Inc. warrants the Black Cat Radar Recorder against defects in material and workmanship for a period of one (1) year limited warranty on parts and one (1) year limited warranty on labor from the date of purchase. For information on extended warranty call 1-800-776-0940.

JAMAR Technologies, Inc. warrants each new instrument manufactured by the company to be free from defective material and workmanship and agrees to remedy any such defect. At its option, it may furnish a new part in exchange for any part of any instrument of its manufacture which, under normal installation, use and service discloses such defect. The instrument must be returned to our factory or authorized service agent intact, for examination, with all transportation charges prepaid.

This warranty does not extend to any products which have been subject to misuse, neglect, accident, vandalism or incorrect wiring not our own. This warranty does not extend to damage caused by improper installation in disregard of the instructions furnished by us. This warranty does not extend to products which have been repaired or altered outside our factory or authorized service agent. There is a 90 day warranty on the rechargeable battery of the Black Cat Radar Recorder.

In no event shall JAMAR Technologies, Inc. be liable for any damages arising from the use of this product including damages arising from the loss of information.

This warranty is in lieu of all other warranties expressed or implied and no representative or person is authorized to assume for us any other liability in connection with the sale or use of our products.

JAMAR Technologies, Inc. reserves the right to make improvements on the product and/or specifications at any time without notice.

Questions concerning this warranty or any JAMAR Technologies, Inc. product should be directed by mail or telephone to:

JAMAR Technologies, Inc.  
1500 Industry Road, Suite C  
Hatfield, PA 19440  
215-361-2244

## **COPYRIGHT NOTICE**

This manual is copyrighted. All rights are reserved. This document may not be, in whole or part, photocopied, reproduced, translated, or reduced to any electronic medium or machine readable form without prior consent, in writing, from JAMAR Technologies, Inc.

Copyright 2016 by JAMAR Technologies, Inc.

If you have any questions about the Black Cat Radar Recorder that you cannot find answers for in this manual, there are several ways to get additional information.

For the latest support information on the Black Cat Radar Recorder, please visit our web site at:

**[www.jamartech.com/blackcatradarsupport.html](http://www.jamartech.com/blackcatradarsupport.html)**



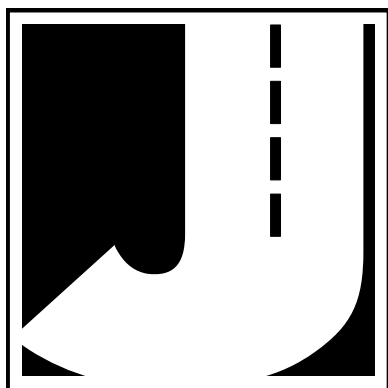
Support is also available by e-mail at:

**[support@jamartech.com](mailto:support@jamartech.com)**

Support is also available by phone at:

**1-215-361-2244**

Monday — Friday, 8:00 AM to 5:00 PM Eastern time



---

# Table of Contents

<b>Technical Support</b>	<b>iv</b>
<b>Quick Setup Guide for the Black Cat Radar Recorder</b>	<b>vi</b>
<b>Chapter 1 – Introduction</b>	<b>1-1</b>
What is the Black Cat Radar Recorder?	1-2
How is the Black Cat Radar Recorder Powered?	1-3
Before You Begin	1-4
<b>Chapter 2 – Site Installation</b>	<b>2-1</b>
Installation	2-2
Selecting a Site	2-2
Mounting the Black Cat Radar Recorder	2-3
<b>Chapter 3 – Programming the Radar Head</b>	<b>3-1</b>
Connecting the Black Cat Radar to Your Computer	3-2
Connecting the Black Cat Radar - USB Port	3-2
Connecting the Black Cat Radar - Wireless Bluetooth	3-5
Connecting the Black Cat Radar - Remote GSM Modem	3-6
Setting Up a Study	3-10
Manual Setup	3-11
Quick Set	3-12
<b>Chapter 4 – Downloading Data</b>	<b>4-1</b>
Downloading Data	4-2
<b>Chapter 5 – Battery Care</b>	<b>5-1</b>
Maintaining Your Battery	5-2
Battery Charging	5-2
Additional Notes	5-3

## **Quick Setup Guide for the Black Cat Radar Recorder**

- 1.** Install the TRAXPro software for use with the Black Cat Radar Recorder, following the instructions that came with the software.
- 2.** Check the battery voltage of the battery to be used for your study. If the charge is sufficient (13.4 or higher), connect the battery to the Black Cat Radar Recorder.
- 3.** Install the Recorder in the field, following the directions in Chapter 2.

For the best results, the Black Cat Radar Recorder should be installed:

- Six to ten feet back from the road.
- At least six feet above the ground.
- At a 45 degree angle to the flow of traffic.
- Where the far side lane is no greater than 50 feet away.
- Where traffic is free flowing.

The unit should not be installed:

- At an intersection.
- Near where vehicles are likely to park.
- In a position that causes the radar head to be at an extreme angle.
- Near where pedestrians are likely to be crossing.
- Where the Radar's "view" is obstructed.

- 4.** Use the TRAXPro software to setup the Black Cat Radar Recorder as described in Chapter 3. Use the Real Time feature of the software to check that data is being recorded properly.
- 5.** Leave the Black Cat Radar Recorder to record data for the time period you would like. A fully charged battery will record data for approximately 6 days.
- 6.** Download the data using the TRAXPro software.
- 7.** Use the TRAXPro software to view your data and produce reports.



## Chapter 1

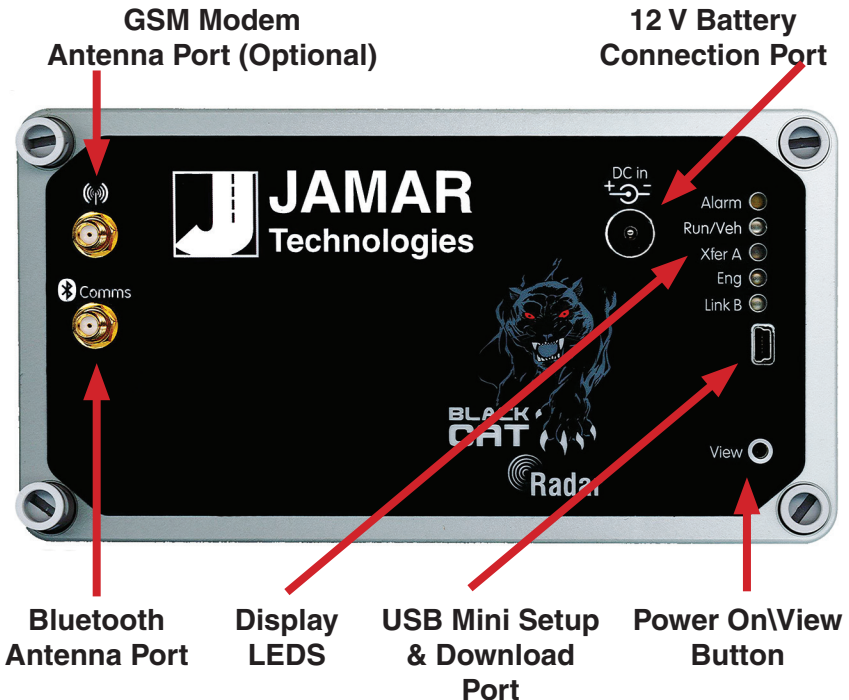
# Introduction

## What is the Black Cat Radar Recorder?

The Black Cat Radar Recorder is an automatic traffic data collector distributed by JAMAR Technologies, Inc. It is designed for ease of use, but contains many options and features to provide comprehensive traffic data collection. This device is a non-invasive data collector that uses radar to gather highly accurate traffic data, which means there is no need to install any road tubes, loops or other type of sensor in the road.

With the Black Cat Radar Recorder, you can gather data that includes vehicle speed, length, gap and volume. At any convenient time, you can transfer the data from the Black Cat Radar Recorder to your computer for processing. Data can be collected for either bidirectional roads or two lanes going the same direction. The Black Cat Radar Recorder contains 2 GB of memory, allowing you to record up to 200,000,000 vehicles.

The head unit of the Black Cat Radar Recorder contains several connection ports and LED lights with which you should familiarize yourself. These are shown below.



## **Display LEDs**

Alarm Indicator – This light illuminates during boot-up. It also illuminates when a fault is detected. Wait for this light to go off before attempting to connect to the TRAXPro Software.

Run/Veh Indicator – This is normally ON, and flashes off when a vehicle is detected.

Xfer A Indicator – Indicates a data transfer is taking place on the USB connection.

Eng Indicator– The Eng Indicator alone, or in conjunction with the Alarm Indicator, indicates the unit is conducting a firmware update.

Link B Indicator – This indicates that the Black Cat is connected to a computer using the Mini USB port.

\*The Display LEDs may time out after approximately 1 minute. Simply push the View button to again see the indicators.

## **Power On/View Button**

This button is multi-functional. Pressing the button will activate the indicators for a period of approximately 1 minute. If the button is pressed and held for approximately 10 seconds, it will shut down the Black Cat Radar Recorder. Pressing it again will restart it.

## **How is the Black Cat Radar Recorder Powered?**

The Black Cat Radar Recorder is powered by a 12 Volt rechargeable battery. The standard battery used with the device is a 12V 12A lead acid battery. In general, a fully charged battery (13.4 volts or higher) will record data for 6 days before needing to be recharged. The battery voltage can be seen when the unit is connected to the TRAXPro Software.

As an option, other types of batteries can be used for specific applications. A 12V 12A lithium battery will provide the same power as the lead acid, but is considerably lighter (3.5 lbs vs. 8.5 lbs.). A 12V 18A lead acid battery

can be used for recording more days on one charge, but is heavier (12 lbs.).

An optional solar panel is also available for long-term installations.

When the Black Cat Radar Recorder is first shipped to you the battery is disconnected and will need to be connected before first use. We recommend that you check the voltage level of the battery when it is first connected. A fully charged battery should register at 13.4 or higher. If your battery is lower than this, we recommend that you charge it before the first use.

Note that the Black Cat will not turn on if the battery voltage is below 12.0. Also note that the Black Cat will stop collecting data once the battery falls to 11.2 volts.

We recommend that you disconnect the battery whenever the Black Cat Radar Recorder is not in the field collecting data.

*Keeping your battery properly charged is very important.* The rechargeable battery will begin to decay and become less effective if it is allowed to fall below 11.0 volts. To avoid having to replace your battery prematurely, keep it consistently charged. A well-maintained battery will last for years without having to be replaced. Refer to Chapter 5 *Battery Care* for more information on battery maintenance.

## **Before You Begin**

Before you attempt to collect important data with the Black Cat Radar Recorder we strongly recommend that you familiarize yourself with both the operation of the Black Cat Radar Recorder, and the software that is used with it, by reading all of the documentation that came with the equipment.

Whenever possible, we recommend that you perform a test study if you are new to the Black Cat Radar Recorder. This will help you become comfortable with the operation of the equipment and how the data is both collected and analyzed. This should make things easier for you when you have to do your first real study.

## **Chapter 2**

# **Site Installation**

## Installation

Before going to the site to install the Black Cat Radar Recorder, check that you have the following items from the installation kit:



You will also need a standard flat-head screwdriver to tighten the mounting clamp. \*Not Included

If you have not already cut the clamp kit band to length, you will also need tin snips. \*Not Included

Check that your laptop is fully charged, has the latest version of the TRAXPro software installed, and that the date and time on the laptop are correct. You will synchronize the Black Cat Radar Recorder's time and date to that of the laptop during setup.

## Selecting a Site

When choosing a location to install the Black Cat Radar Recorder, keep in mind that it will need to be mounted to a pole (typically a utility pole) or tree, so the site will need to have one of these available for use.

For the best results, the Black Cat Radar Recorder should be installed:

- Six to ten feet back from the road.
- At least six feet above the ground.
- At a 45 degree angle to the flow of traffic.
- Where the far side lane is no greater than 50 feet away.
- Where traffic is free flowing.

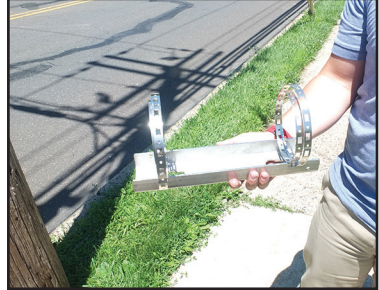
The unit should not be installed:

- At an intersection.
- Near where vehicles are likely to park.
- In a position that causes the radar head to be at an extreme angle.
- Near where pedestrians are likely to be crossing.
- Where the Radar's "view" is obstructed.

## Mounting the Black Cat Radar Recorder

Once a site has been selected, the Black Cat Radar Recorder can be easily mounted using the installation kit.

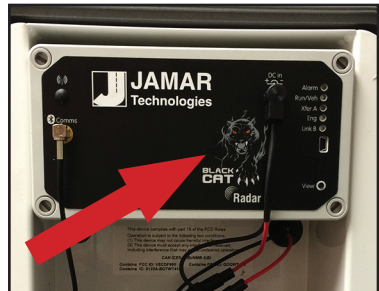
**Step #1** - Prepare the mounting bracket for installation by cutting the clamp band to the length desired with snips. For a standard utility pole installation, cut the band in half. Once the band is cut, thread it through the openings on the pole bracket.



**Step #2** - For the most accurate results, the bracket should be installed so the Black Cat Radar Recorder is facing traffic on a 45 degree angle. Once you have determined this position, wrap the bands around the pole and place the bracket.

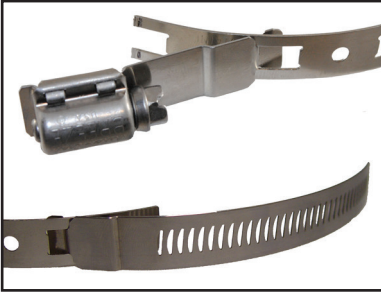


**IMPORTANT:** The area of the Black Cat Radar Recorder that you are aiming toward the road is the picture of the Black Cat, as shown in the picture here. The radar head adjusts up and down to allow you to find the best angle.

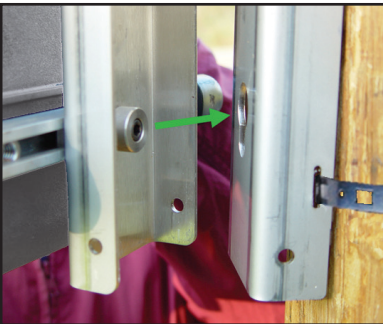




**Step #3** - Insert the fasteners into each end of the band, then engage the fasteners and tighten the clamp with a flat-head screwdriver or nut driver.



**Step #4** - Insert the pegs on the back of the Black Cat Radar Recorder's mounting bracket into the large holes of the pole mounting bracket and slide the Black Cat Radar Recorder down to secure it in place.



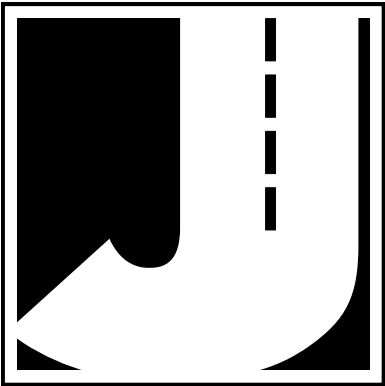
Note that it is the front of the Black Cat Radar Recorder that you are aiming toward the road at a 45 degree angle. Also note that the position of the bracket on the back of the Black Cat Radar Recorder can be slid to the left or right by loosening the center screws. This can be done with the allen wrench included with the installation kit. Moving the bracket's position can help if you need to aim the recorder around obstacles.



**Step #5** - Lock the unit into the mounting bracket. If you wish to add further security to the installation, the chain that was provided with the recorder can be wrapped around the pole through the bracket area, then locked in place.

**Step #6** - Once the Black Cat Radar Recorder has been setup using the TRAXPro software (refer to the next chapter), close and lock the lid.





## **Chapter 3**

# **Programming the Radar Head**

## Connecting the Black Cat Radar to Your Computer

There are three ways to connect the Black Cat Radar Recorder to your computer:

- Direct hardwire USB connection.
- Local wireless Bluetooth connection.
- Remote GSM modem connection (optional).

### Connecting the Black Cat Radar to Your Computer – USB Port

Once you have the Black Cat Radar Recorder installed, it needs to be programmed to record the data you want. To do this you'll need to connect a USB cable from your computer to the Black Cat's mini USB Port.

Note that **BEFORE** you connect your computer to the Black Cat for the first time, run the USB Driver Installation Program, which can be found on the TRAXPro software flash drive.

**STEP 1** – Open the case of the Black Cat Radar Recorder.



**STEP 2** – Press the *View* button to ‘wake up’ the Black Cat. The *Run/Veh* light will be on when the unit is awake. **Note that you must always ‘wake up’ the Black Cat before you connect when using the USB cable.**



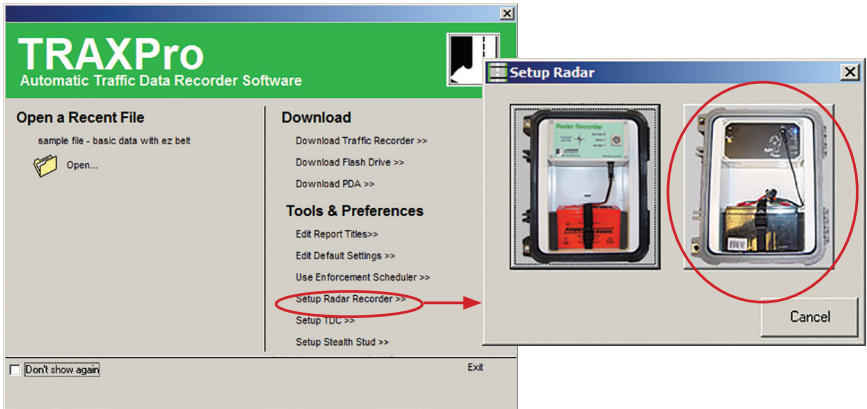
**STEP 3** – Once the Black Cat is awake, plug the USB cable into a standard USB port on your computer.



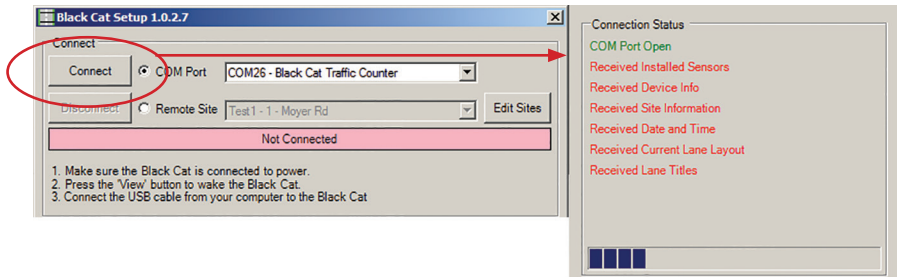
**STEP 4** – Plug the other end of the USB cable into the Mini USB port on the Black Cat. If the connection is successful the *Link B* LED will light on the Black Cat.



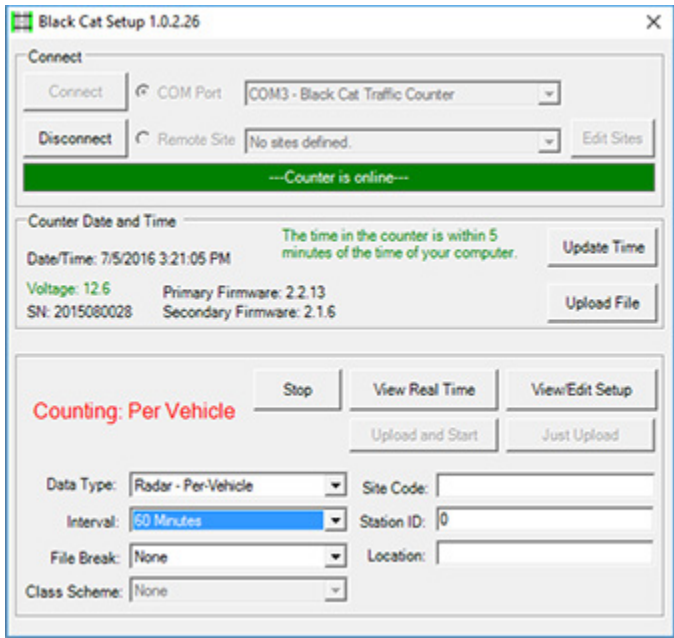
Start the TRAXPro software on your laptop and select **Setup Radar Recorder** from the Tools & Preferences section of the Quick Start screen. You'll then see a screen showing the two models of Radar Recorders. Select the Black Cat Radar Recorder on the right.



Once the Black Cat Radar Recorder Setup screen appears, you should see a port listed in the COM Port dropdown box at the top as 'Black Cat Traffic Counter'. Click the **Connect** button.



TRAXPro will attempt to connect to the Black Cat Radar Recorder and, if successful, show the current status of the unit.



Once connected, the middle of the screen will show the serial number of the Black Cat along with the firmware version and the battery voltage.

The area above this shows the current date and time in the Black Cat. You will be shown a warning that the date and time are not correct if they are not within a minute of the computer's date and time. To fix this, click the *Update Time* button and the date and time in the Black Cat will synchronize with the date and time of your computer.

The lower section will show the current counting status of the unit, either *Not Counting* if no count is in progress or *Counting...* if a count is in progress.

# Connecting the Black Cat Radar to Your Computer – Wireless Bluetooth

The Black Cat Radar Recorder has wireless Bluetooth capability which allows you to connect without a hard wire.

If you would like to use Bluetooth to communicate with the Black Cat Radar Recorder, refer to the Quick Start Guide 'Connecting Your Bluetooth Black Cat Radar Recorder' for more information on how to connect. The Quick Start Guide provides step-by-step instructions for Windows 7, 8 and 10 computers.

These guides are included with the documentation provided with your Black Cat Radar Recorder and can also be downloaded from our web site at [www.jamartech.com](http://www.jamartech.com).

**QUICK START**  
**1.0**

**For Windows 7**

## Connecting your Bluetooth Black Cat Radar Recorder

To use wireless Bluetooth to communicate with a Black Cat Radar Recorder you will need the following:

- A copy of TRAXPro v2.9.175 or later installed on your computer
- A Bluetooth enabled computer.

**Checking TRAXPro Version**  
To check the version of TRAXPro you have, start the program then go to the Help menu and select About... The Program Version should be 2.9.175 or higher. If you do not have this version, go to [www.jamartech.com](http://www.jamartech.com) to download the latest version.

**Checking your Computer for Bluetooth**  
To check if your computer is Bluetooth Enabled, access the computer's Device Manager. In Windows 7 you can get to Device Manager by right-clicking the Computer icon and selecting Properties from the menu that appears. Next click on Device Manager. In Device Manager we are looking for the presence of Bluetooth Radios.

If your computer did not come Bluetooth enabled, an aftermarket Bluetooth antenna, like the one shown to the right which plugs into a USB port, can be purchased and installed.

**Adding Your Radar Recorder as a Bluetooth Device on Your Computer**  
Once you have confirmed that you do have an active Bluetooth connection, you can add the Radar Recorder as a device. To do this, first be sure the Radar Recorder's battery is connected, which powers on the unit. Then, go to Start > Devices and Printers. In the Devices and Printers window you will want to press the Add A Device button to have your PC search for a broadcasting Radar Recorder.

**QUICK START**  
**1.0**

**For Windows 8**

## Connecting your Bluetooth Black Cat Radar Recorder

To use wireless Bluetooth to communicate with a Radar Recorder you will need the following:

- A copy of TRAXPro v2.9.175 or later installed on your computer
- A Bluetooth enabled computer.

**Checking TRAXPro Version**  
To check the version of TRAXPro you have, start the program then go to the Help menu and select About... The Program Version should be 2.9.175 or higher. If you do not have this version, go to [www.jamartech.com](http://www.jamartech.com) to download the latest version.

**Checking your Computer for Bluetooth**  
To check if your computer is Bluetooth Enabled, access the computer's Device Manager. In Windows 8 you can get to Device Manager several ways, but we will use the Windows button on the keyboard to bring up the tiles, and on the tile screen you can access nearly anything in Windows by simply beginning to type the name. So, on the tile screen simply begin typing 'Control Panel'. Once you have typed in 'Control Panel', press Enter and the Control Panel will appear.

In Control Panel, click on System. In the System window we select the link for Device Manager in the upper left of the screen. In Device Manager we are looking for the presence of Bluetooth. If it appears, then we have the Bluetooth hardware we need on the computer.

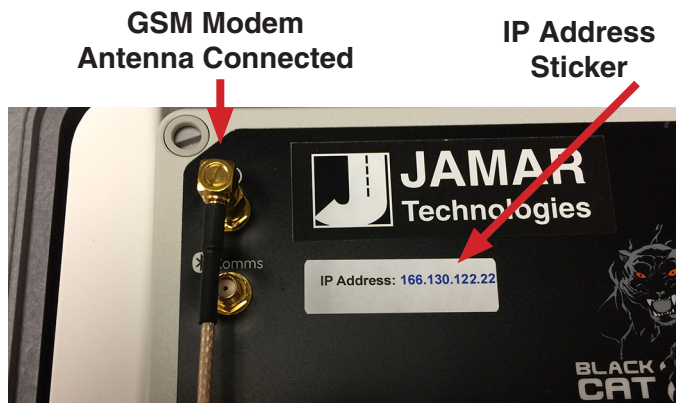
If your computer did not come Bluetooth enabled, an aftermarket Bluetooth antenna, like the one shown to the right which plugs into a USB port, can be purchased and installed.



## Connecting the Black Cat Radar to Your Computer – Remote GSM Modem

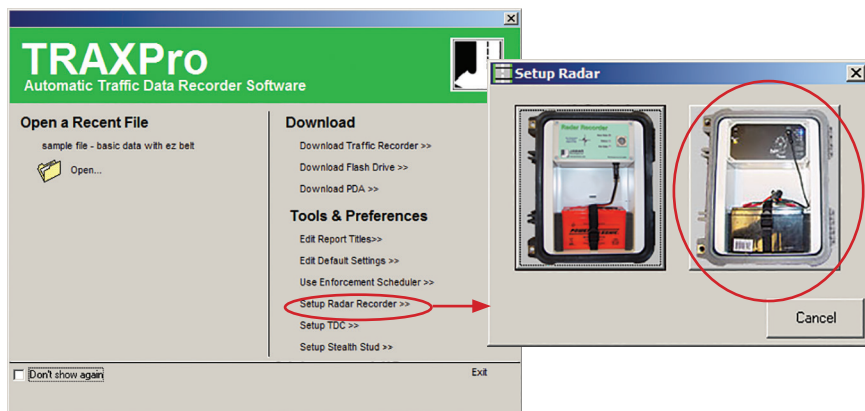
The Black Cat Radar Recorder has optional GSM modem capability which allows you to connect to a unit remotely via an Internet connection.

If your unit has the option available, you should see a sticker on the front panel showing the IP Address of the unit. You should also see the modem antenna port of the Black Cat connected to the antenna, as shown below.



To use the Remote Site feature, follow the steps below.

Start the TRAXPro software on your computer and select **Setup Radar Recorder** from the Tools & Preferences section of the Quick Start screen. You'll then see a screen showing the two models of Radar Recorders. Select the Black Cat Radar Recorder on the right.





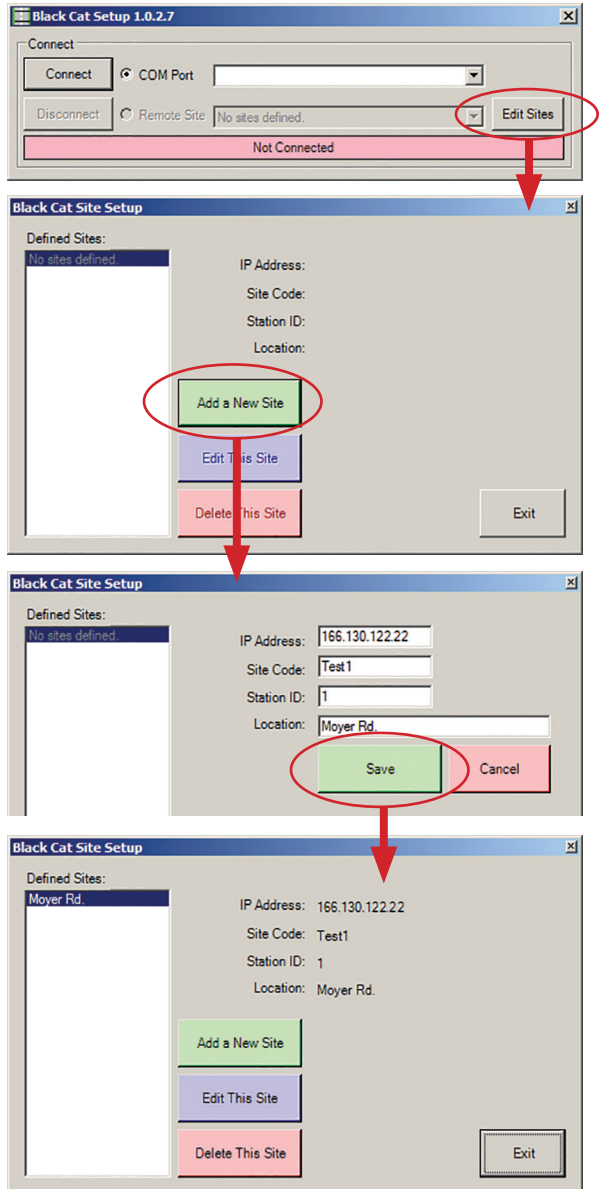
Once the Black Cat Radar Recorder Setup screen appears, you'll see options for COM Port or Remote Site connection. Notice that the Remote Site option is disabled. This is because no sites have yet been created. To connect to a Black Cat remotely, you need to create a Site Listing for the Black Cat in question. To do this, click the *Edit Sites* button and the Site Setup form will appear.

To create a new site, click the *Add a New Site* button.

First, enter the IP address of your Black Cat. You can find that on a sticker on the front of the unit. Next, enter a Site Code. This can be any alphanumeric value that helps you identify the site. Next, is an optional Station ID. This must be a numeric value. Finally, enter the location of the site.

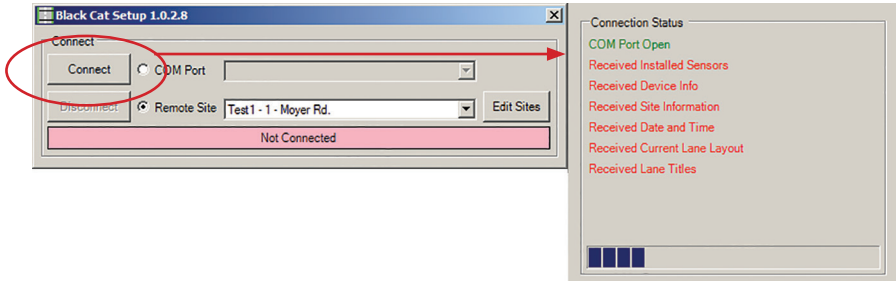
Once all this information has been entered, click the Save button and you'll see the new site listing in the box on the left.

Click Exit to return to the connection screen.

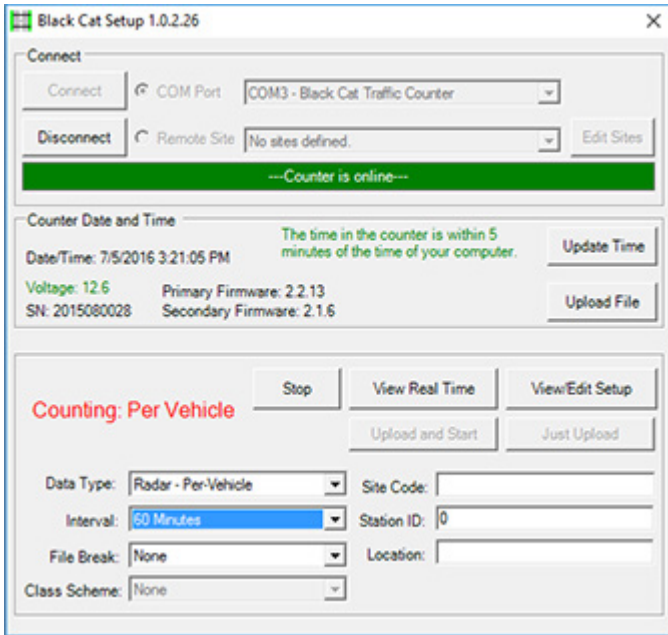


## Black Cat Radar Recorder User's Manual

Once back on the connection screen, you'll see the site you just added listed. Select the *Remote Site* radio button and then click the Connect button.



TRAXPro will attempt to connect to the Black Cat Radar Recorder and, if successful, show the current status of the unit.



Once connected, the middle of the screen will show the serial number of the Black Cat along with the firmware version and the battery voltage.

The area above this shows the current date and time in the Black Cat. You will be shown a warning that the date and time are not correct if they are

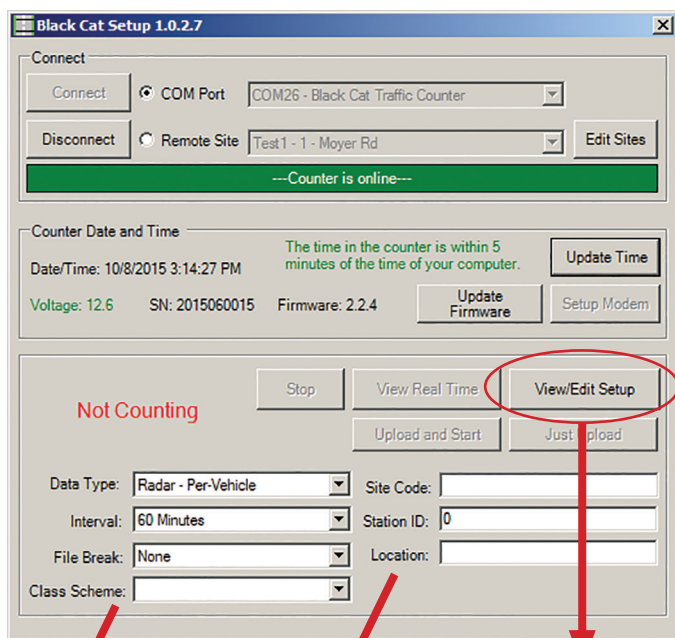
not within a minute of the computer's date and time. To fix this, click the *Update Time* button and the date and time in the Black Cat will synchronize with the date and time of your computer.

The lower section will show the current counting status of the unit, either *Not Counting* if no count is in progress or *Counting...* if a count is in progress.

## Setting Up a Study

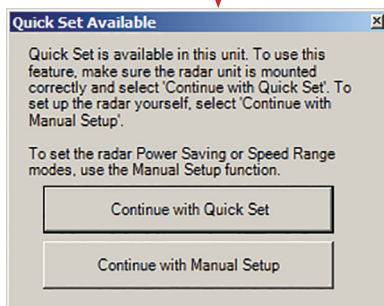
To setup a study, click the *View/Edit Setup* button in the middle of the screen. You'll then be asked if you want to do a **Manual Setup (recommended)** or use the **Quick Set** feature.

With a Manual Setup, you enter the details of how the unit is installed yourself, such as height of the unit and distance to each lane. With the Quick Set, the Black Cat will determine these values by itself.



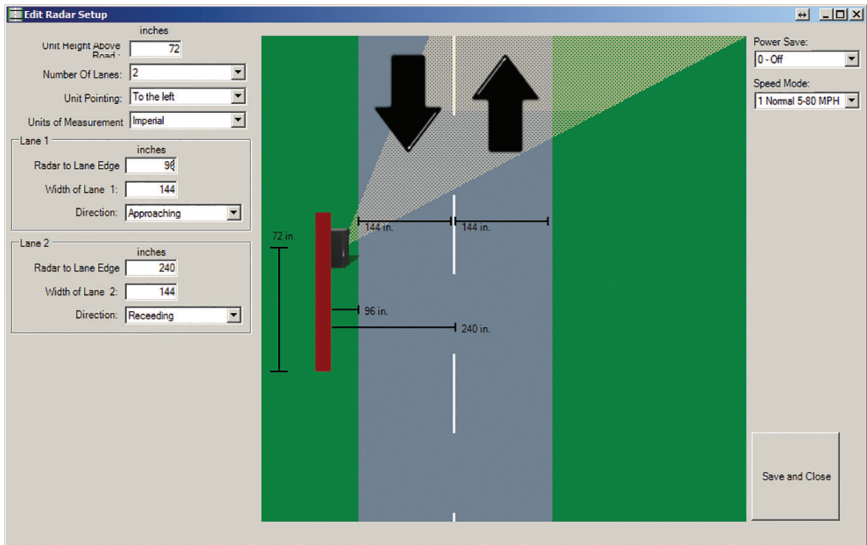
These settings will typically stay as shown.

These settings are optional, but may help you keep your data organized later.



## Manual Setup (recommended)

If you elect to do a Manual Setup of the Black Cat Radar Recorder, you will need to enter the details of how the unit is installed.



**Unit Height Above Road** – Enter, in inches, how high the Radar is mounted above the road.

**Number of Lanes** - Enter the number of lanes to be counted. (Tip: Lane 1 is the lane closest to the Radar. Lane 2 is the lane furthest from the Radar).

**Unit Pointing** – Enter which direction the Radar is pointing. As a reference, the above image shows the radar pointing to the left.

**Units of Measurements** – Select either Imperial (US) or Metric.

**Radar to Lane Edge** – Enter, in inches, the distance from the Radar to the START of each lane.

**Width of Lane** – Enter, in inches, the width of each lane.

**Direction** – Select whether the traffic in each lane is *approaching* the Radar or *receding* from the Radar. As a reference, traffic in lane 1 of the above image, is approaching the Radar.

**Power Save** – This setting can help extend the amount of days you can collect data on one battery charge. However, this may affect the accuracy of the data collection. Power Save is best left at the '0-Off' setting.

**Speed Mode** - This allows you to select the anticipated speed range for your particular roadway.

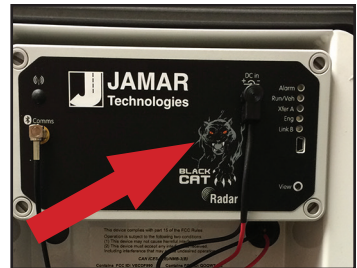
Once you have the settings you want, click the *Save & Close* button.

You will now be back on the main setup screen.

Click the **Upload and Start** button to begin a count. The unit will now be collecting data. You will see that the status (in red) will change from Not Counting, to Counting.

Click the View Real Time button. This will bring up the Real Time Monitor screen which will allow you to view and verify the accuracy of the data you are currently collecting, compared to what you are actually seeing on the road. To exit Real Time, click the Close button.

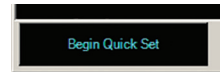
**IMPORTANT:** The area of the Black Cat Radar Recorder that you are aiming toward the road is the picture of the Black Cat, as shown in the picture here. The radar head adjusts up and down to allow you to find the best angle.



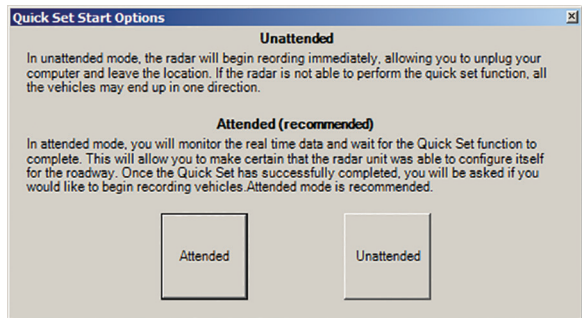
You can now close the software and disconnect from the Radar.

## Quick Set

If you elect to do a Quick Set of the Black Cat Radar Recorder, you'll be taken into the Real Time view. Click the *Begin Quick Set* button at the lower left to start the process.

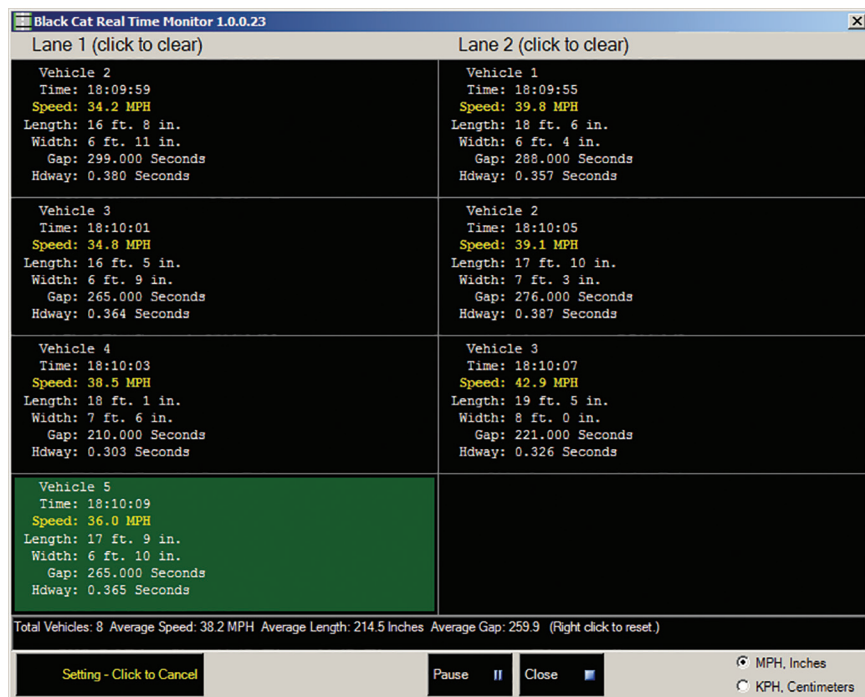


When you click the Quick Set button you'll see a message regarding the Quick Set Start Options. In the **Unattended** Mode, you can disconnect from the Radar immediately after starting Quick Set. In the **Attended** Mode (recommended), you wait until Quick Set is finished to verify its results.

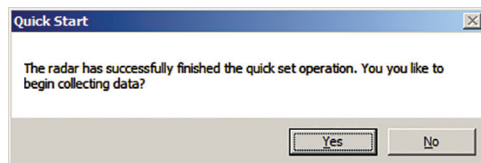


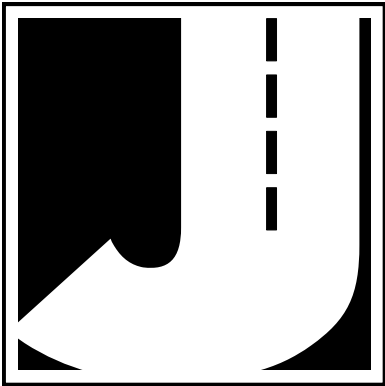
As vehicles pass the detection zone and are recorded, the Black Cat itself will figure out on its own what values to enter for lane distances, recorder height, etc.

Generally, this process takes about 20-30 vehicles per lane. You will see the vehicles recorded in each lane as this process occurs.



Once the process completes successfully, you will see a confirmation message asking if you want to start the count. Select Yes. The unit is now set up. You can now close the software and disconnect from the Radar.







## **Chapter 4**

# **Downloading Data**

## Downloading Data

Once the data collection is complete, you can retrieve the data from the Black Cat Radar Recorder using your computer and the TRAXPro software. To do this you will need to connect the Radar to the TRAXPro software, using one of the three methods found in Chapter 3 of this manual.

**However, instead of selecting Setup Radar Recorder, as referenced in Chapter 3, you will now select Download Traffic Recorder.**

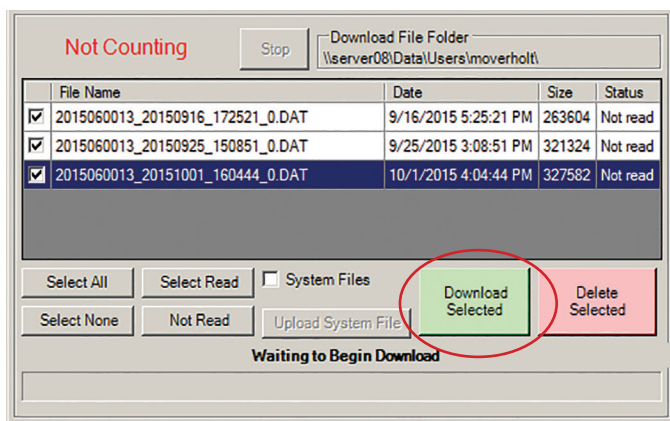
Next, select the Black Cat Recorder.



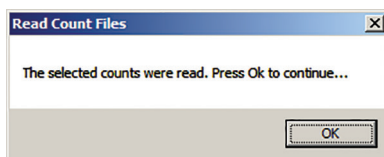


## Black Cat Radar Recorder User's Manual

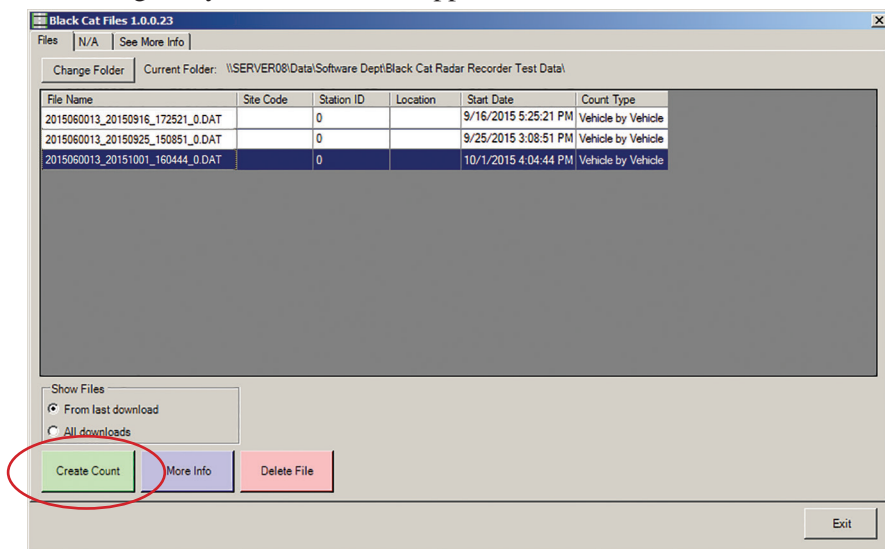
Check off any of the surveys you want to download, then click the *Download Selected* button (Note the Download File Folder location and change it if needed). The status message at the bottom of the screen will show 'Download in Progress' as the data is being downloaded to the computer.

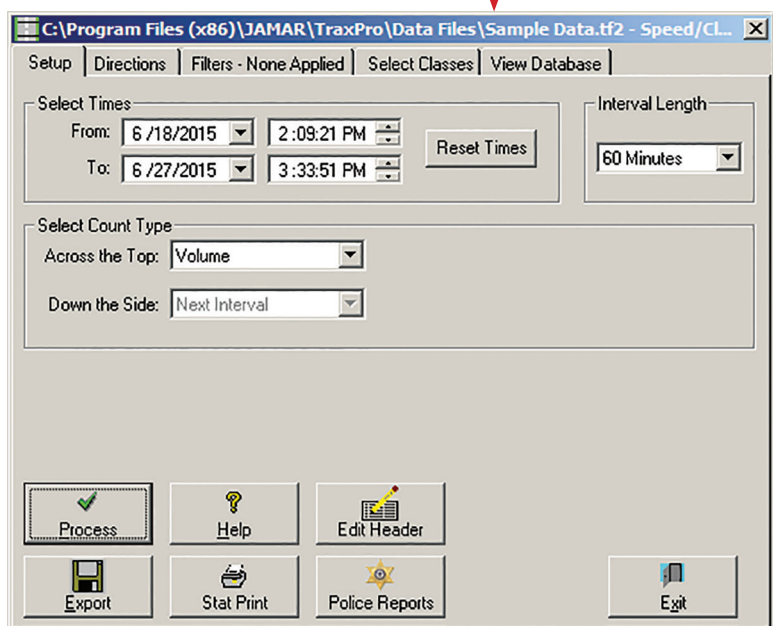
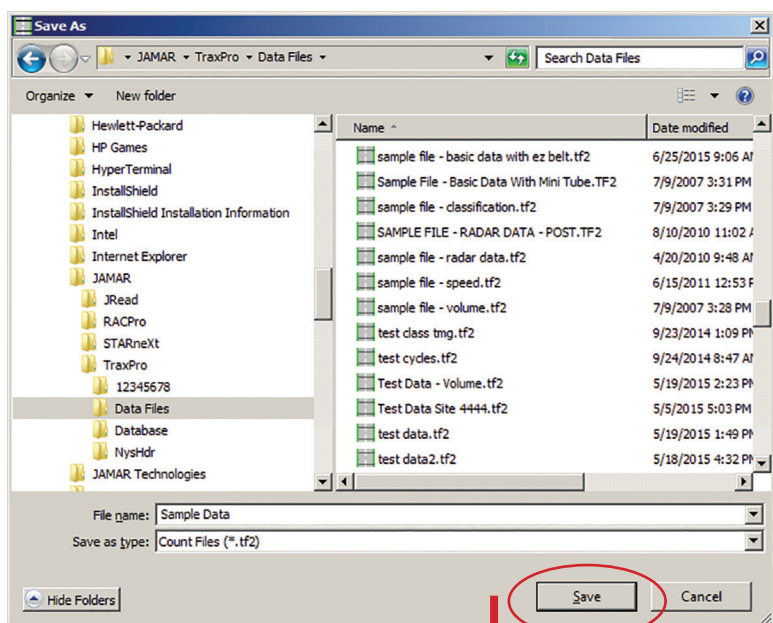


Once the download has completed, you'll see a message that the selected counts were read.

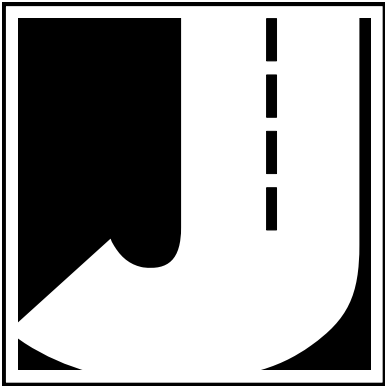


You'll then see a list of files to choose from. Click the *Create Count* button and you'll be prompted to assign a file name to the data file. Once the name has been assigned, your data file will appear on the screen.





From this point, refer to the TRAXPro manual for information on how to process the files and produce reports.



## **Chapter 5**

# **Battery Care**

## Maintaining Your Battery

The following information regarding battery care is furnished to assist you in the use and maintenance of rechargeable batteries. Battery life is dependent on the user's preventative maintenance procedures. Establish regular routines for all of your batteries regardless of their usage.

Charging a battery is very important. Your Black Cat Radar Recorder depends on a fully charged battery to operate efficiently and to produce reliable and correct data. Batteries should not be allowed to sit in a discharged state for any length of time. Once the battery discharges below 11.0 volts, damage to the cells has already begun. Symptoms of a damaged battery are:

1. The battery will not charge to its full capacity of 13.4 volts or higher.
2. The battery will only hold a charge for a short time under load conditions.
3. The battery will discharge faster than normal during storage under no load.

With this in mind, recharge the battery to its highest potential (normally from 13.4 volts and up) once it has fallen between 11.2 and 11.5 volts. The battery can be charged using the BatteryMINDER Battery Charger that came with the unit.

### Battery Charging

Monitor your battery voltage by checking the *Black Cat Setup* screen of the



TRAXPro software. We recommend that the battery be recharged to its highest charge level (usually 13.4 volts and above) once it discharges to between 11.2 & 11.5 volts. A good battery may charge as high as 13.6 volts or better. A defective battery may not charge any higher than 13.0 volts after a reasonable charge time. Charge time will vary with the level of the battery voltage. Usually, a battery of 11.2 volts can be charged to its highest potential in 12 hours or less.

To charge the battery, first remove it from the Black Cat Radar Recorder.



Plug the BatteryMINDER Battery Charger (shown below) into an outlet, then connect it to the terminals of the battery.



\*\*\*\*\*CAUTION\*\*\*\*\*

**Never plug a charger into a battery unless you are absolutely sure of the voltage output and polarity.**

While the battery is charging, the charging LED on the BatteryMINDER will be flashing. Once the charge is complete, the light will be solid green.

After a battery has been charged, allow it to sit for several hours then check the voltage to determine if the battery kept its charge. Some reduction in voltage is acceptable. However, if the battery falls below 13.0 volts, recharge it for a longer period of time. If this does not improve the charge, the battery is most likely defective and should be replaced.

**Monitor your battery voltages frequently, charging when necessary, and you will extend the life of your battery.**

## **Additional Notes**

- **Do not** expose the battery to moisture or rain.
- **Do not** drop, hit or abuse the battery — it may break and expose the contents, which are highly corrosive.
- **Do not** short circuit battery terminals. Some batteries are protected with self-resetting fuses, but short circuits may still cause severe damage to the battery.
- It is normal for a battery to become warm to the touch during charging.

- It is normal for a battery to “self discharge” during prolonged storage. Always fully charge a battery prior to storage. While in storage, periodically check the batteries with a voltmeter to ensure they have not discharged below a level that may cause permanent damage.
- Always store in a cool, dry location.
- Keep batteries away from fire and do not incinerate — they may explode.
- Under no circumstances should you attempt to open the battery case.
- Always observe polarity when connecting your battery to any electronic/electrical device. If your device is not protected from improper battery hookup, you may cause severe damage to the electronic circuitry. The positive terminal may be indicated by a plus (+) sign or red mark. The negative terminal may be indicated by a minus (-) sign or black mark.
- The effectiveness of the solar panel can be reduced if it is dirty or scratched up. For best results, keep the panel clean and in good condition.

