

STARneXt

Software for Traffic Analysis and Reporting

User's Manual



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If you have any questions about the use of STARnext, please call the following number:

800-776-0940

Monday – Friday 8:00 AM to 5:00 PM Eastern time

You may also contact us by e-mail at:

support@jamartech.com

For more information on our products, the latest news in product development, and to download software updates, visit our web site at:

www.jamartech.com

For information on all known issues with STARnext, go to:

www.jamartech.com/STARnextsupport.html

Address any correspondence to:

**JAMAR Technologies, Inc.
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Chapter 1

Introduction and Installation



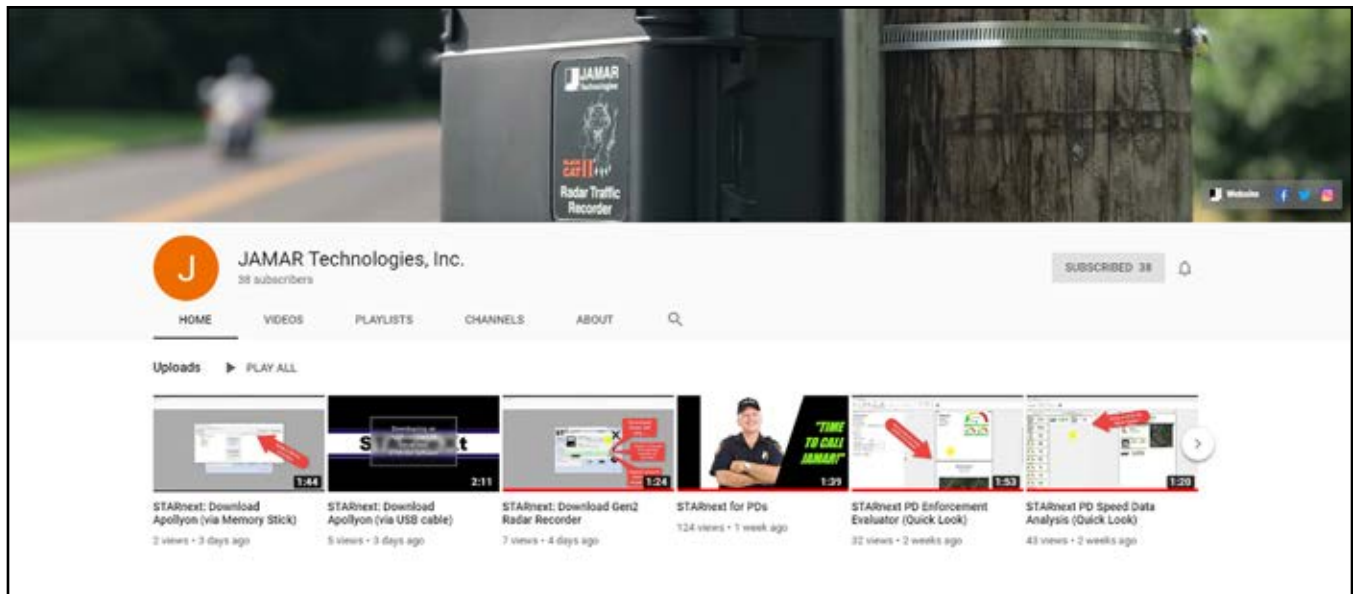
Introduction

What is STARnext?

Welcome to STARnext, a JAMAR Technologies software program designed to process traffic data collected with JAMAR automatic traffic recorders. This program will enable you to quickly and easily analyze your data and produce comprehensive reports.

Video Tutorial Demos

If you are new to STARnext, an excellent place to start is the video tutorial demos that can be found on the JAMAR YouTube Channel. Go to YouTube and search for 'JAMAR Technologies'.



Recommended Computer Requirements

- Windows 10.
- 64 Megabytes of RAM.
- 10 Megabytes of free space on your hard disk.
- Minimum screen resolution of 1024 x 768

Supported Data Collectors

STARnext supports all TRAX road tube traffic data recorders, including the current TRAX Apollyon and TRAX Apollyon Plus II recorders. It also supports the Gen1\Gen2 Radar Recorder, Black CAT III Radar Recorder and Law Enforcement Radar.

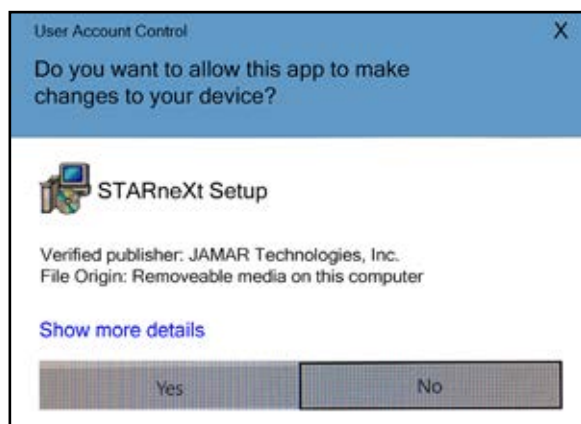
Software Updates & Support

Updated versions of JAMAR software are released periodically and are posted on the JAMAR web site. Licensed owners of STARnext may download updates to the program to make sure they always have the latest version of the software on their computer. To download the latest version of STARnext, go to www.jamartech.com and then select Downloads from the list of options.

If you encounter any problems while using the program, or have any questions on specific operations, refer first to this manual and the program's built-in Help system. For up to the minute information on all known issues with the program, refer to the STARnext support web page at: www.jamartech.com/STARnextsupport

Installing STARnext

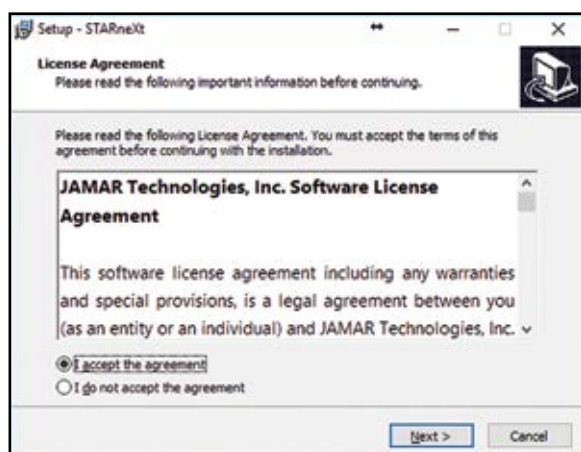
If you have purchased a license for STARnext, you will receive a flash drive that contains the installation file for the program.



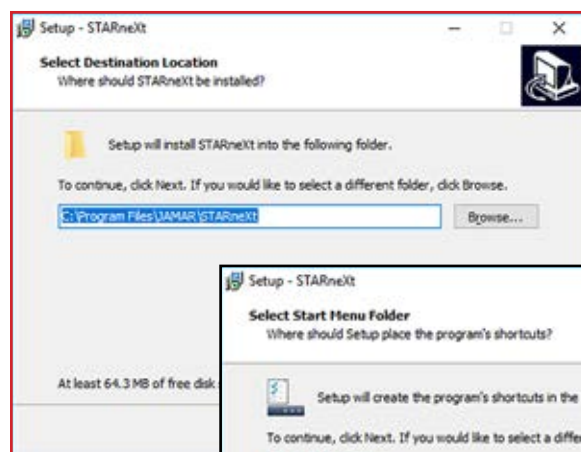
Note that updated versions of STARnext are posted periodically on the JAMAR web site at www.jamartech.com.

Begin the installation of STARnext on your computer by placing the flash drive into a USB port on your computer. Double click on the installation file and the install will begin.

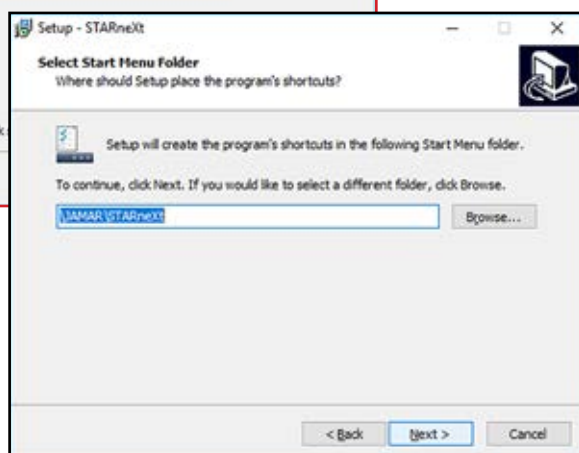
When you first start the installation, the Windows *User Account Control* will appear, asking if you want to let STARnext make changes to your computer. Click **Yes** to proceed.



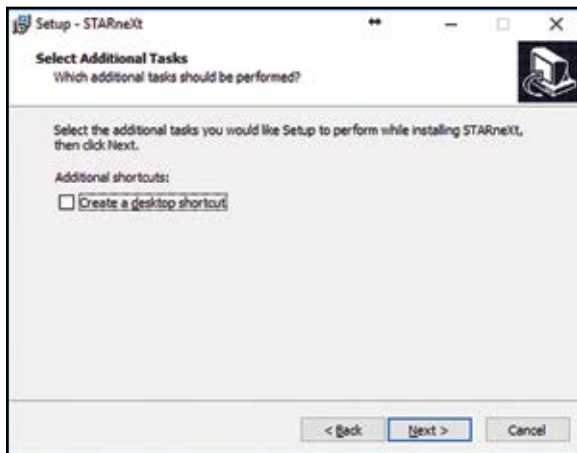
The *License Agreement* screen allows you to review the software license for the program. You must accept the agreement in order to proceed with the installation. If you do not accept the agreement, the program must be returned to JAMAR. If you agree to the license, select *I accept the agreement* and then click **Next**.



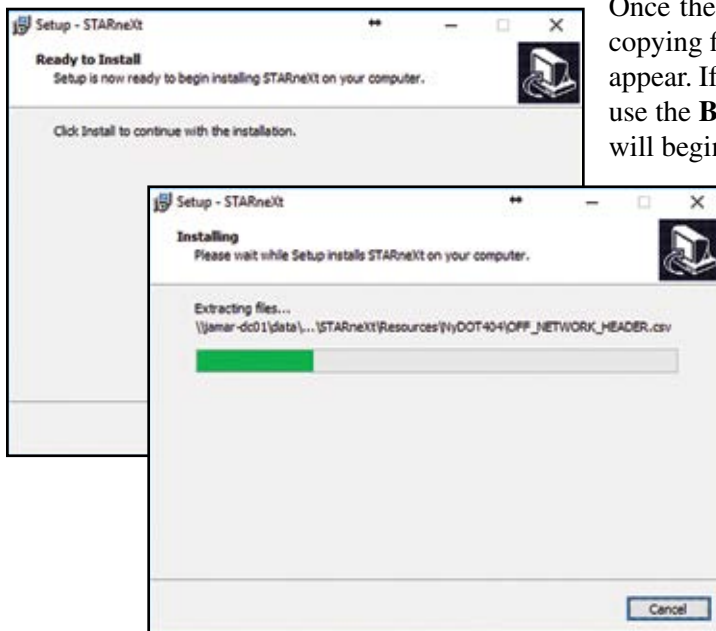
The *Select Destination Location* screen is used to select where the program will be installed. The default location is C:\Program Files\JAMAR\STARnext. Once the directory has been set, click **Next**.



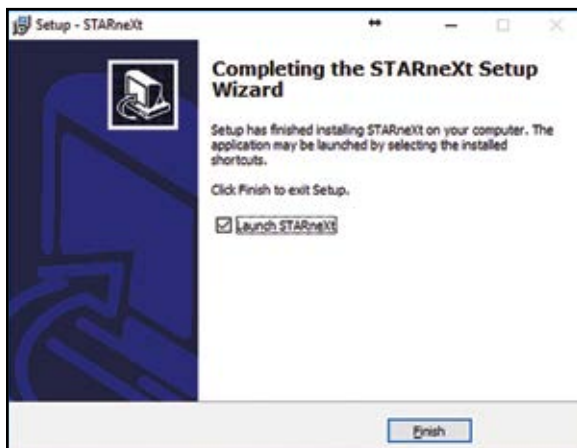
The *Select Start Menu Folder* screen is used to select what folder the program's shortcuts will be stored in. The default is JAMAR\Starnext. To accept this, click **Next**.



The *Select Additional Tasks* screen allows you to choose if you want to add a desktop shortcut for STARnext. Click **Next** to proceed



Once the Installation program has enough information to start copying files onto the computer, the *Ready to Install* screen will appear. If you would like to change anything before proceeding, use the **Back** button. Otherwise, click **Next** and the installation will begin.



After the program files have been copied onto the computer, you'll see a confirmation screen that the setup is complete

You may be prompted to Restart your computer at this point. If you are, be sure to restart before attempting to use STARnext.

You are also given the option to start STARnext immediately, click **Finish** and STARnext will start.

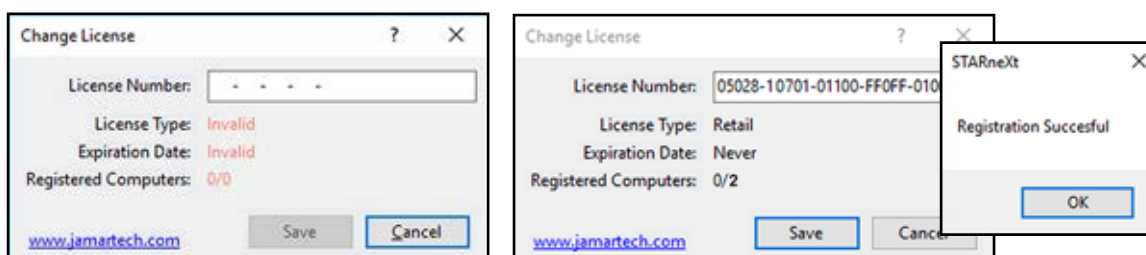
STARnext Licensing

The first time you run STARnext on a computer, you will be prompted to enter your serial number for the program. The serial number is a 25-digit number that is included with the documentation for your order.

Once you enter the number, STARnext will verify it against its cloud-based database and update the *License Type* and *Expiration Date* accordingly. License Types are either Full or Subscription. Subscription licenses will have an expiration date listed. Note that an Internet connection is required for STARnext to verify the license information.

Registered Computers shows how many computers *have already been registered* for this serial number. For example, 0/2 means no computers have yet been registered and there are two available registrations. *Registration Status* shows the registration status of the current computer. It will be either Not Registered or Registered.

The Register button is disabled until a valid serial number is entered. It is also disabled if the limit has been reached on the amount of Registered Computers for the license. Contact JAMAR if you need to add to your current license.

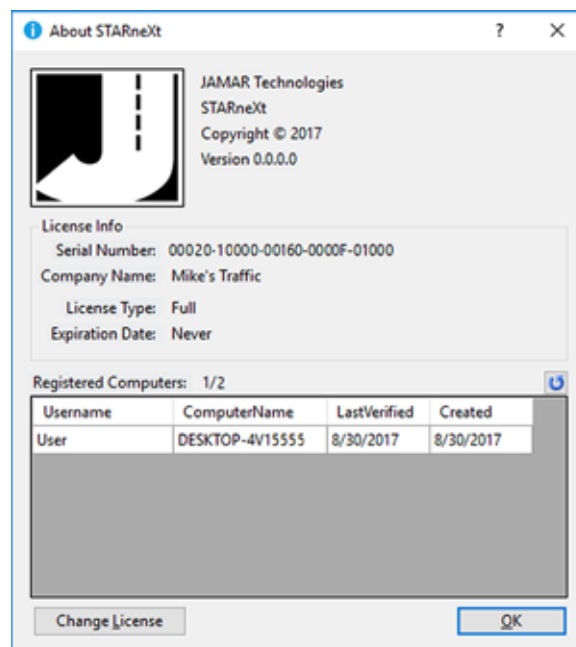


Note that after the software is installed, should you wish to check your license status you can go to the File > About menu. This will bring up the screen shown here.

The *License Info* field shows the current license information, including the Serial number, Company Name, License Type and Expiration Date.

The *Registered Computers* field list how many computers have been registered out of the amount available to be registered. For example, if your license is for 2 users and 1 has been registered you would see 1/2.

The table shows all registered computers, including Username, Computer Name, the date the registration was created and the date it was Last Verified.



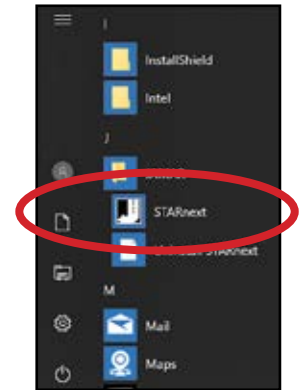
Note that the program must be able to verify the registration via Internet connection at least once every 30 days.

Running STARnext

Like most Windows programs, there are several ways you can run the software. Here are two:

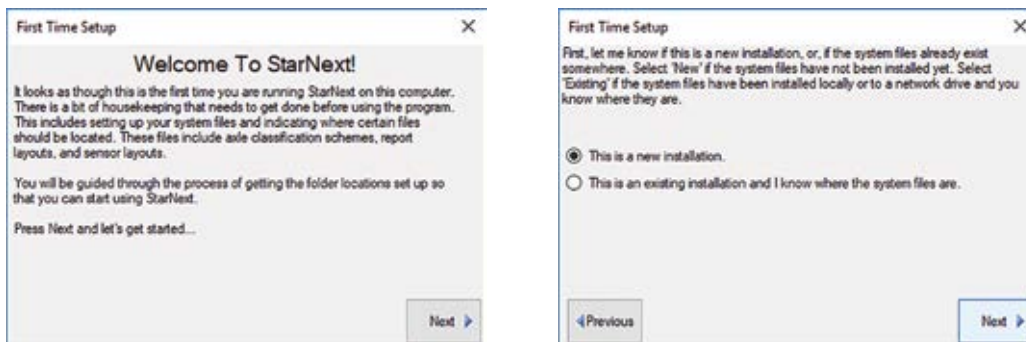
1– Open an Explorer window (*right click on My Computer and select Explore*) and find the STARnext.exe file, which is probably in the *C:\Program Files\Jamar\STARnext* folder. Double click on the file **STARnext.exe** and the program will run.

2 – Click the Windows icon on your Desktop and in the list of installed Programs navigate to the entry for **JAMAR**. Under JAMAR you will see the entry for **STARnext**. Click on this to start the program.

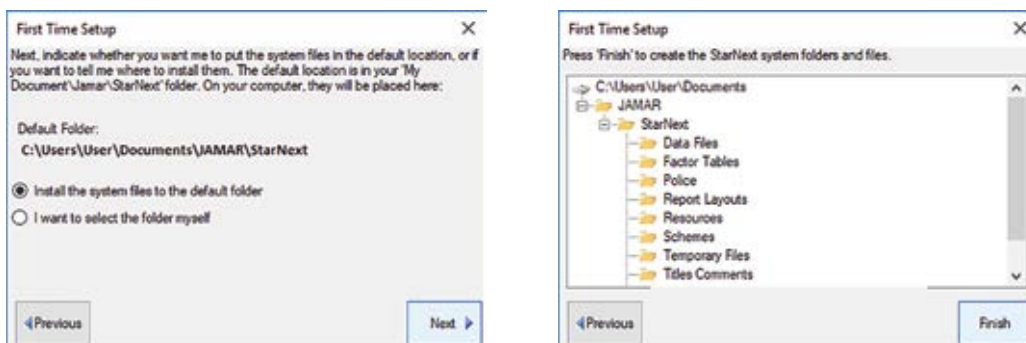


First Time Setup

The first time you run STARnext on a computer you will be prompted to select some of the initial settings. This is done through the First Time Setup Wizard.



On the first screen of the wizard, click the *Next* button. You're then asked if this is a new installation. If it is, select the first option *This is a new installation* then click *Next*.



You're then asked where you want the systems files for the program installed. The default location is the *My Documents\JAMAR\STARnext* folder. We recommend keeping this as the location. Click *Next* and you'll be shown what folders are going to be created. Click *Finish* to complete the wizard and the program will then launch.

Chapter 2

Types of Data Collection & Data Flow



Types of Data Collection

One of the features of JAMAR data collectors is the ability to collect data in several different formats. Depending on the model of unit you have purchased, data can be collected in Axle Time Stamp format, Per Vehicle format, Binned format, or Volume Only format.

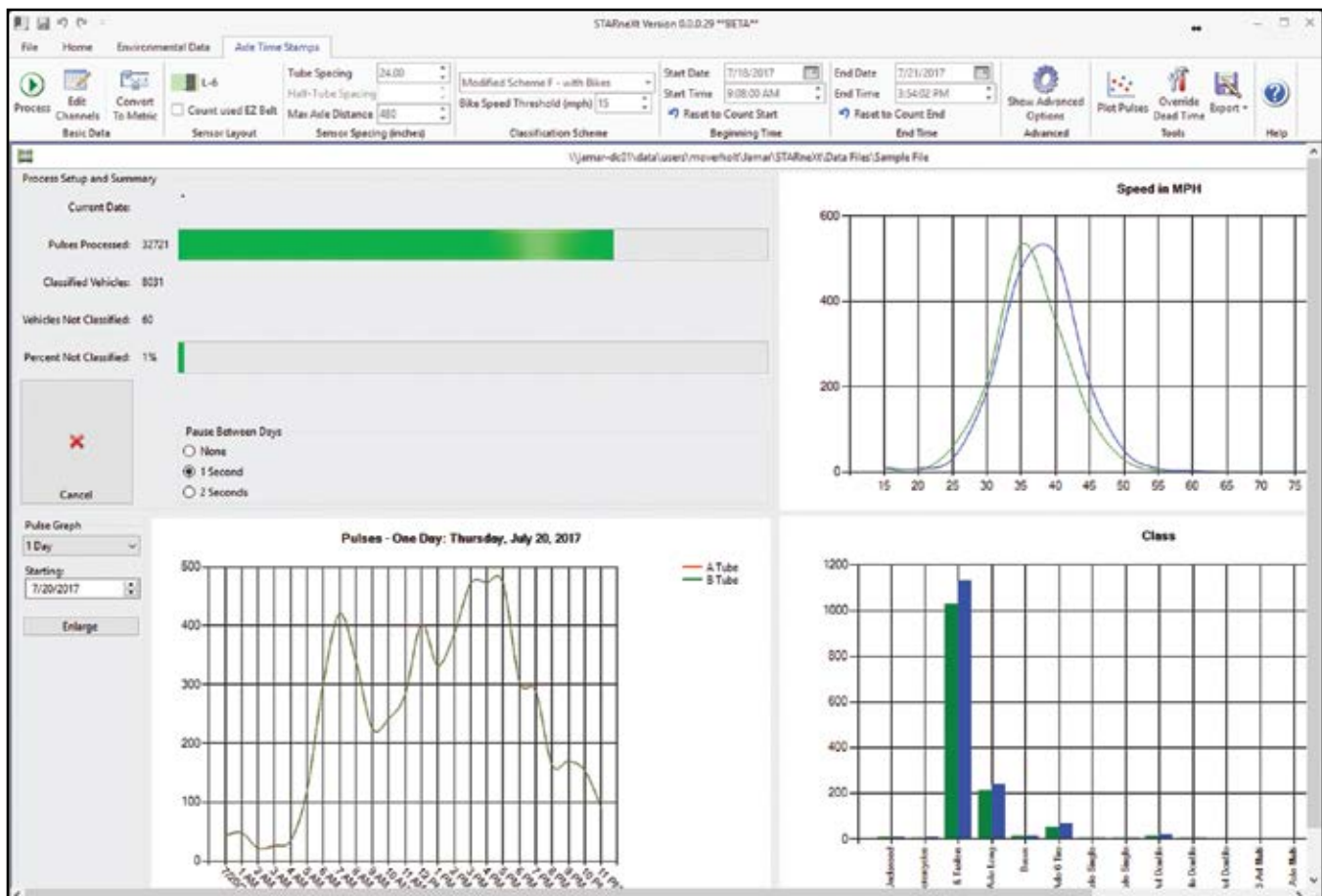
Note that these formats are often related to each other. For example, Axle Time Stamp data is processed by the software into Per Vehicle data, which in turn can be processed into Binned or Volume Only data. How these modes differ is described below.

Axle Time Stamp

Axle Time Stamp data is also known as *raw data* or *basic data*. In this format, the traffic recorder marks every sensor activation with a time stamp of when it occurs. For example, imagine you are using two road tubes spaced two feet apart to record traffic, and a passenger car comes along. When the car crosses over the tubes, the recorder marks the time the wheels of the first axle stuck each tube and the time the wheels of the second axle stuck each tube. The recorder does not know a passenger car just passed, it simply knows that four time stamps were recorded (first axle first tube, first axle second tube, second axle first tube, second axle second tube). It is left to STARnext to formulate these time stamps into the data that you will actually work with and produce reports from.

The **main advantage** of axle time stamp data is its flexibility. Since the data is stored on an individual axle basis, it can be processed into any form of data STARnext handles, including volume, class, speed, gap, length and following distance. Its flexibility also allows you to use any scheme for classification, speed, etc. that you choose.

You also have much greater diagnostic capability with axle time stamp data. If there was a problem with a tube during the data collection it is easy to see, and you can correct some problems that may have occurred with the layout in the field.



The **main disadvantage** of axle time stamp data is that since every axle in a study has to be recorded, axle time stamp data files can be very large. Also, since the recorder itself doesn't know any specific information on the vehicles being recorded, when the data is being collected the display of the recorder only shows asterisks (*) when a strike occurs. It does not list class, speed, etc.

Axle time stamp data is the recommended format for data collection with TRAX data recorders.

Per Vehicle

Per Vehicle data is also known as vehicle-by-vehicle data. In this format, the traffic recorder stores information for every vehicle in the study on an individual basis. This includes the vehicle's speed, class/length and gap from previous vehicle. For example, imagine you have set up a Radar Recorder to record Per Vehicle data. When a passenger car comes along and passes through the detection zone, the recorder notes its speed, its length and the gap from the previous vehicle. This is then stored in memory and the recorder looks for the next vehicle. Once the data has been downloaded, you can produce reports for speed, length, gap and volume in STARnext. You can also use different speed schemes when processing the data.

The **main advantage** of per vehicle data is that you can process the data into several forms of data, including volume, length, speed and gap. And, since the recorder itself determines this information, when the data is being collected the recorder shows it on the display.

The **main disadvantage** of per vehicle data is that, like axle time stamp data, its data files can be very large.

Per Vehicle data is the recommended format for data collection with the Radar Recorder and Black CAT.

The screenshot shows the STARnext software interface. The 'Per Vehicle Records' tab is selected and highlighted with a red circle. The interface includes a menu bar with options like File, Home, Environmental Data, Axle Time Stamps, and Per Vehicle Records. Below the menu bar is a toolbar with various icons for data processing. The main area displays a data table with the following columns: #, Time, Channel, Speed (MPH), Class, Class Spec, Gap, Headway, Follow Dist. (inches), and Length (inches). The table contains 35 rows of data, starting with a timestamp of 7/18/2017 9:10:52 AM. The 'Per Vehicle Records' tab is also highlighted in the left sidebar.

#	Time	Channel	Speed (MPH)	Class	Class Spec	Gap	Headway	Follow Dist. (inches)	Length (inches)
1	7/18/2017 9:10:52 AM	1	0.0	0	0	172.9	172.9	0.0	0.0
2	7/18/2017 9:11:50 AM	1	0.0	0	0	18.3	18.1	0.0	0.0
3	7/18/2017 9:12:01 AM	2	40.5	2	2	241.7	241.7	172486.6	114.0
4	7/18/2017 9:12:09 AM	2	42.2	2	2	1.8	2.0	1321.2	110.0
5	7/18/2017 9:12:09 AM	2	40.1	3	3	5.5	5.7	3909.1	120.0
6	7/18/2017 9:12:28 AM	2	39.1	2	2	18.9	19.1	12994.0	113.0
7	7/18/2017 9:13:02 AM	2	33.8	2	2	34.2	34.4	20946.5	116.0
8	7/18/2017 9:13:14 AM	2	42.6	2	2	11.1	11.4	8239.2	117.0
9	7/18/2017 9:13:37 AM	2	27.6	5	4	23.5	23.6	11380.1	159.0
10	7/18/2017 9:13:41 AM	2	36.4	2	2	3.2	3.6	2049.4	112.0
11	7/18/2017 9:13:44 AM	2	36.9	2	2	2.6	2.8	1653.1	112.0
12	7/18/2017 9:14:34 AM	2	34.5	2	2	50.4	50.6	39607.8	114.0
13	7/18/2017 9:16:45 AM	1	31.0	2	2	334.8	335.0	162633.7	112.0
14	7/18/2017 9:16:46 AM	2	35.7	2	2	131.7	131.9	82631.8	118.0
15	7/18/2017 9:16:53 AM	2	38.3	2	2	6.9	7.2	4795.4	102.0
16	7/18/2017 9:16:56 AM	2	35.6	2	2	2.9	3.0	1795.1	105.0
17	7/18/2017 9:17:13 AM	1	26.8	2	2	27.2	27.4	12763.0	114.0
18	7/18/2017 9:17:18 AM	1	6.7	14	0	5.3	5.6	897.8	41.0
19	7/18/2017 9:17:53 AM	2	29.2	3	3	56.8	57.0	29154.3	132.0
20	7/18/2017 9:18:37 AM	2	30.9	2	2	45.7	44.0	23797.5	117.0
21	7/18/2017 9:19:05 AM	1	23.5	3	3	106.3	106.7	44033.2	127.0
22	7/18/2017 9:21:02 AM	2	25.1	2	2	144.6	144.9	63918.1	102.0
23	7/18/2017 9:21:36 AM	2	35.1	3	3	33.4	33.7	20628.8	143.0
24	7/18/2017 9:23:02 AM	1	40.0	3	3	236.0	236.4	166621.0	121.0
25	7/18/2017 9:24:25 AM	2	32.9	2	2	168.5	168.8	97506.6	104.0
26	7/18/2017 9:25:11 AM	2	35.7	2	2	45.6	45.8	21810.8	95.0
27	7/18/2017 9:25:28 AM	1	27.8	5	4	146.7	146.9	71700.5	148.0
28	7/18/2017 9:25:33 AM	1	26.6	5	4	4.4	4.8	2076.7	148.0
29	7/18/2017 9:25:37 AM	2	35.7	3	3	26.4	26.6	16611.3	123.0
30	7/18/2017 9:26:39 AM	2	35.0	5	4	61.1	61.4	37614.5	156.0
31	7/18/2017 9:26:42 AM	2	38.4	2	2	3.3	3.6	2218.3	109.0
32	7/18/2017 9:27:36 AM	1	38.9	3	3	122.4	122.8	83768.0	131.0
33	7/18/2017 9:27:50 AM	2	34.1	2	2	67.5	67.7	40536.1	94.0
34	7/18/2017 9:27:56 AM	1	44.9	3	3	19.6	19.8	15457.8	132.0
35	7/18/2017 9:28:10 AM	1	38.1	3	2	13.8	14.0	4214.7	104.0

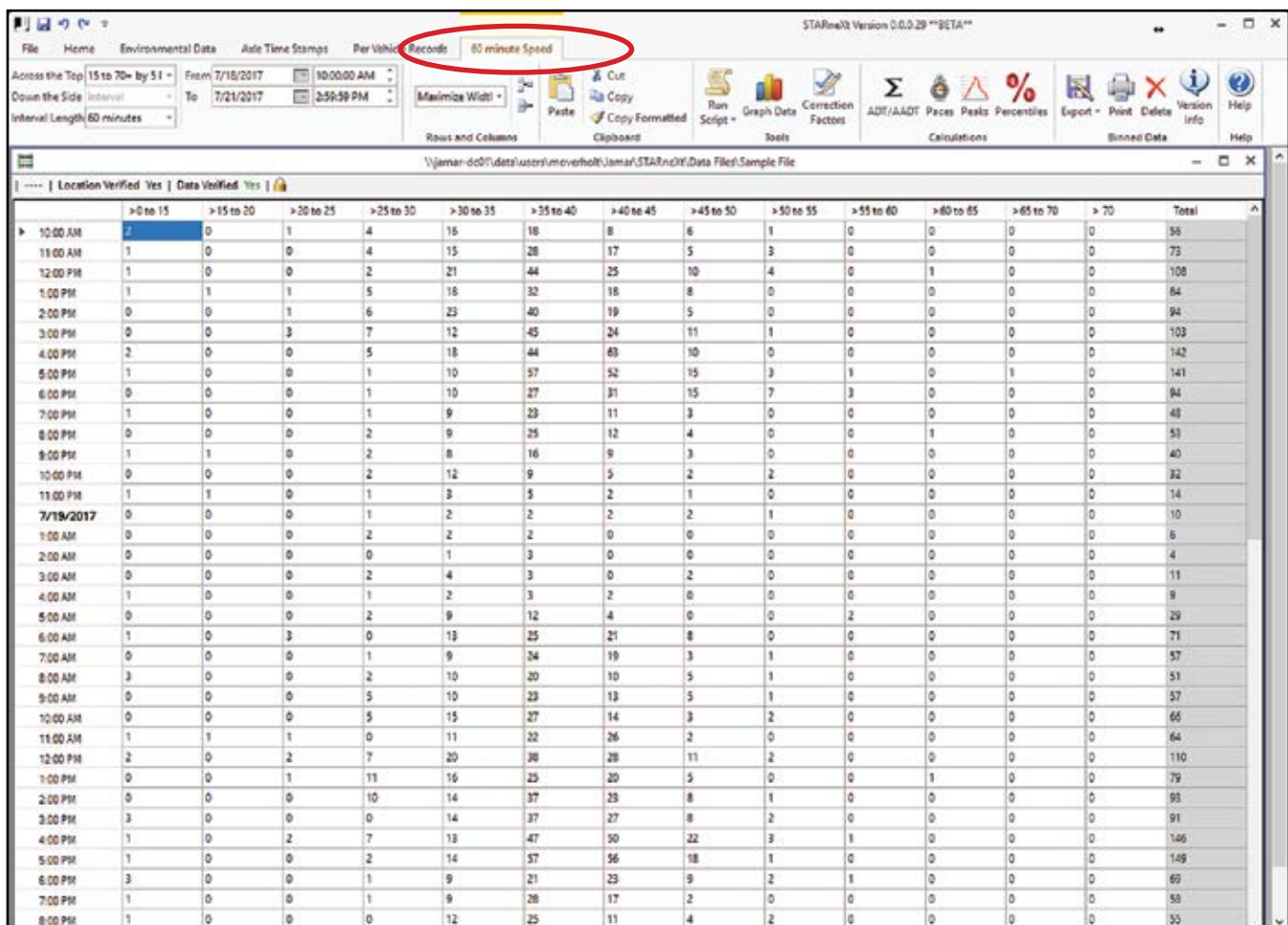
Binned Class, Speed or Gap

Binned data is also known as Class\Speed\Gap data. In this format, the traffic recorder sorts the data it records for each vehicle into predefined categories, or 'bins'. This includes the vehicle's speed, class\length and gap from previous vehicle. With binned data, when a passenger car comes along and crosses through the detection zone, the recorder notes the vehicle's speed, its class\length and the gap from the previous vehicle. However, rather than storing this data, the recorder sorts it into a specific category and holds the data until a specific interval length has passed (usually 15 or 60 minutes). During this time, the recorder is sorting data from other vehicles as well.

When the data is downloaded from the data recorder, separate files are created for the speed data, the class\length data and the gap data.

The **main advantage** of binned data is that the recorder does most of the work so when you download the data it is essentially ready to print.

The **main disadvantage** of binned data is that the data is stored in a rigid format, so if there was a problem with the data collection, there is little that can be done to salvage the data.



STARnext Version 0.0.0.29 "BETA"

File Home Environmental Data Audit Time Stamps Per Vehicle **Records** 60 minute Speed

Across the Top: 15 to 70+ by 51 From: 7/18/2017 To: 7/21/2017 10:00:00 AM 2:59:59 PM

Down the Side: Interval: Interval Length: 60 minutes

Maximize Width

Clipboard: Cut Copy Copy Formatted Paste

Tools: Run Script Graph Data Correction Factors

Calculations: ADT/AADT Paces Peaks Percentiles

Binned Data: Export Print Delete Version Info Help

V:\jamar-dc01\data\users\moverholt\jamar\STARnext\Data File\Sample File

	>0 to 15	>15 to 20	>20 to 25	>25 to 30	>30 to 35	>35 to 40	>40 to 45	>45 to 50	>50 to 55	>55 to 60	>60 to 65	>65 to 70	>70	Total
10:00 AM	1	0	1	4	15	18	8	6	1	0	0	0	0	56
11:00 AM	1	0	0	4	15	28	17	5	3	0	0	0	0	73
12:00 PM	1	0	0	2	21	44	25	10	4	0	1	0	0	108
1:00 PM	1	1	1	5	18	32	18	8	0	0	0	0	0	84
2:00 PM	0	0	1	6	23	40	19	5	0	0	0	0	0	94
3:00 PM	0	0	3	7	12	45	24	11	1	0	0	0	0	103
4:00 PM	2	0	0	5	18	44	43	10	0	0	0	0	0	142
5:00 PM	1	0	0	1	10	57	52	15	3	1	0	1	0	141
6:00 PM	0	0	0	1	10	27	31	15	7	3	0	0	0	94
7:00 PM	1	0	0	1	9	23	11	3	0	0	0	0	0	48
8:00 PM	0	0	0	2	9	25	12	4	0	0	1	0	0	53
9:00 PM	1	1	0	2	8	16	9	3	0	0	0	0	0	40
10:00 PM	0	0	0	2	12	9	5	2	2	0	0	0	0	32
11:00 PM	1	1	0	1	3	5	2	1	0	0	0	0	0	14
7/19/2017	0	0	0	1	2	2	2	2	1	0	0	0	0	10
1:00 AM	0	0	0	2	2	2	0	0	0	0	0	0	0	6
2:00 AM	0	0	0	0	1	3	0	0	0	0	0	0	0	4
3:00 AM	0	0	0	2	4	3	0	2	0	0	0	0	0	11
4:00 AM	1	0	0	1	2	3	2	0	0	0	0	0	0	9
5:00 AM	0	0	0	2	9	12	4	0	0	2	0	0	0	29
6:00 AM	1	0	3	0	13	25	21	8	0	0	0	0	0	71
7:00 AM	0	0	0	1	9	24	19	3	1	0	0	0	0	57
8:00 AM	3	0	0	2	10	20	10	5	1	0	0	0	0	51
9:00 AM	0	0	0	5	10	23	13	5	1	0	0	0	0	57
10:00 AM	0	0	0	5	15	27	14	3	2	0	0	0	0	66
11:00 AM	1	1	1	0	11	22	26	2	0	0	0	0	0	64
12:00 PM	2	0	2	7	20	38	28	11	2	0	0	0	0	110
1:00 PM	0	0	1	11	16	25	20	5	0	0	1	0	0	79
2:00 PM	0	0	0	10	14	37	23	8	1	0	0	0	0	95
3:00 PM	3	0	0	0	14	37	27	8	2	0	0	0	0	91
4:00 PM	1	0	2	7	13	47	50	22	3	1	0	0	0	146
5:00 PM	1	0	0	2	14	57	56	18	1	0	0	0	0	149
6:00 PM	3	0	0	1	9	21	23	9	2	1	0	0	0	60
7:00 PM	1	0	0	1	9	28	17	2	0	0	0	0	0	58
8:00 PM	1	0	0	0	12	25	11	4	2	0	0	0	0	55

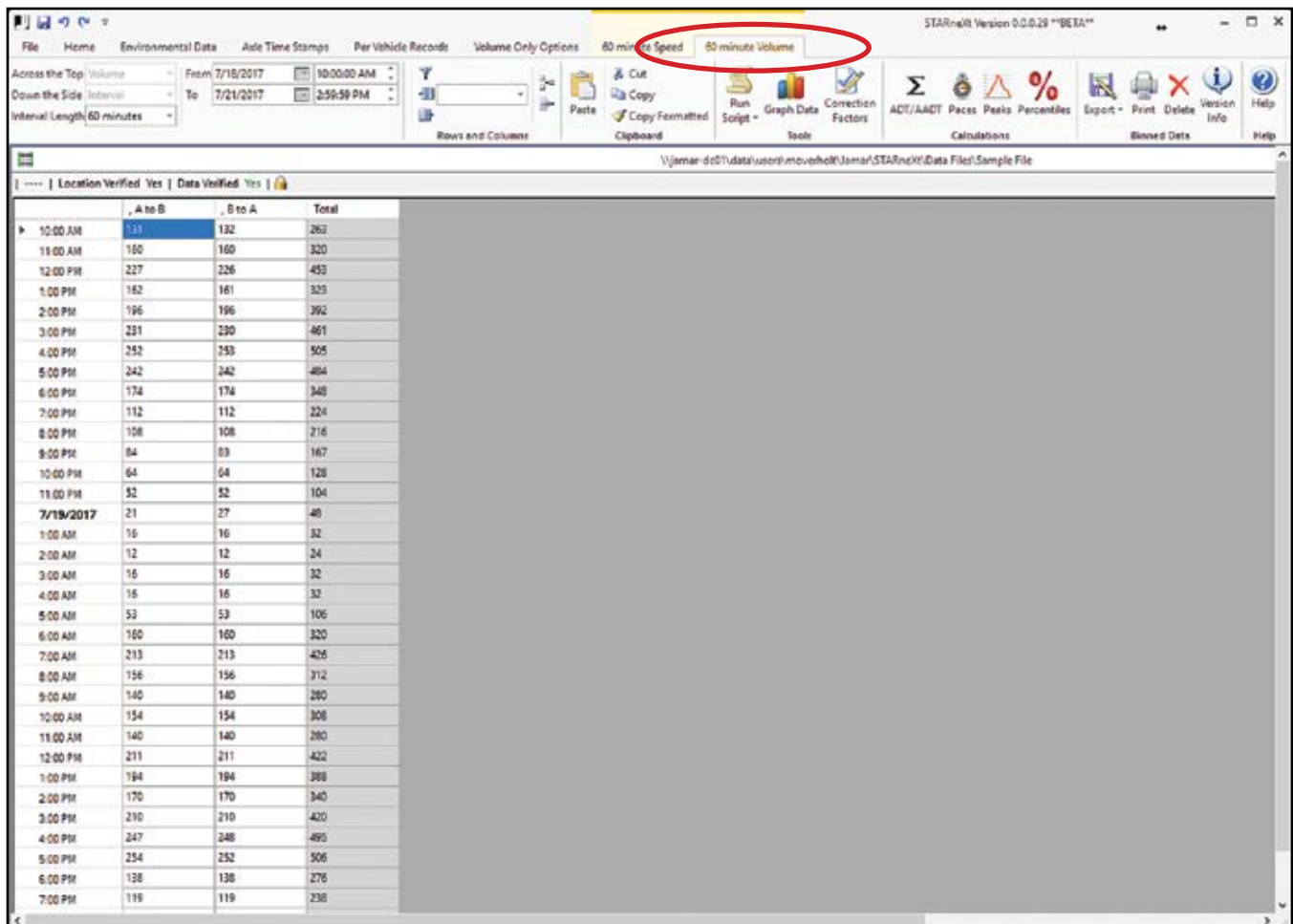
Binned Volume

In the Volume Only format, when using a TRAX recorder vehicles are counted based on their number of axles. There are two settings that can be used – Vehicle Count and Axle Count. The Vehicle Count mode uses the divide-by-two technique, in which every two axles are counted as one vehicle. The axle count mode counts every axle individually. When using a Radar Recorder in Volume Only mode, each individual vehicle is counted separately, regardless of the number of axles.

The **main advantage** of volume only data is that, like binned data, the recorder does most of the work so when you download the data it is essentially ready to print.

The **main disadvantage** of volume only data is that, like binned data, the data is stored in a rigid format, so if there was a problem with the data collection, there is little that can be done to salvage the data.

When using a **TRAX** recorder, we recommend collecting data in the **Axle Time Stamp (Basic)** mode whenever possible. This axle time stamp format makes troubleshooting bad data much easier, and can often allow problems to be fixed after the data has been collected. When using a **Radar Recorder**, we recommend collecting data in the **Per Vehicle** mode as this provides the most data flexibility.



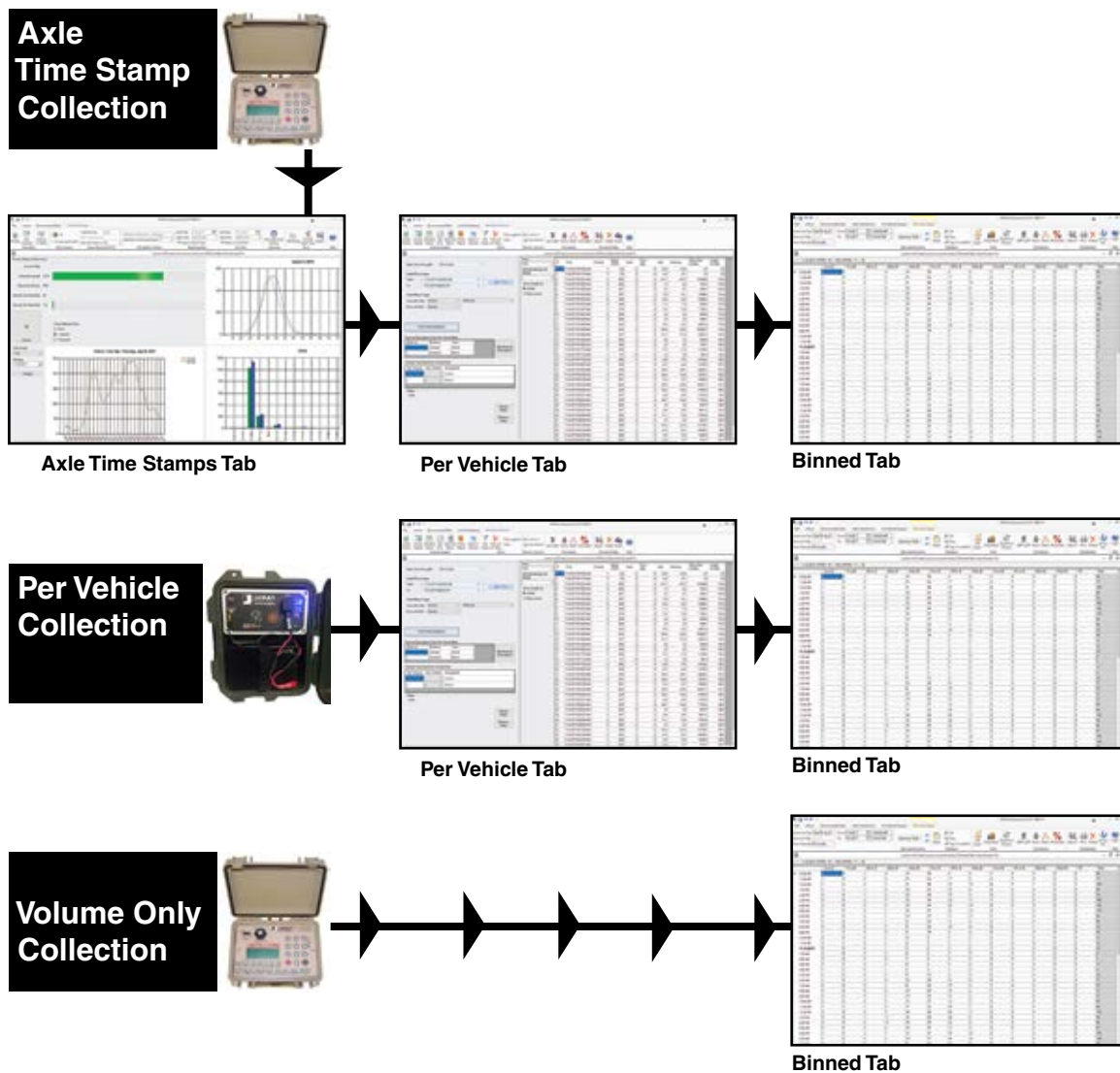
The screenshot shows the STARnet software interface. The menu bar at the top includes 'File', 'Home', 'Environmental Data', 'Axle Time Stamps', 'Per Vehicle Records', 'Volume Only Options', '60 minute Speed', and '60 minute Volume'. The '60 minute Volume' option is highlighted with a red circle. Below the menu bar, there are various tool icons and a status bar. The main data area displays a table with the following columns: 'A to B', 'B to A', and 'Total'. The data is organized by time intervals, starting from 10:00 AM on 7/18/2017 and continuing through the day.

	A to B	B to A	Total
10:00 AM	131	132	263
11:00 AM	160	160	320
12:00 PM	227	226	453
1:00 PM	162	161	323
2:00 PM	196	196	392
3:00 PM	231	230	461
4:00 PM	252	253	505
5:00 PM	242	242	484
6:00 PM	174	174	348
7:00 PM	112	112	224
8:00 PM	108	108	216
9:00 PM	84	83	167
10:00 PM	64	64	128
11:00 PM	52	52	104
7/18/2017	21	27	48
1:00 AM	16	16	32
2:00 AM	12	12	24
3:00 AM	16	16	32
4:00 AM	16	16	32
5:00 AM	53	53	106
6:00 AM	160	160	320
7:00 AM	213	213	426
8:00 AM	156	156	312
9:00 AM	140	140	280
10:00 AM	154	154	308
11:00 AM	140	140	280
12:00 PM	211	211	422
1:00 PM	194	194	388
2:00 PM	170	170	340
3:00 PM	210	210	420
4:00 PM	247	248	495
5:00 PM	254	252	506
6:00 PM	138	138	276
7:00 PM	119	119	238

Data Flow

JAMAR data recorders allow data to be collected in a number of different formats. Once downloaded into STARnext the data will generally end up at the same spot for processing into a variety of reports.

Data that has been collected in the **Axle Time Stamp** mode gets processed from the Axle Time Stamp tab to the Per Vehicle tab, then to the Binned or Volume tab. Data that has been collected in the **Per Vehicle** mode gets processed from the Per Vehicle Tab to the Binned or Volume tab, while data that has been collected in the **Binned** or **Volume** mode goes straight to the Binned or Volume tab. The figure below shows the flow of data in STARnext. The tutorials in the following chapter will walk you through processing data in STARnext.



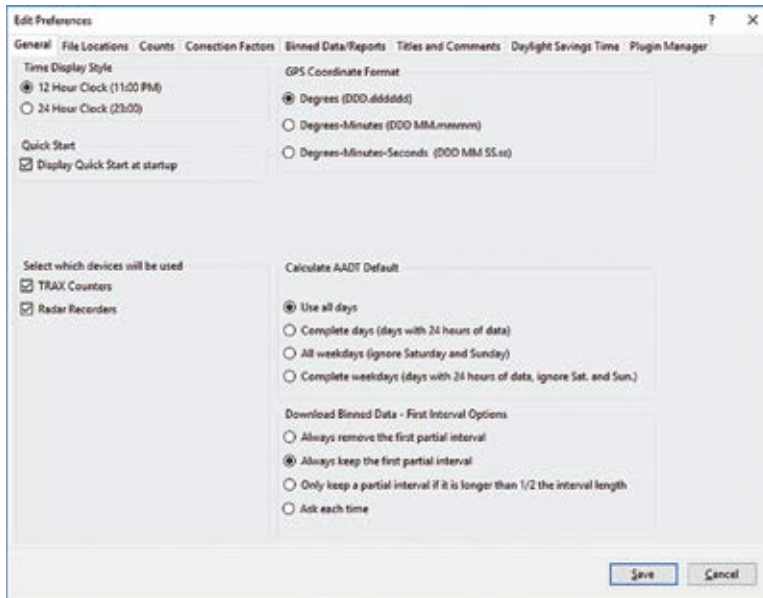
Chapter 3

Setting Preferences



Setting Preferences

Before you begin to use the program to process your data, you need to setup the program to suit your specific needs. This is done through the Preferences. The first time you run the program you will automatically be prompted to check your preferences. After this, these same settings can be accessed by clicking on the Preferences button of the Quick Start screen or by going to the **File** menu and selecting **Preferences**.



General Tab

There are six tabs in the Preferences that can be used to customize the program. The tab that is visible when the screen first comes up is the **General** tab. The Preferences that can be set in the General tab are: Time Display Style, Quick Start & Visual Theme, Select Which Devices Will Be Used, GPS Coordinate Format, Calculate AADT Default and Download Binned Data - First Interval Options.

The first option listed is the **Time Display Style**. This setting allows you to use either a 24-hour military clock or a 12-hour clock with AM and PM designations when displaying interval times. Select the option that you prefer.

The next option is **Quick Start**. The check box *Display Quick Start at startup* can be used to turn on or off the Quick Start screen that appears when the program is run. The Quick Start screen is designed to save time, so we recommend leaving it checked.

The **Select Which Devices Will Be Used** option lets you designate if you are using TRAX Counters, Radar Recorders or both with the program. This setting determines what options you see when you select to download or setup a counter in STARnext. If just TRAX or Radar is selected, you'll go straight to the screen for that device. If both are selected, you'll be asked to select the device you want when you select to download or setup a counter.

The **GPS Coordinate Format** option lets you select how you want to see GPS Coordinates. There are three options:

- Decimal Degrees (40.215790°)
- Degrees, Decimal Minutes (40° 12.9474')
- Degrees, Minutes, Seconds (40° 12' 56.844")

In all cases, the value shown represents the same location, it is just shown in different formats. Select the one that best suits your needs.

The **Calculate AADT Default** allows you to select what data should be used for calculating ADT information. The options are:

- Use all days - this will include days that have partial data
- Complete Days - this will only include days that have a full 24 hours of data
- All Weekdays - this will include only weekdays (Monday through Friday), even those with partial data
- Complete Weekdays - this will include only weekdays (Monday through Friday) and only days with a full 24 hours of data.

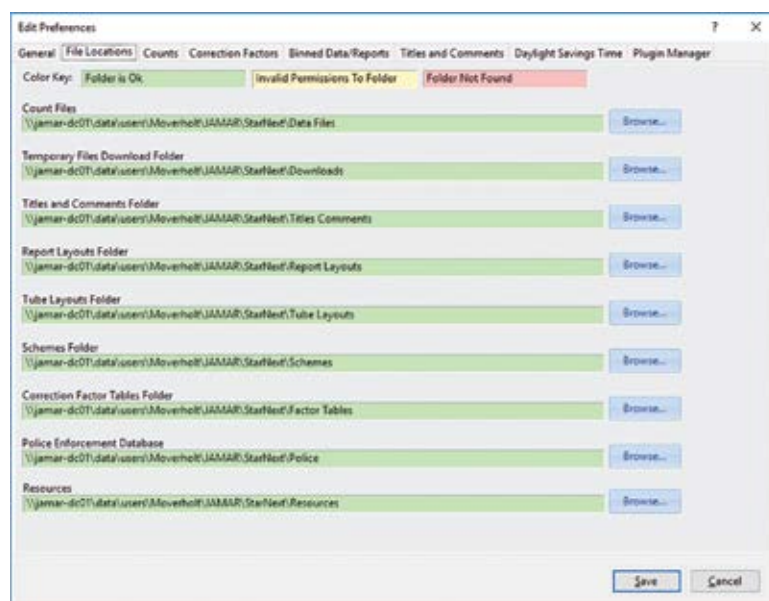
The Download Binned Data - First Interval Options allows you to decide how binned data should be handled in the first time interval only has partial data. For example, you are downloading binned data that is in 60 minute intervals and the first interval starts at 2:24 PM. The options, and how the example would be handled for each are:

- *Always remove the first partial interval* - in our example, the 2 PM interval will be discarded and the data will begin at 3 PM
- *Always keep the first partial interval* - in our example, the partial data will be kept and the data will begin at 2 PM
- *Only keep a partial interval if it is longer than 1/2 the interval length* - in our example, the data will be kept (36 minutes is more than half of the 60 minute interval) and the data will begin at 2 PM
- *Ask each time* - you will be prompted to select how you want to handle the data every time.

Once you have finished setting your General preferences, click on the **File Locations** tab at the top.

File Locations Tab

The File Locations tab allows you to set the paths for a variety of files that are used by the program. These include:



Count Files - the default path where your Starnext data files will be created.

Temporary Files Download Folder - the default path where temporary files from a download will be stored. This is typically My Documents\JAMAR\STARnext\Downloads. If you ever encounter a problem with a data file, the JAMAR support team may ask you for a file from this location.

Titles and Comments Folder - The default path where any default titles or comments you create will be stored.

Report Layouts Folder - The default path where layouts for printed reports will be stored. These are contained in four XML files. Two each for 'system' binned and volume reports and two for

user defined binned and volume reports.

Tube Layouts Folder - The default path where any tube layouts will be stored. Each layout is stored as an individual file with a .snjt file extension.

Schemes Folder - The default path where any schemes you create will be stored. Each schemes is stored as an individual file with a .snjs file extension.

Correction Factor Tables Folder - The default path where any correction factor tables you create will be stored. Any factor tables you create will be stored in one of two .snjdf files – one for daily factors (Sunday through Saturday) and one for seasonal factors (Jan 1 through Dec 31).

Police Enforcement Database - The default path where any enforcement database you create will be stored. The database is stored in an XML file.

Resources - The default path where a variety of program-related files will be stored.

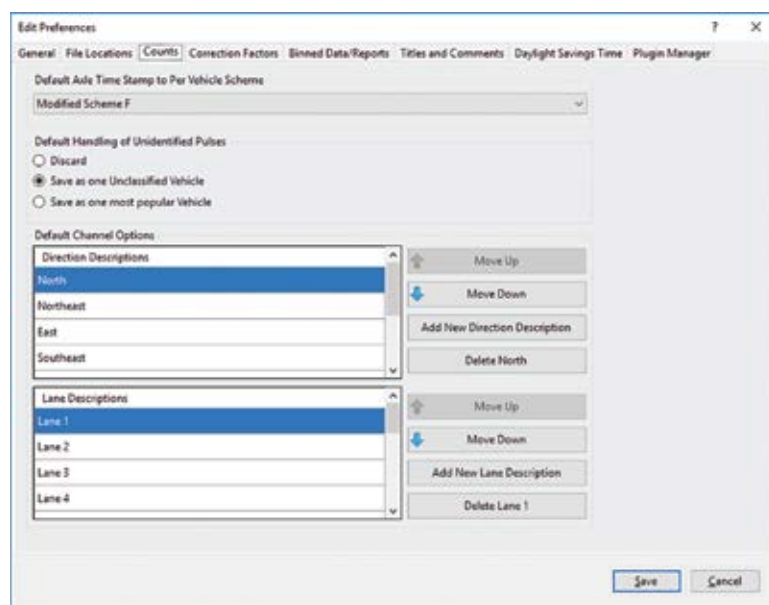
The paths are defaulted to be installed in your My Documents folder under JAMAR\Starnext. However, you can choose to set them however you like.

Note that the Preferences screen will color code the paths selected to green if the path is ok, yellow if the path doesn't have valid permissions or red if the path cannot be found.

Once you have finished setting your File Location preferences, click on the **Counts** tab at the top.

Counts Tab

The **Counts** tab allows you to set default settings related to how your data files are processed.



The *Default Axle Time Stamp to Per Vehicle Scheme* field allows you to select the default classification scheme that will appear in new files on the Axle Time Stamps tab. This is the scheme that is used to convert axle time stamps into per vehicle data. Choose the scheme you would like from the available options. Note that this can always be changed on a file-by-file basis on the Axle Time Stamps tab.

The *Default Handling of Unidentified Pulses* field allows you to select what you do with the axle time stamps that aren't able to be classified into vehicles. The options are:

- Discard
- Save as one Unclassified Vehicle
- Save as one most popular Vehicle

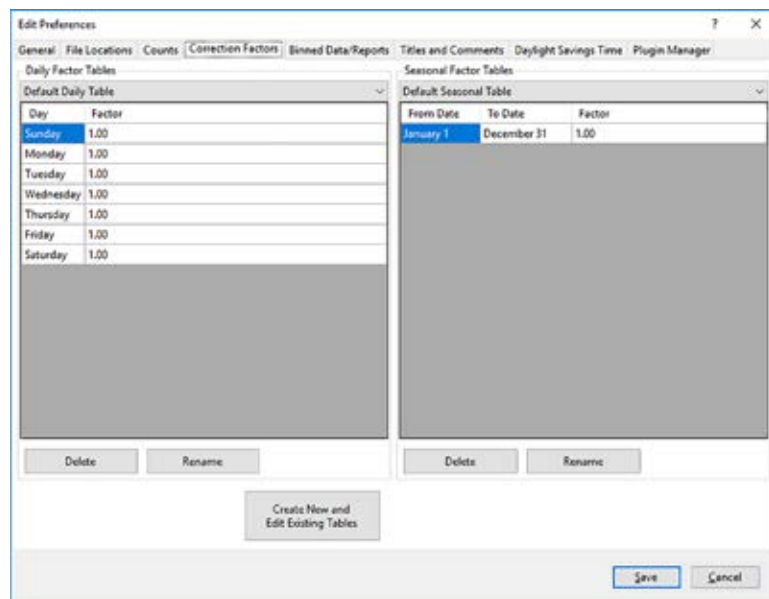
The most common selection is *Save as one Unclassified Vehicle*, as this allows you to see what percentage of unclassified data there was in your count. However, you can choose to set it as you see fit.

The *Default Channel Options* allows you to set default names for both the direction of your data and the lanes. These can then be used when processing your data to quickly assign names to the data. The buttons to the left allow you to set the order of the names and add or delete names from the list.

Once you have finished setting your Count preferences, click on the **Correction Factors** tab at the top.

Correction Factors Tab

The **Correction Factors** tab allows you to program correction factor tables for use with the data. There are two separate tables — one for seasonal factors and one for daily factors. These factors allow you to adjust your data based on historical information.



These factors can be applied while editing your data or when producing your reports.

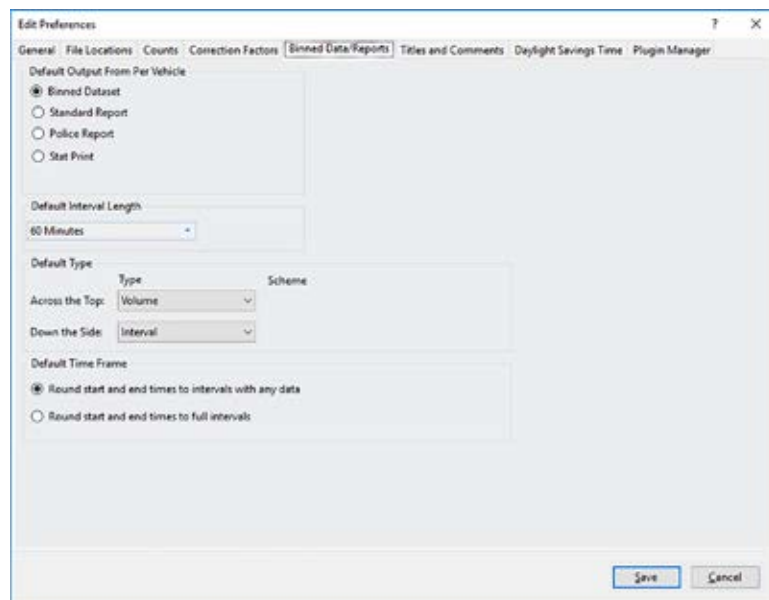
You can edit existing tables or add new ones by clicking on the *Create New and Edit Existing Tables* button.

Note that you are not required to use factors with your data. You should only use factors if they have been supplied to you, or if you have created them based on historical information. If you are not familiar with how to use factors, leave them at the default setting of 1.000.

Once your Correction Factors are set, click on the Binned Data/Reports tab.

Binned Data/Reports Tab

The **Binned Data/Reports** tab allows you to program default settings for when data is processed from the Per Vehicle format to either binned data or reports.



The *Default output from Per Vehicle* settings allows you to set the default processing option that will be set when the Per Vehicle tab appears. The options are:

- Binned Data Set - creates a binned data tab.
- Standard Report - takes you directly to the report settings for your data.
- Police Report – takes you to the Police Report options.
- Stat Print – takes you to the Statistics Print screen.

The *Default Interval Length* option allows you to set a default time interval for binned data. The options are: 1, 5, 15, 30, 60 minutes or 24 Hours. The most common selections are 15 or 60 minutes.

The *Default Type* option allows you to set the type of binned data you want to process and whether it should be a time-based spreadsheet or matrix. The most common selection is either Volume, Axle Class or Speed for *Across the Top* and Interval for *Down the Side*.

The *Default Time Frame* option allows you to select how to deal with partial interval data. The options are:

- *Round start and end times to intervals with any data* – With this option selected, the start and end times for a new report will default so that all data is included.

For example, the count begins at 1:06 PM and ends at 2:22 PM. With 15 Minute intervals, the report start time will default to 1 PM and the report end time will default to 2:30 PM.

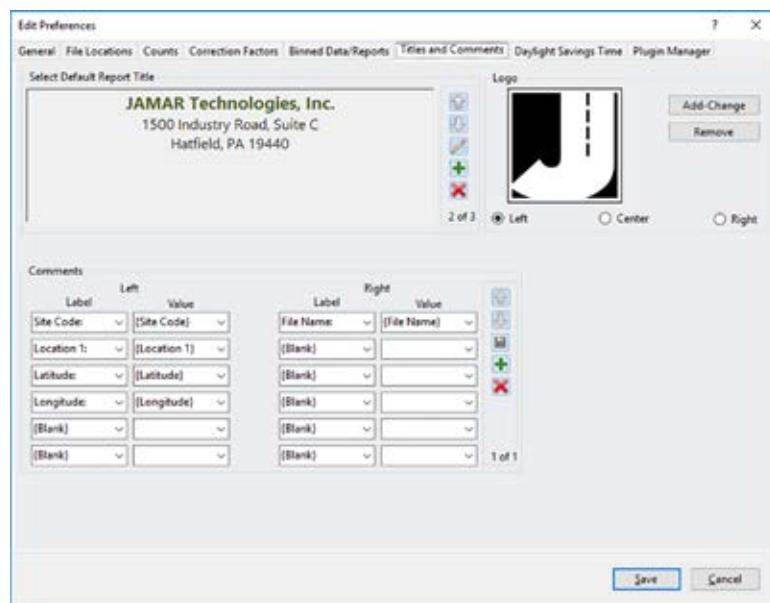
- *Round start and end times to full intervals* – With this option selected, the start and end times for a new report will default so that only full-interval data is included.

For example, the count begins at 1:06 PM and ends at 2:22 PM. With 15 Minute intervals, the report start time will default to 1 PM and the report end time will default to 2:15 PM.

Once your Binned Data settings are the way you want, click on the Titles and Comments tab.

Titles and Comments Tab

The Titles and Comments tab allows you to edit the title text that is printed at the top of the report, as well as the comment information that is included with the report.



The title information is edited using the *Select Default Report Title* section. The up and down arrows can be used to page through existing titles. The pencil icon can be used to edit the currently selected title. The Plus icon can be used to add a new set of titles and the X icon can be used to delete a set of titles.

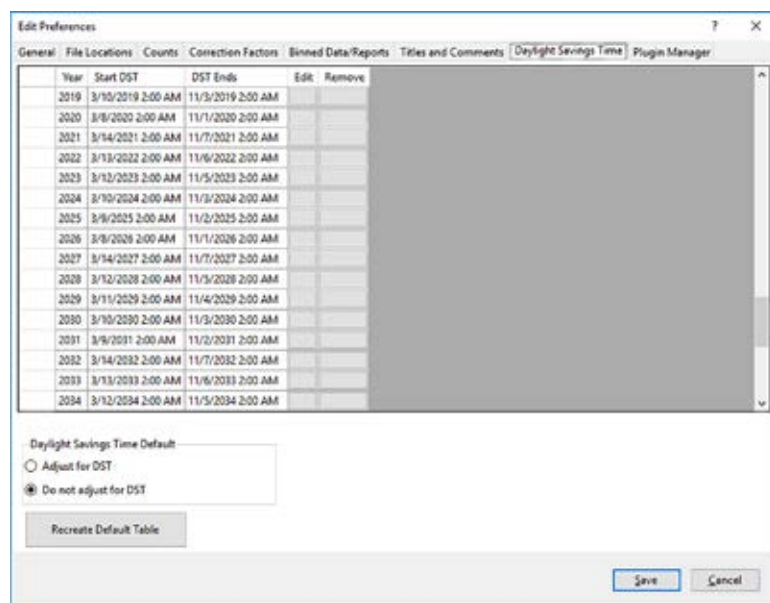
The *Logo* section can be used to upload a new logo for the report and to position it to the Left, Center or Right.

The *Comments* section can be used to set default comments that will be printed at the top left or top right of the report. The *Label* column allows to select from a predefined list of labels or enter your own. The corresponding value column allows you to select which value from the data file will be printed next to the label.

Once your Titles and Comments settings are the way you want, click on the Daylight Savings tab.

Daylight Savings Tab

The Daylight Savings tab allows you to have your data files automatically adjusted for daylight savings.



The table of dates provides dates and times for spring and fall adjustments up to the year 2050. If you want to change a date or time, click the *Edit* button next to the one you want to change and an edit box will appear at the lower portion of the screen. Once you have made your change, click the Save button to save the changes or Cancel to discard them.

The Daylight Savings Time Default field allows you to select if you do or don't want STARnext to make automatic adjustments.

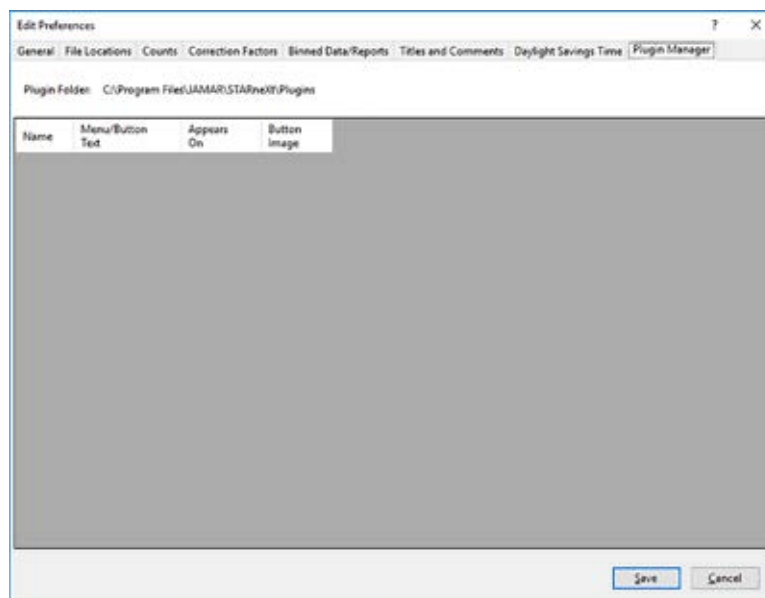
The *Recreate Default Table* button will reset the table date and times to those originally in place as of 2019.

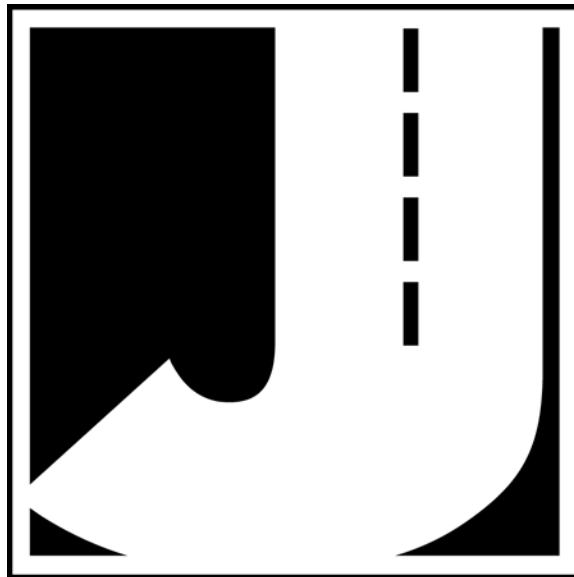
Once your Daylight Savings settings are the way you want, click on the Plugin Manager tab.

Plugin Manager Tab

The Plugin Manager tab shows any program plugins that have been added to your copy of STARnext. Plugins are typically third-party applications that work in conjunction with STARnext.

Once all your Preference settings are complete, click the Save button and you'll be taken to the Quick Start screen.





Chapter 4

Downloading Data & Opening Files



Downloading Data

There are several methods for downloading data into the program, depending on the type of data recorder you are using:

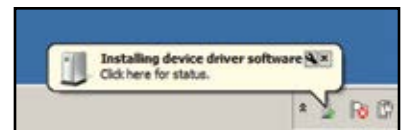
- *TRAX using a USB cable*
- *TRAX using a USB flash drive*
- *Gen1/2 Radar Recorder using a serial cable with USB adapter.*
- *Gen1/2 Radar Recorder using Bluetooth*
- *Law Enforcement Radar using a serial cable with USB adapter.*
- *Law Enforcement Radar using Bluetooth*
- *Black Cat I/II Radar using USB cable*
- *Black Cat I/II Radar using Bluetooth*
- *Black Cat I/II Radar using a modem*

For reference sake, one of these methods is described below. For your specific hardware and method, refer to the User's Manual that came with your hardware.

TRAX Using a USB Cable

Once you have performed a study with your TRAX, you will need to download it to your computer so STARnext can analyze the data. Newer TRAX recorders use a standard USB cable and USB driver to perform the download.

When you plug in the USB adapter for the first time you should see a pop-up message along your Windows taskbar like the one shown to the right.



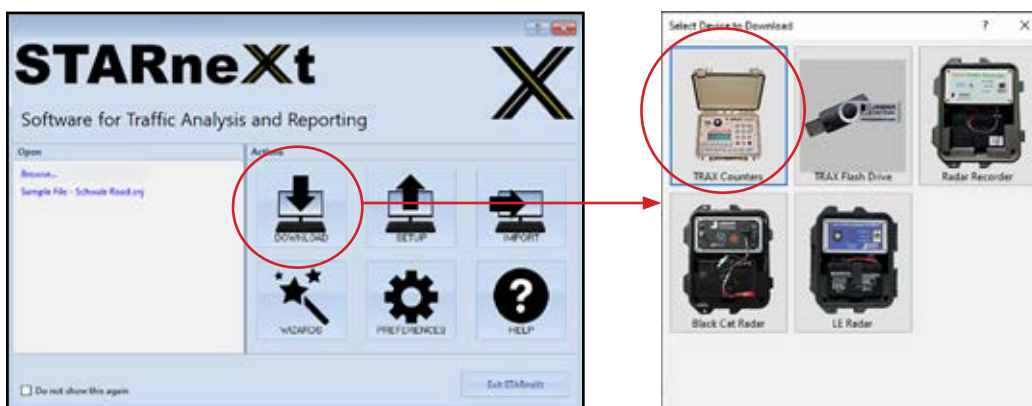
Windows will take a minute or two to find the proper driver and install it. This process is done when you see the message shown to the right.



If the driver does not install automatically, refer to the appendix for instructions on manually installing the driver.

Now that the drivers for the TRAX have been installed, we're ready to download data. To do this, select *Download* from the Quick Start screen, then select *TRAX Counters*. The **Download TRAX Counter** screen will appear.

The baud rate setting determines how fast the data will be transferred into the program. Most computers can be set for the highest setting. Once this is set, select the com port that was assigned by the USB driver. (The program will



only list the comm ports available on the computer, so if you're not sure of the port, try each one.)

To be able to download your TRAX, it must be on the Main Menu. If there is a study currently running, turn the unit off, then back on. Don't worry about losing your data – turning the TRAX off ends the count and stores it in memory.

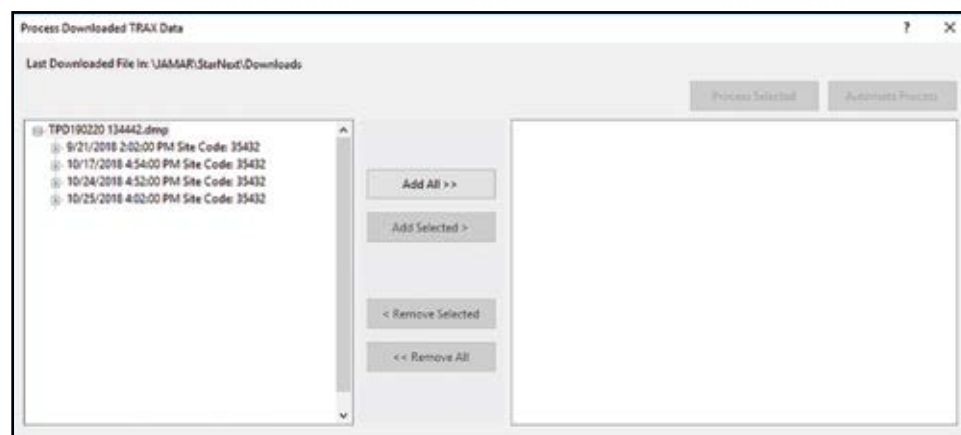
After making any needed adjustments, click on the *Begin Download* button and the program will attempt to connect to the recorder. The traffic signals at the bottom of the screen provide the status of the download. If the connection is made, you will see a blue progress bar moving across the screen as the data is transferred.

When all of the data in the TRAX has been downloaded, you will see a screen similar to the one below that will show all of the studies downloaded from the TRAX in the large window to the left. (Remember, the TRAX can store multiple studies in memory and will always download all the studies it has stored.)

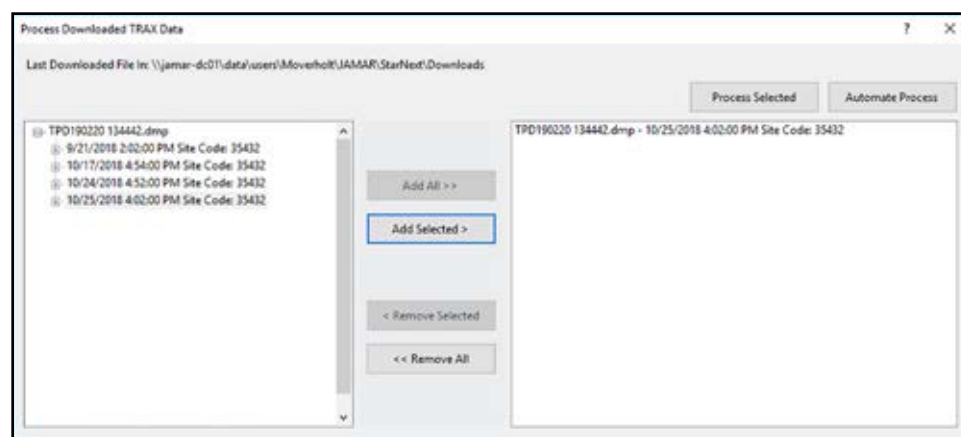


The list contains detailed information on each study, including the start date and time of the study. The list is shown in chronological order of the studies, with the oldest studies at the top and the newest at the bottom.

The Add All and Add Selected buttons between the two large windows can be used to select the data you want to move to the processing window. Click *Add All* if you want to move all the files to the Processing window. If you want to select just individual files, highlight the file you want in the left window and then click the *Add Selected* button. This will add the file to the Processing window on the right, as shown in the figure to the left.



To open the study you want to work with, click the Process Selected button and the study will appear on your screen. The download process is then complete.



Note that STARnext stores the information from each download and keeps a record on file. This allows you to reprocess the downloads without actually having to re-download the counter. To do this, go to the *File* menu and select *Reprocess TRAX*. This can be a useful tool

if you accidentally delete data.

Opening Existing Files

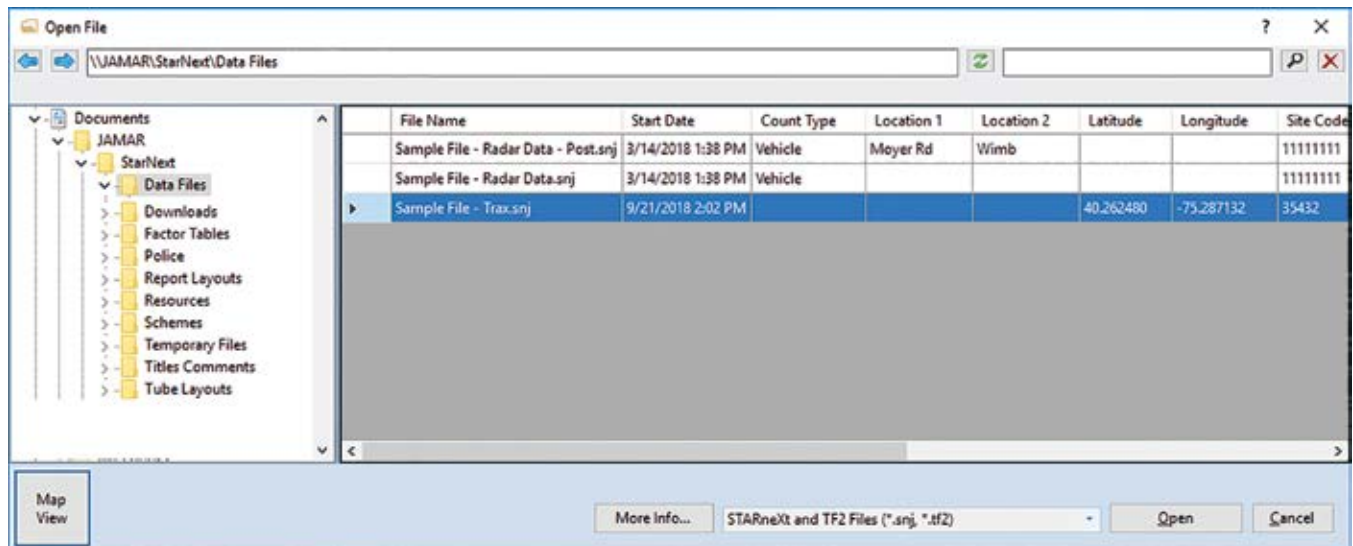
While you will usually download your data and produce reports all at one time, there may be times when you need to open a previously downloaded and saved file for further analysis. These files can easily be accessed through the program.



STARnext shows a list of the eight most recently accessed files on the Quick Start screen under the *Open* heading, as shown to the left. You can open any of these files by simply clicking on them.

To open any older files that don't appear on the Recent Files list, click the *Browse...* link directly above the list of recent files. This will bring up the Open File screen. (Note that you can also access this screen by going to the *File* menu and selecting *Open*.)

The Open File screen works in a manner very similar to Windows Explorer. The directory tree on the left side of the screen is used to select the folder where your data files are stored. Several sample files are installed with the program and the default installation location of this folder is My Documents\JAMAR\STARnext\Data Files. Navigate to this path (or the path you used for the installation) using the tree. Once the data folder is selected you will see a list of files on the right side of the screen.



Note that there are several types of files that can be opened by the program. Files created in STARnext use a .snj file extension while files created in STARnext's predecessor, TRAXPro, use a .tf2 file extension. These are the files the program is defaulted to look for, but you can also see other files types by clicking the dropdown list at the bottom middle of the screen.

Other file types that can be opened from this screen are .dmp (temporary download files from TRAX counters), .prn (a common format used by many software programs in the traffic data industry), and .dat (temporary download files from Black Cat Radar Recorders).

The list of files on the right side of the screen contains a variety of information on each file, including File Name, Start Date, Count Type, Location 1, Location 2, Latitude, Longitude, Site Code, Station ID, Model, Serial Number, Layout, Starting Voltage, Ending Voltage, Last Modified.

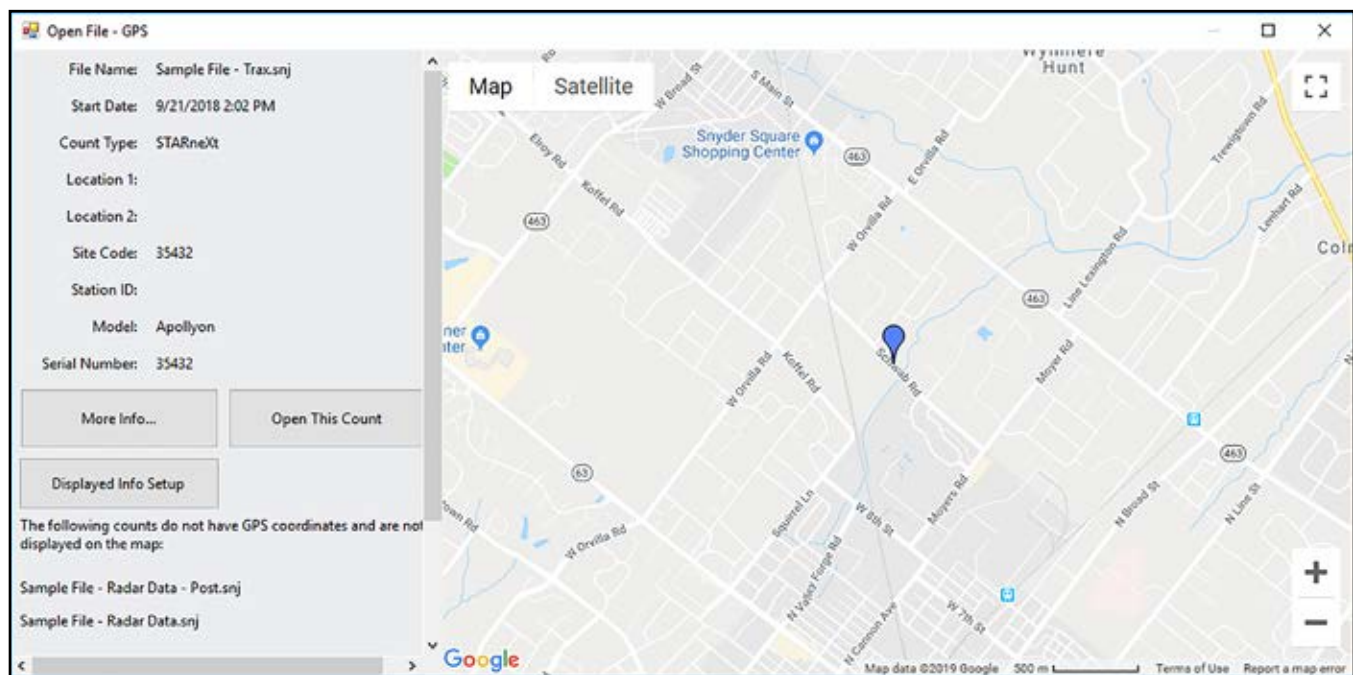
Note that you can rearrange the order of the columns by simply dragging and dropping a column header into its new location.

The *More Info* button near the bottom center of the screen provides additional information about the highlighted data file, including Location Verified Flag, Speed Limit, Dead Time, Metric Flag, Date Downloaded, Tube Spacing, 1/2 Tube Spacing, Max Axle Distance, Class Scheme and Binned Data Sets

To open a data file, either double click its listing or click it once then click the Open button.

Opening Existing Files - Map View

In addition to the standard process for viewing and opening data files, you can also view via a Map format by clicking the Map View button at the lower left. This allows you to see saved counts mapped to the location where they were done.

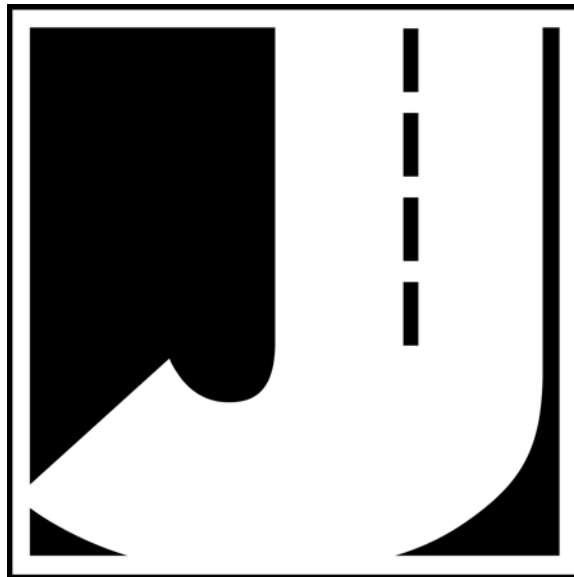


Note that for files to be shown on the map they must have GPS coordinates saved as part of the file. These are automatically stored by traffic recorders like the TRAX Apollyon Plus II. In the example above, you can see that the file 'sample file - trax' has been placed on the map.

Any files that don't have GPS info are listed on the lower left of the screen. In the example above we can see that neither of the sample radar files have GPS coordinates. For files like these, where the coordinates are not automatically created, the coordinates can be manually entered in the GPS Information field of the Home tab.

The right side of the screen shows a map with pins inserted at locations where there are existing files. To highlight a file, click on its pin. The left side of the screen shows the details of the currently highlighted file. Additional information can be viewed by clicking on the *More Info...* button which will open the View Count Info screen.

To open a data file from this screen, click the *Open This Count* button and the currently highlighted file will be opened.



Chapter 5

Processing Data



Working with Axle Time Stamp Data

This section deals with axle time stamp data collected with a TRAX road tube recorder. If you have collected Per Vehicle data with a Radar Recorder, skip to the next section - Working with Per Vehicle Records.

If you would like to follow along with the details of this section yourself, open the file 'sample file - trax'.

The Axle Time Stamps tab is one of the tabs available for view in STARnext data files. This tab is only included in data files that had been created with a TRAX data recorder in Basic mode, collecting axle time stamps.



If the counter was setup correctly, then all you need to do to create a per-vehicle dataset is press the *Process* button at the upper left. It's really that simple.

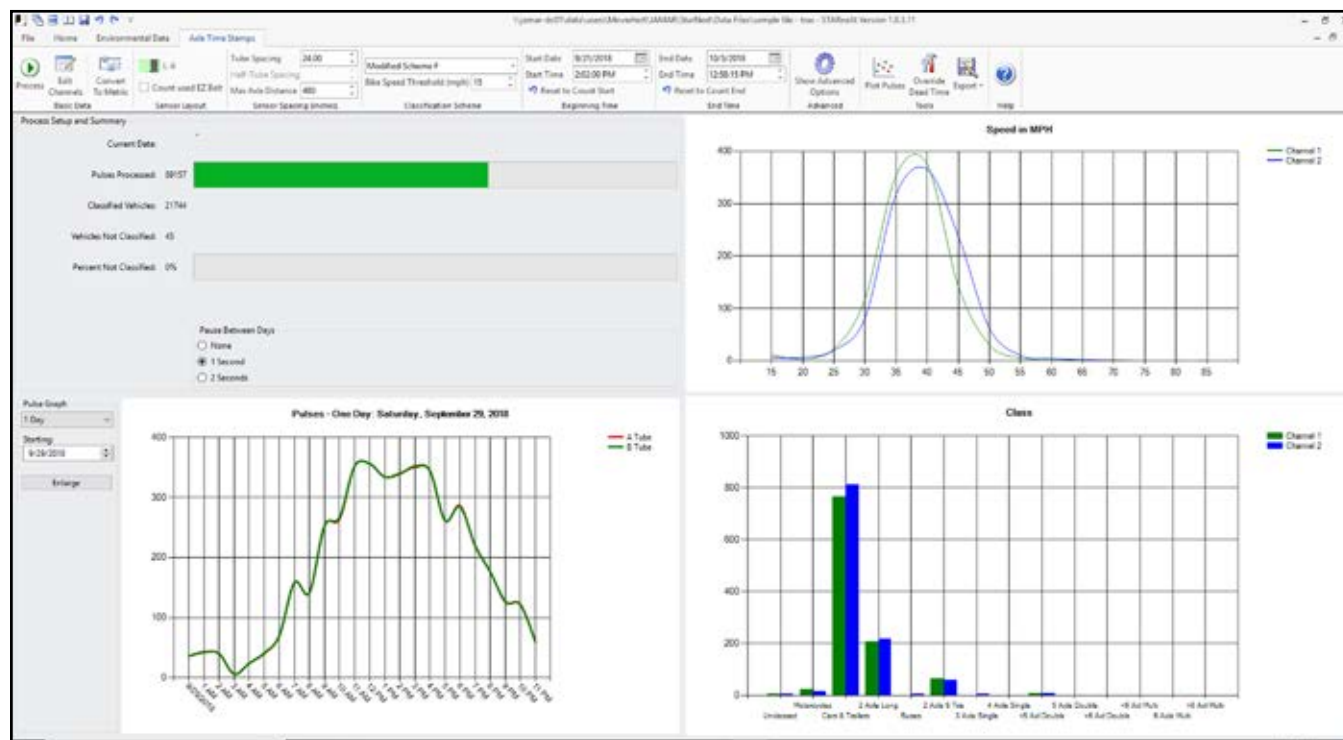
Processing

Processing axle time stamps will convert the pulses recorded in a TRAX counter to either Per Vehicle Records or a binned volume count depending on the tube layout used to record the pulses. STARnext allows you to monitor its progress by reporting the current status when the time stamp data indicates a new day. A speed and axle classification graph is displayed so you can see if the per-vehicle dataset is being created according to your expectations.

As the pulses are processed into vehicles, the main screen will display the progress. The progress is updated when the process routine sees the start of a new day in the pulses. Watching the progress will allow you to confirm that the pulses are being properly converted to vehicles. If the speeds, classes, or percentage of unclassified vehicles are out of range, you can cancel the process and see why the pulses are not being interpreted properly.

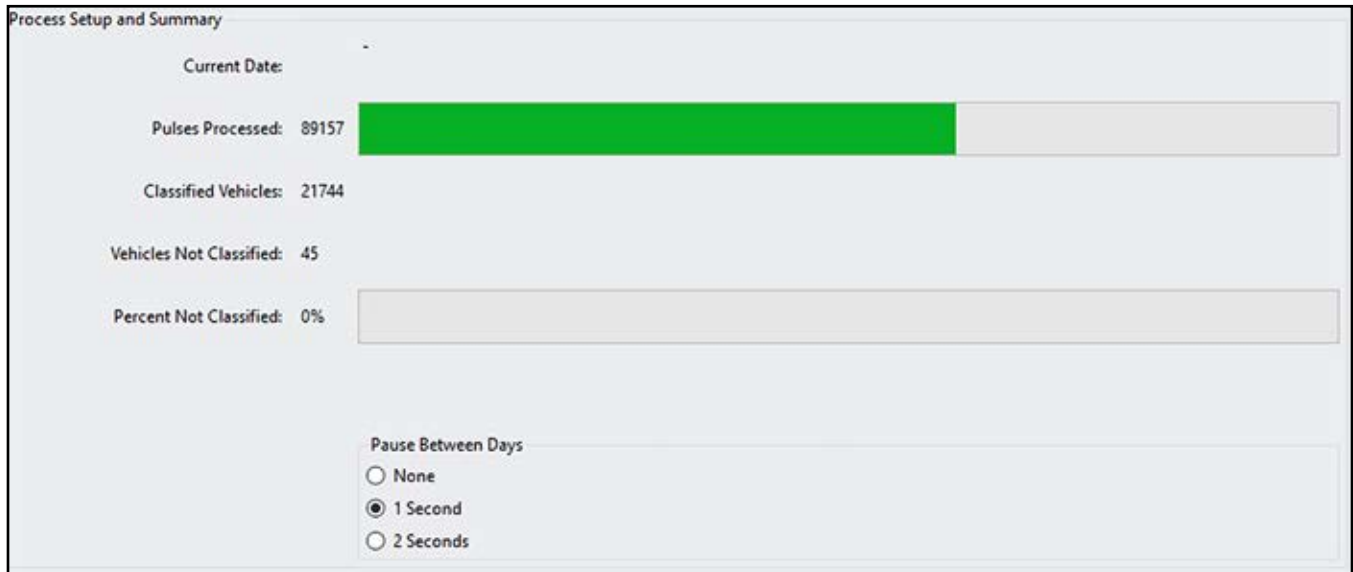
There is a delay that follows each update. You can select the amount of delay time by making the appropriate selection in the 'Pause Between Days' box. Select either 'None' for no pausing, or one or two seconds.

The screen shown below shows a typical count being processed. The screen is divided into four sections: completion summary, speeds, pulses, and classes.



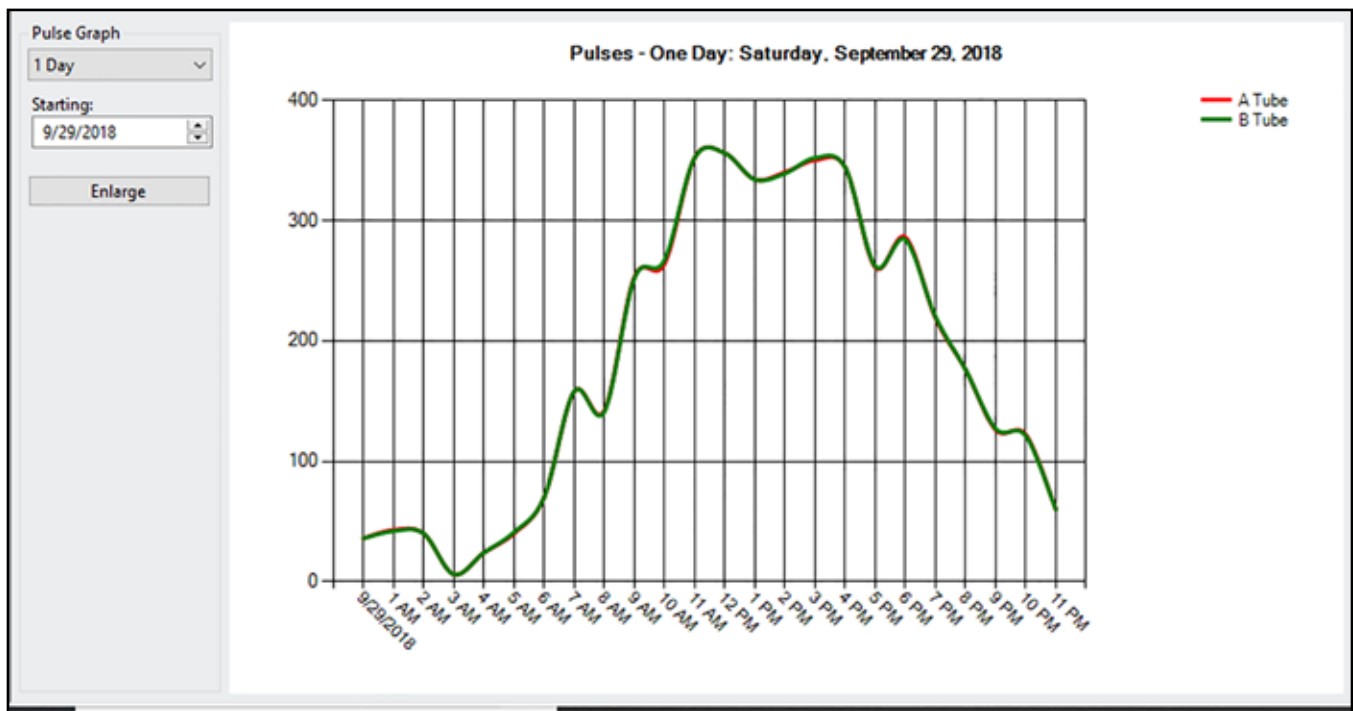
Completion Summary

The completion summary occupies the upper left portion of the screen. Here you will see the number of pulses processed both as a numeric value and a progress bar. Also displayed is the number of valid vehicles identified, as well as the number and percentage of vehicles that could not be properly identified.



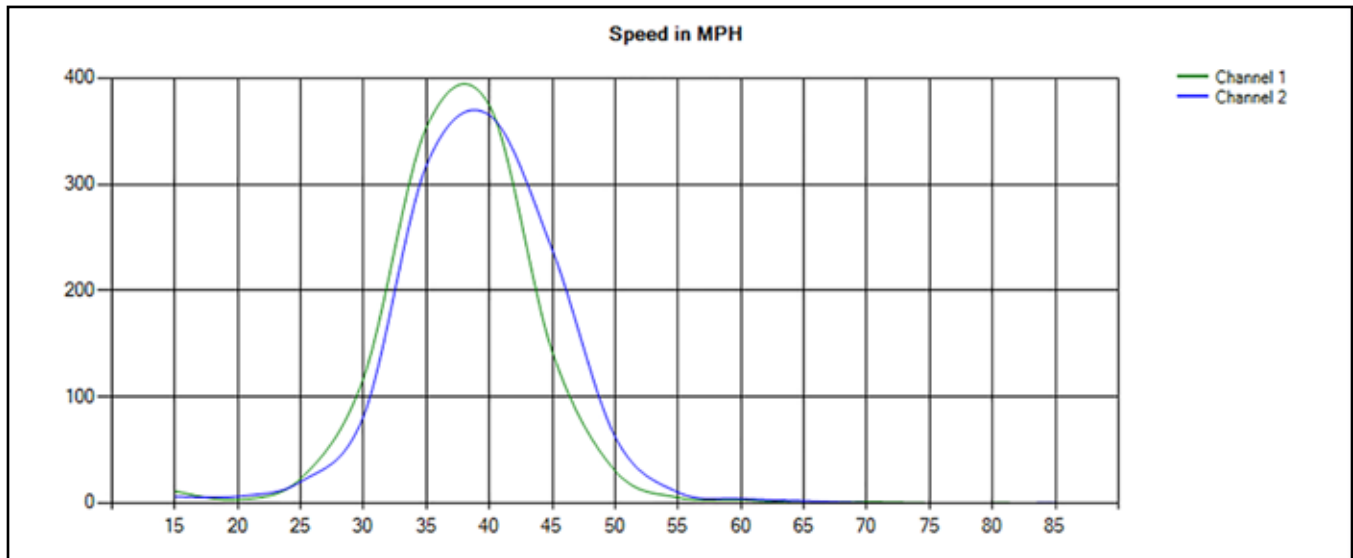
Pulse Graph

The pulses chart is in the lower left corner of the screen. This will show you the pulse set that encompasses the current day being processed. Click the *Enlarge* button (or click on the graph itself) to get a closer look at the graph.



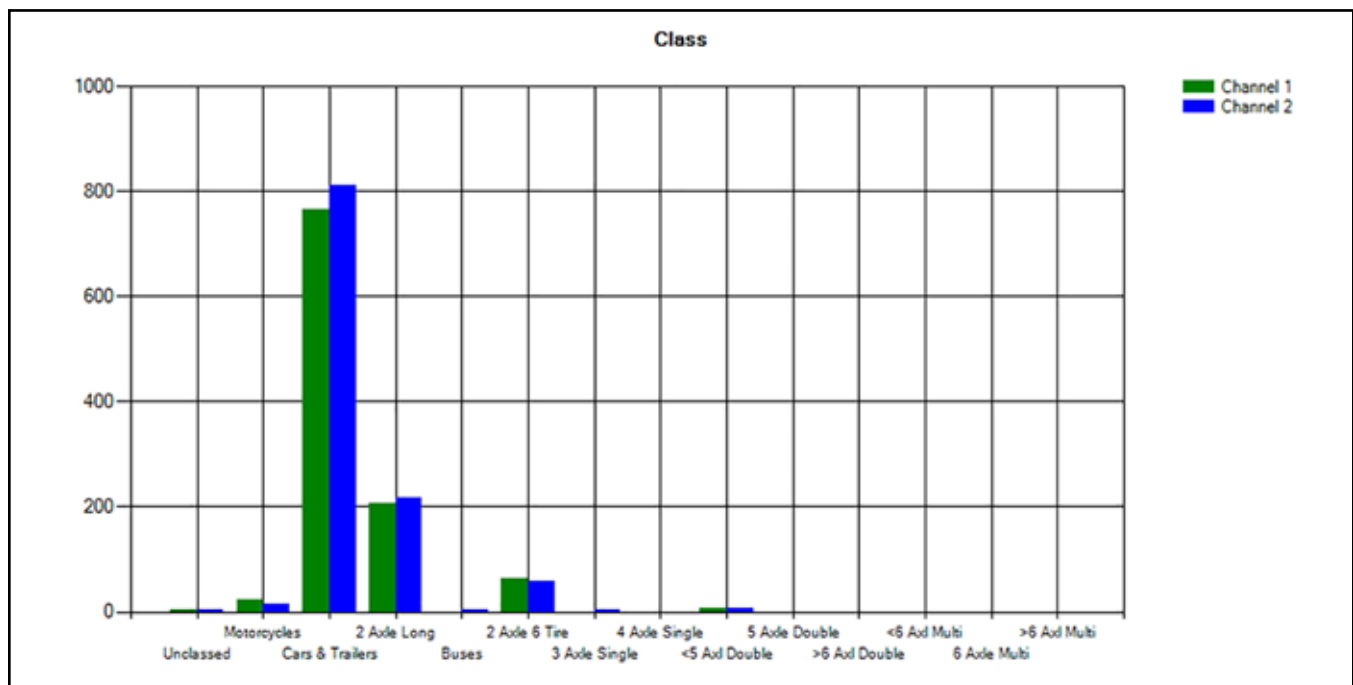
Speed Graph

The vehicle speed graph can be seen in the upper right portion of the screen. A typical chart should appear as an inverted bell curve with the apex of each curve representing the 50th percentile. If there is any deviation from what you expect you can press the Cancel button and begin troubleshooting. For example, if the count was taken on a two-lane suburban street and the speeds are falling in the 100-120 MPH range, there may be a problem with the tube spacing parameter.



Class Graph

The class chart is in the lower right. The class chart will contain the number of vehicles found in each class for the current 24-hour period. Keep an eye on this chart and watch for any anomalies in the data, such as many unclassified vehicles or an unusually high number of vehicles in a class that should not have a lot of vehicles. For example, if you know that there are perhaps 15 or 20 busses per day but the chart is showing several hundred, this could indicate a problem in the setup.



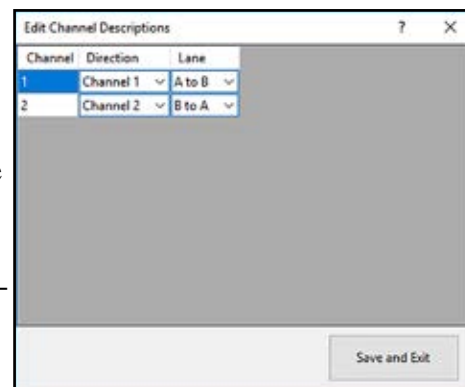
Ribbon Selections

The ribbon selections on this tab include:

Basic Data

- **Process** - If the counter was setup correctly, then all you need to do to create a per-vehicle dataset is press the *Process* button. It's really that simple.

- **Edit Channels** - When the pulses are downloaded from a TRAX counter, a table of channel names is created using the system defaults. The channel records have two components that can be changed to match the lane configuration of the roadway on which the count was taken: the direction of travel, and the lane names. The default values are set as follows: Direction is set to "Channel x" where "x" is the channel number, and Lane is set to a description of the sensor layout. The image below shows a typical channel description from a count that was taken using an L-6 tube layout.



To change the channel descriptions, you can select from the drop-down boxes that contain a list of predefined direction and lane descriptions, or type in the value from your keyboard. These predefined descriptions can be added in the Counts tab of the Preferences.

Press the *Save and Exit* button when the channel descriptions are correct.

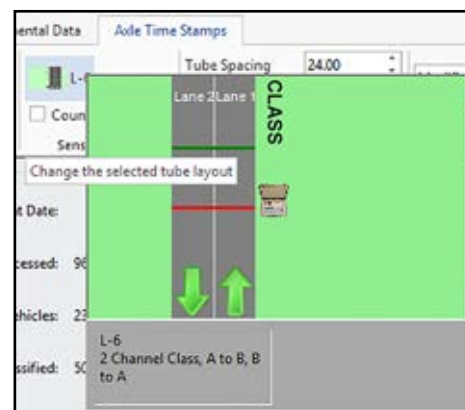
- **Convert to Metric (or Imperial)** - Distances and speeds units are displayed as either Imperial (inches and MPH) or metric (centimeters and KPH) based on how the TRAX counter was set. If this is incorrect, you can toggle between imperial and metric settings by pressing the "Convert to x" where "x" is the opposite of the current setting. For example, if the TRAX counter was set to imperial when the data was collected, then this button will be labeled "Convert to Metric".

Once the "Convert to" button is pressed, you will be informed of the changes that will be made, and prompted to confirm your selection. The following fields will be converted to the selected unit of measure: tube spacing, half tube spacing, max axle distance, and bicycle speed threshold.

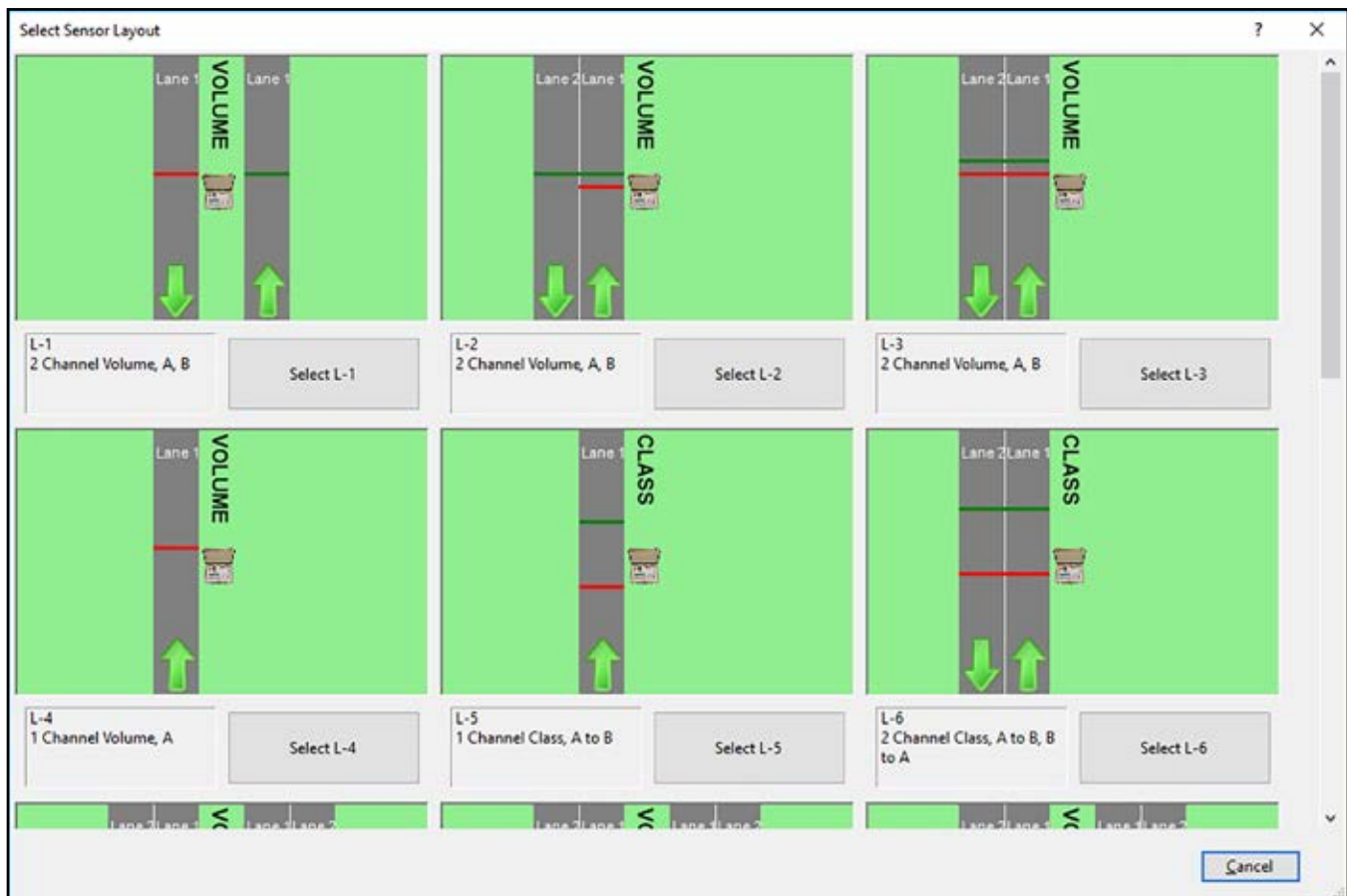
Sensor Layout

This field shows the layout that was selected in the TRAX counter during the data collection. If the counter was set up correctly, then there is nothing you need to do here. However, if the count was collected using the wrong tube layout, you have a chance to correct it and save your count. To see a visual confirmation of the selected layout, hover your mouse pointer over the small picture of the layout and a large image will appear as shown below.

If the current sensor layout is not correct, you can select a different one by pressing the small layout image. A window similar to the one below will appear.



Use the scroll bar on the right to move through the list of available tube layouts. When the correct layout is identified, select it by pressing the “Select L-x” button, where “x” is the layout number.



Sensor Spacing

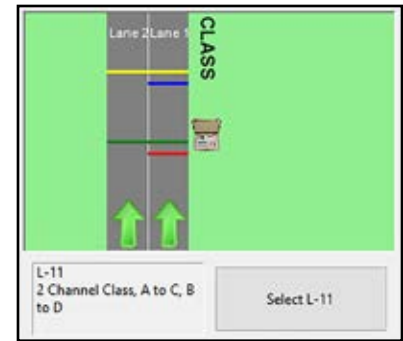
The sensor spacing will allow you to make adjustment in the tube spacing, half-tube spacing, and maximum axle distance.

- **Tube Spacing** - Set the tube spacing value as accurately as possible. The more accurate the tube spacing is, the more accurate the per-vehicle dataset will be. For example, if the count was taken using JAMAR's EZ Belt and the tube spacing was set to the standard EZ Belt setting of 4.33", a certain vehicle's speed might be recorded as 39 MPH. If the tube spacing is rounded to 4", the same vehicle's speed will be interpreted as 36 MPH. The need for an accurate tube spacing value increases as the tube spacing is closer. While this is much more critical when laying out the tubes, any errors can be taken into account here.

A more likely scenario for needing to change this value is a miscommunication with the crew laying out the road tubes. If the specs for a particular count call for 24 inch tube spacing and the crew spaces the tubes at 12 inches with the counter set for 24 inch spacing, this would normally require a recount of the location. However, the data can be saved by simply changing the tube spacing in STARnext to match how the tubes were actually set up on the road; in this case 12".

• **Half-Tube Spacing** - This is the distance between a half-tube and its corresponding full tube in a layout such as an L-8 shown in the figure below. Supplying STARnext with an accurate half-tube spacing is also critical.

• **Maximum Axle Distance** - This is the distance between a pair of axles at which STARnext considers the second axle as the beginning of a different vehicle. The default value is 480 inches (40 feet) or 1,200 cm (12 meters). Normally there is no need to change this setting. An exception might occur if the traffic was moving very slowly. If the first trailer axle of very slow-moving tractor trailers are seen by STARnext as another vehicle, then increasing the maximum axle distance may help. If you find that tractor trailers are being split into a non-articulated truck followed by a motorcycle you can increase this value. There is no rule as to how to adjust this; it is simply a process of trial and error. Note that setting this value too high will result in the likelihood of two different vehicles being combined into one.



Classification Scheme

The classification scheme is used to classify vehicles based on the spacing between axles. It is pre-filled from the selection made on the *Counts* tab of the Preferences.

In the USA, the most commonly used scheme is the Modified Scheme F, which is based on the Federal Highway Administration's (FHWA) Scheme F of 13 vehicle classifications. Some individual states have specific schemes they use. For more details on how classification schemes work, refer to the JAMAR White Paper on Classification Data

If you normally use the same scheme then there is nothing that needs to be changed here. Select the scheme you want to use. New schemes can be created using the Scheme Editor.

• **Bike Speed Threshold** - The bike speed threshold is used to differentiate between motorcycles and bicycles. Since smaller motorcycles and bicycles can have a similar wheelbase, STARnext uses the bike speed threshold to separate bikes from motorcycles. Any two-axle vehicle with a wheelbase that falls within the specification for a motorcycle will be recorded as a bike if the vehicle's speed is equal to or less than the bike speed threshold. The default is 15 MPH and there is generally no need to change this setting.

Beginning & End Times

The beginning and end times can be set if you don't want to process the entire set of axle time stamps. Normally these values do not need to be changed unless you have a specific reason to do so. The routine that takes the individual vehicles and converts them to a binned count will take care of rounding the start time to an even boundary of the selected interval length so there is no need to do that here.

One reason you may want to adjust the times is if you notice that there was a problem recording vehicles at a certain time. Normally this could occur if a road tube was severed or otherwise damaged. As you can see in figure ~.~ below, it appears as though the "B" tube developed a crack or hole and was not accurately recording the vehicle axles during the peak time of heavy traffic. In this case, the stop time should be adjusted to the time of the failure: around 9:00 AM on the 20th of September.

Advanced Options

The advanced options allows you to tell STARnext what to do when things go wrong. If the counter was setup and functioning properly, then there is nothing that needs to be done here. However, if you process a count and end up with a large number of unclassified vehicles, setting the advanced options can help you determine where things are going wrong.

Tools

The Tools selections contain several items useful in the analysis of the axle time stamp data.

- **Plot Pulses** - Clicking this button will open the Plot Axle Time Stamps screen, which allows you to view and analyze individual axle time stamps.
- **Override Dead Time** - Clicking this button will open the Override Dead Time screen, which allows you to adjust the Dead Time (also known as D Bounce).
- **Export** - Clicking this button will show you the list of file formats that you can export time stamp data into. These are Excel XML, Excel 97-2003 and CSV (ASCII). Clicking any of the options will open the Export Pulses Wizard. Note that exporting data from this tab is typically only done for highly technical analysis. Export of data for typical review and analysis is more typically done from either the Per Vehicle tab or the Binned Data tab.

Working with Per Vehicle Records

This section deals with the Per Vehicle Records tab. Data downloaded from a Radar Recorder will go directly to this screen. Axle time stamp data collected with a TRAX road tube recorder is also processed to this screen.

If you would like to follow along with the details of this section yourself, open the file 'sample file - trax' then click the Process button to create the Per Vehicle Records tab.

The Per Vehicle Records tab allows you to perform the following tasks:

- View the individual vehicles
- Set analysis parameters
- Create a binned dataset
- Create a binned printed report
- Create a Stat Print report
- Access the Police Reports
- View stats including ADT/AADT, Paces speeds, Peak volume periods, Speed percentiles
- Export the per vehicle dataset
- View the graphs and charts

The screenshot shows the JAMAR software interface with the 'Per Vehicle Records' tab selected. The left sidebar contains settings for interval length (60 minutes), time frame (From: 9/21/2018 3:00:00 PM, To: 10/5/2018 11:59:59 AM), and report type (Volume). The main data table displays vehicle data with columns for Time, Channel, Speed (MPH), Class, Class Spec, Gap, Headway, Follow Dist. (Inches), and Length (Inches). The table shows a list of vehicles with their respective speeds and distances.

#	Time	Channel	Speed (MPH)	Class	Class Spec	Gap	Headway	Follow Dist. (Inches)	Length (Inches)
1	9/21/2018 2:04:26 PM	2	23.9	2	2	146.1	146.1	66682.1	129.0
2	9/21/2018 2:04:33 PM	1	32.3	8	18	153.2	153.2	87076.0	587.0
3	9/21/2018 2:04:55 PM	1	35.8	3	3	21.7	22.8	13658.6	180.0
4	9/21/2018 2:05:02 PM	2	37.9	2	2	36.1	36.5	24091.1	132.0
5	9/21/2018 2:05:36 PM	1	31.5	5	4	15.4	15.4	8536.3	175.0
6	9/21/2018 2:05:57 PM	1	20.6	2	2	19.6	20.2	7098.8	137.0
7	9/21/2018 2:06:01 PM	2	34.1	2	2	42.8	42.8	18144.3	137.0
8	9/21/2018 2:06:13 PM	1	29.7	2	2	15.2	15.6	7933.3	138.0
9	9/21/2018 2:06:19 PM	1	35.0	2	2	5.8	6.1	3590.1	133.0
10	9/21/2018 2:06:28 PM	2	35.3	2	2	27.2	27.5	18854.5	132.0
11	9/21/2018 2:06:37 PM	1	33.6	2	2	17.4	17.7	10310.3	132.0
12	9/21/2018 2:06:51 PM	1	35.4	4	5	13.8	14.1	8587.7	289.0
13	9/21/2018 2:06:55 PM	2	41.8	3	3	26.8	27.0	19683.8	149.0
14	9/21/2018 2:07:19 PM	1	38.5	2	2	27.4	27.9	19067.8	131.0
15	9/21/2018 2:07:40 PM	1	22.1	2	2	21.5	21.7	8946.4	135.0
16	9/21/2018 2:08:06 PM	1	35.4	2	2	25.2	25.6	15705.1	129.0
17	9/21/2018 2:08:30 PM	1	30.7	2	2	84.3	84.5	45608.9	134.0
18	9/21/2018 2:10:46 PM	2	40.7	5	4	230.4	230.7	185198.4	175.0
19	9/21/2018 2:11:05 PM	1	31.8	3	3	83.9	84.2	52589.1	167.0
20	9/21/2018 2:12:04 PM	2	45.0	3	3	78.0	78.2	61710.7	168.0
21	9/21/2018 2:12:52 PM	1	25.8	2	2	106.9	107.3	48580.6	139.0
22	9/21/2018 2:13:06 PM	2	41.4	2	2	61.8	62.0	45046.6	137.0
23	9/21/2018 2:13:20 PM	2	45.2	3	3	14.1	14.3	11186.0	148.0
24	9/21/2018 2:13:25 PM	2	46.5	2	2	4.0	4.2	3236.4	126.0
25	9/21/2018 2:13:40 PM	1	20.4	3	3	47.3	47.7	17014.4	147.0
26	9/21/2018 2:13:42 PM	2	32.8	5	4	16.7	16.9	9839.5	176.0
27	9/21/2018 2:14:10 PM	1	35.0	3	3	30.0	30.5	16445.1	167.0
28	9/21/2018 2:14:11 PM	2	35.5	2	2	28.5	29.8	18413.3	140.0
29	9/21/2018 2:14:36 PM	1	37.3	2	2	25.4	25.7	16668.1	132.0
30	9/21/2018 2:14:53 PM	1	34.4	3	3	34.3	34.4	18431.0	134.0

View the Individual Vehicles

All the information available about a vehicle can be viewed in the table on the right side of the screen. The information available may vary depending on the type of counter used to collect the data and how it was set up. For example, if the per vehicle records were generated from axle time stamps collected by a TRAX counter, there will be more vehicle data available than if the count was taken by a radar recorder.

Selecting Which Vehicles to View – The initial per vehicle display will contain the first 1,000 vehicles in a dataset. This is done because a large per vehicle dataset could potentially contain several hundred thousand vehicles and slower computers would take a long time to populate the table with all the vehicles. There is a navigation area to the left of the table where you can tell STARnext which vehicles to display. The dropdown boxes can be set to accommodate your needs. To populate the table with all the vehicles, select ‘All’ from the top dropdown, and select ‘1’ from the bottom.

Show 1000 vehicles starting with vehicle 1	#	Time
	1	9/21/2018 2:04:26 PM
	2	9/21/2018 2:04:33 PM
	3	9/21/2018 2:04:55 PM

Length Display Mode – If the vehicles were created using imperial units of measure, you have the option to view length in inches or feet/inches. If the vehicles were created using metric units of measure, you have the option to view length in centimeters or meters. To change the display mode, check the appropriate radio button in the ‘Show Length As’ box.

Show Length As <input checked="" type="radio"/> Inches <input type="radio"/> Feet, Inches	#	Time
	3	9/21/2018 2:04:55 PM
	4	9/21/2018 2:05:02 PM
	5	9/21/2018 2:05:36 PM
	6	9/21/2018 2:05:57 PM
	7	9/21/2018 2:06:01 PM

Channels Display Mode – The Channels selection allows you view the Per Vehicle Records on a lane by lane or direction by direction basis. This can be helpful when doing data analysis. For example, if you have collected data for two lanes of traffic (channel 1 and channel 2) you may want to see the results for just lane one. By unchecking Channel 2 you can do just that.

Channels <input checked="" type="checkbox"/> Channel 1, A to B <input checked="" type="checkbox"/> Channel 2, B to A	#	Time
	8	9/21/2018 2:06:13 PM
	9	9/21/2018 2:06:19 PM
	10	9/21/2018 2:06:28 PM
	11	9/21/2018 2:06:37 PM
	12	9/21/2018 2:06:51 PM

Set Analysis Parameters

While viewing the data for individual vehicles can be useful in some circumstances, for reporting purposes you will typically want to aggregate the results into a more comprehensive group. This is done using the analysis parameters found on the left side of the screen.

Select Interval Length – this field allows you to select the time intervals you want the data to be analyzed into. The options are 1, 5, 15, 30 and 60 minutes. Of these, 15 and 60 minutes are the most commonly used.

Select Interval Length:	60 minutes
-------------------------	------------

Select Time Frame – this field allows you choose a specific range of days or time to process. These fields default to the actual start and end date and times of the data. The *Reset Times* button can be used to restore the default times if they have been changed.

Select Time Frame		
From:	9/21/2018 3:00:00 PM	Reset Times
To:	10/5/2018 11:59:59 AM	

Select Report Type – this field allows you to choose what type of information you want to analyze the data for. The *Across the Top* setting is used to make the selection. If you are processing data that was originally from Axle Time Stamps, your options are Volume, Class, Speed, Gap, Length, and Following Distance. If you are processing data that has been collected in a radar recorder, your options are Volume, Speed, Length and Gap.

Select Report Type	
Across the Top:	Volume
Down the Side:	Interval

When you select any type of data other than volume, you will be prompted to select a scheme to use for the analysis. The scheme is a preset format of ranges (or bins) that the data will be sorted into. Additional schemes can be created using the Scheme Editor.

The *Down the Side* setting should normally be left with the default setting of Next Interval. This provides a time-based report. However, the other options available can be used to create a Matrix report, such as analyzing speeds by vehicle classifications.

Show Channel Options – this button allows you to view and change channel descriptions and how the channel data should be sorted. When you press this button, the Channel Options will appear.

The upper box allows you to edit the names that will be used when the data is binned.

The lower box allows you to combine channels together or ignore them completely.

Channel	Direction	Lane
1	Channel 1	A to B
2	Channel 2	B to A

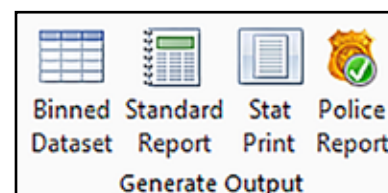
Put Channel	Into Direction	And Label It
1	1	Channel 1, A to B
2	2	Channel 2, B to A

Ribbon Selections

The ribbon selections on this tab include:

Generate Output

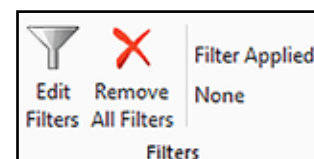
The Generate Output selections contain several item for selecting how you data should be combined and out for reporting.



- **Binned Dataset** – this option will combine your data using the analysis parameters you set and produce a binned tab of data in a spreadsheet format. This tab is discussed in detail in the next section of this manual.
- **Standard Report** – this option will combine your data sing the analysis parameters you set and take you directly to a report preview. Producing reports is discussed in detail in chapter 6.
- **Stat Print** – this option will take you directly to a statistical summary report of your data.
- **Police Report** – this option will take you to the Police Reports section of the program.

Filters

The Filters selections allow you to set filters on the data you are processing, see what filters are currently applied and remove and existing filters.



When you click on the Edit Filters button the Set Filters screen will appear.

The Filters tab allows you to exclude some of the vehicles in a study based on their characteristics. This feature can be very useful if you are looking to analyze only data that meets certain characteristics.

For example, if we wanted to analyze our speed data for only the speeds of free-flowing vehicles, we can set the Gap Range to a minimum of 5 seconds. This would eliminate all trailing vehicles in platoons where the lead vehicle might be artificially lowering speeds.

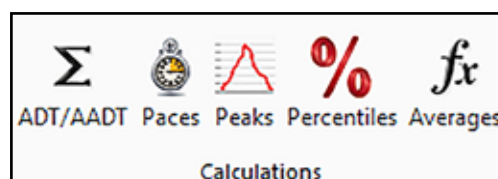
Which of the filters are available for use depends on the type of data that has been selected for Across the Top in the Setup tab.

To enable a filter, click the Enable Filter button next to the field you want to enter and the field will be enabled.

Calculations

The Calculations selections allow you to see a variety of statistical information related to your data.

- **ADT/AADT** – The ADT (Average Daily Traffic) and AADT (Annual Average Daily Traffic) volume is critical to many transportation planning decisions.



The *Select Days* field allows you to choose the exact portion of the data to use in calculating the ADT and AADT. The default value is for all the data, using the actual start and end date and times of the file. However, we recommend that the ADT and AADT be calculated from full days (24 hours) of data. If you have partial day data at the beginning or end of the file, we recommend changing the *Select Days* to use only full days. The options in this field are: All, None, Complete Days, Weekdays and Complete Weekdays.

Note that as you make changes in the *Select Days* fields, these changes are reflected in the calculations shown in the data grid at the bottom of the screen and in the *Summary: Using Averages and Factors* field.

The **Summary: Using Averages and Factors** field shows the results of the calculations based on the days selected.

Average Volume provides the average volume for all the days selected.

ADT provides the Average Daily Traffic by taking the Average Volume and multiplying it by any Daily Factor or User Factor.

AADT provides the Annual Average Daily Traffic by taking the ADT and multiplying it by any Seasonal Factor.

The *Show Correction Factors* button allows you to see the Correction Factor tables and modify them, if desired.

The *Summary: HPSJB Method (All Data, No Factors)* field shows the AADT calculation based on the Highway Policy Steven Jessberger-FHWA and Battelle (HPSJB) Method as described in FHWA Publication No. FHWA-PL-015-008, Assessing Roadway Traffic Count Duration and Frequency Impacts on Annual Average Daily Traffic (AADT) Estimation.

Note that the HPSJB Method is most commonly used with permanent station sites where there is year round data. The standard calculation is most commonly used for short term counts, like from road tube counters.

- **Paces** – Calculate Pace Speeds is a toolbar option available from the Per Vehicle Records tab by clicking on the Paces button. The Pace Speed represents the speed range in which the highest percentage of vehicles was recorded for a specific time interval.

The *Select Interval* field allows you to pick the time interval you want to use for the analysis. The options are: Entire Count, Day, Hour or 15 Minute.

The *Select Range Size* field allows you to pick the size of the speed range used for the analysis. Typically, 10 mph is used. If you change the range size you must click the Recalculate button to see the new values.

The *Classes Excluded From Pace Calculation* field allows you excluded specific classes of vehicles from the Pace Speed calculation. For example, if you want the pace values to be calculated from non-trucks, you can select to exclude tractor trailers from the calculation. To use this feature, click on the Select button you'll then see the Select Classes form. Uncheck any of the classes you want to exclude from the pace calculation then click Save and Exit to see the new calculation.

The Grid view shows the calculation of the pace speeds. The Time column listed the designated interval time. The Speed column shows the pace speed range. The Number column shows the number of vehicles in that range for the time period. The Percent column shows what percentage that number is of the overall data.

For example, if the pace speed is 26 to 35, then you could say 'More vehicles were traveling 26 to 35 mph than any other 10 mph speed range'. The Number in Pace gives the total number of vehicles that were in the pace speed range while the Percent in Pace gives what percentage this was of the overall data. The lower the percentage of vehicles in the pace speed range, the more widely dispersed the speeds in the study are.

• **Peaks** – The Calculate Peaks screen can be accessed by clicking the Peaks button on either the Per Vehicle Records tab or the Binned data tab. A peak is the specific time interval within a selected time when the most traffic was recorded.

Calculate Peaks

Peak Calculation

☒ Standard 15 Minute Interval (per TRB HCM)

☐ Custom Interval:

Classes Excluded From Peak Calculation

None

Combined Channel 1, A to B Channel 2, B to A

Date (* = partial day)	AM Peak Time	AM Volume	Largest 15 Minute Interval Time	Largest 15 Minute Interval Volume	AM Peak Hour Factor	PM Peak Time	PM Volume	Largest 15 Minute Interval Time	Largest 15 Minute Interval Volume	PM Peak Hour Factor
9/21/2018 *	No AM data...					04:09 - 05:08	306	04:30 - 04:44	94	0.814
9/22/2018	10:44 - 11:43	168	11:19 - 11:33	51	0.824	02:07 - 03:06	221	02:07 - 02:21	59	0.936
9/23/2018	11:00 - 11:59	112	11:43 - 11:57	38	0.737	12:00 - 12:59	176	12:24 - 12:38	55	0.800
9/24/2018	07:25 - 08:24	257	07:41 - 07:55	89	0.722	04:10 - 05:09	300	04:26 - 04:40	87	0.862
9/25/2018	07:28 - 08:27	236	07:58 - 08:12	70	0.843	04:30 - 05:29	273	04:31 - 04:45	87	0.784
9/26/2018	07:13 - 08:12	246	07:48 - 08:02	78	0.788	04:21 - 05:20	278	04:21 - 04:35	86	0.808
9/27/2018	07:31 - 08:30	235	07:48 - 08:02	78	0.753	04:27 - 05:26	316	04:54 - 05:08	96	0.823
9/28/2018	07:16 - 08:15	234	07:49 - 08:03	83	0.705	04:29 - 05:28	295	05:03 - 05:17	90	0.819
9/29/2018	11:00 - 11:59	176	11:00 - 11:14	49	0.898	02:26 - 03:25	191	02:55 - 03:09	58	0.823
9/30/2018	11:00 - 11:59	150	11:44 - 11:58	52	0.721	12:27 - 01:26	183	01:07 - 01:21	56	0.817

The *Peak Calculation* field allows you to decide if the calculation should be for a Standard 15 Minute Interval or a Custom Interval.

The *Classes Excluded From Peak Calculation* field allows you to exclude certain classes from the Peak Calculation. To do this, click the Select button and the Select Classes screen will appear.

The spreadsheet on the lower portion of the screen shows the calculated peak information including the following information: Date, AM Peak Time, AM Volume, Largest 15 Minute Interval Time (AM), Largest 15 Minute Interval Volume (AM), AM Peak Hour Factor, PM Peak Time, PM Volume, Largest 15 Minute Interval Time (PM), Largest 15 Minute Interval Volume (PM) and PM Peak Hour Factor.

This information can be viewed by individual directions or combined directions.

- **Percentiles** – The Calculate Speed Percentiles screen can be accessed by clicking the Percentiles button on either the Per Vehicle Records tab or the Binned data tab for Speed data.

Time	5th	10th	15th	20th	25th	30th	35th
2:00 PM	24.6	27.2	29.1	30.5	31.4	32.4	33.1
3:00 PM	26.8	29.0	31.5	33.4	34.2	35.0	35.7
4:00 PM	31.8	33.9	35.3	36.3	37.3	37.9	38.7
5:00 PM	33.1	36.2	37.1	37.8	38.6	39.4	39.7
6:00 PM	31.1	33.1	34.5	36.0	37.1	37.9	38.4
7:00 PM	31.8	34.1	35.4	36.5	37.1	37.8	38.7
8:00 PM	31.5	33.3	34.3	36.3	36.8	37.2	38.2
9:00 PM	32.2	33.5	35.2	36.1	36.7	37.6	38.2
10:00 PM	29.9	31.5	34.1	35.9	36.1	36.3	37.0
11:00 PM	22.6	27.8	31.2	33.2	34.2	35.5	36.5
9/22/2018	35.0	35.2	35.8	36.9	37.0	38.1	39.3

A percentile speed is the speed below which the stated percent of vehicles traveled. This is the same as saying “85 percent of the traffic was traveling at this speed or slower”. The 85th percentile is often used to measure the maximum reasonable speed for the traffic, while the 15th is often used for the minimum reasonable speed.

The *Show* field allows you to select which percentiles you want to see, from 5 to 100 in 5 percentile increments.

The *Select Interval Length* field allows you to determine the time period you want use for viewing the percentiles. The options are:

- Hour
- 1/2 Day (AM-PM)
- Day
- All

The spreadsheet on the lower portion of the screen shows the calculated percentile information.

• **Averages** – The Class Averages screen can be accessed by clicking the *Averages* button on the Per Vehicle Records tab. This screen shows you a variety of information related to the classification of vehicles in your data.

The Class column on the far left shows the class scheme being used to classify the data. For each vehicle class the following information is presented: Volume, Average Speed, Average Wheelbase and Average Gap.

This information can be printed by using the *Print* button.

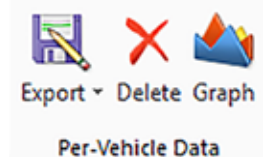
Note that the class average data will only be available for Per Vehicle records produced from axle time stamps collected with a TRAX counter. Radar recorders do not provide this information.

Class	Volume	Avg. Speed	Avg. Wheelbase	Avg. Gap
Unclassified	83	29.2	95.6	20.1
1 - Motorcycles	303	26.3	49.5	75.2
2 - Cars & Trailers	24,855	40.7	111.2	69.7
3 - 2 Axle Long	6,852	40.6	130.2	61.3
4 - Buses	275	35.5	278.7	53.7
5 - 2 Axle 6 Tire	2,652	40.1	161.1	57.5
6 - 3 Axle Single	91	34.6	246.2	72.3
7 - 4 Axle Single	2	38.8	284.0	86.4
8 - <5 Axl Double	373	35.9	500.1	81.2
9 - 5 Axle Double	161	32.9	640.6	65.1
10 - >6 Axl Double	1	29.5	613.0	48.4
11 - <6 Axl Multi	0	-	-	-
12 - 6 Axle Multi	0	-	-	-
13 - >6 Axl Multi	0	-	-	-

Print Close

Per Vehicle Data

The Per Vehicle selections allow you to perform several functions related to the individual vehicle records.



• **Export** – this function allows you to export the per vehicle records into a variety of formats. The formats include: Excel (XLSX), Excel (XLS), CSV, GeoCount & TMG V2.

If you are exporting to either of the Excel formats or the CSV format, the Export Vehicle Records wizard will appear.

The first screen is Select Vehicles to Export. This allows you to either export all of the vehicles or some of the vehicles. If you select All of the Vehicles, when you click Next you'll be taken directly to the Summary screen (see below). If you select Some of the Vehicles, when you click Next you'll be taken to the First Vehicle to Export screen.

On the First Vehicle to export screen you are given two options on when to start the export. You can either pick a specific date and time to start the export (Start with Vehicle Closest To:) or pick a specific vehicle number to start the export.

Export Vehicle Records

Select Vehicles to Export

☐ Export All of the Vehicles (35,648 Vehicles)

☒ Export Some of the Vehicles

Next

Once you have made your selection, click Next and you'll be taken to the Last Vehicle to Export screen.

The image shows two sequential screenshots of the 'Export Vehicle Records' dialog box. The left window is titled 'First Vehicle to Export' and has the 'Start with Vehicle Closest To' option selected, with a date of 9/21/2018 and time of 2:04:26 PM. Below this, there is a 'Reset To Start of Count' button and an option to 'Start with Vehicle Number' set to 1. The right window is titled 'Last Vehicle to Export' and has the 'End with Vehicle Closest To' option selected, with a date of 10/5/2018 and time of 12:12:25 PM. Below this, there are options for 'End with Vehicle Number' (35,648), 'Number of Vehicles to Export' (1), and 'Number of Days to Export' (1). A red arrow points from the 'Next' button in the left window to the 'Next' button in the right window.

On the Last Vehicle to Export screen you are given 5 separate options on where to end the export: End with the Vehicle Closest To, End with Vehicle Number, Number of Vehicles to Export, Number of Days to Export, From First Selected Vehicle to the End.

The blue text below these fields will show you the first vehicle that will be exported and the last vehicle that will be exported, based on your selections.

The green text below that shows the total amount of vehicles that will be exported.

If everything looks OK, click the Next button and you will see the Summary screen.

The Summary screen shows the first vehicle that will be exported, the last vehicle and the total number of vehicles. It also shows the categories of data that will be exported for the file in question.

For data files that contain axle time stamps as well as Per Vehicle records, the categories of data can include: Class, Class Spec, Speed, Gap, Length, Wheelbase, Headway, Following Distance, Axle Spacing

For data file that only contain Per Vehicle records, the categories of data can include: Speed, Gap, Length

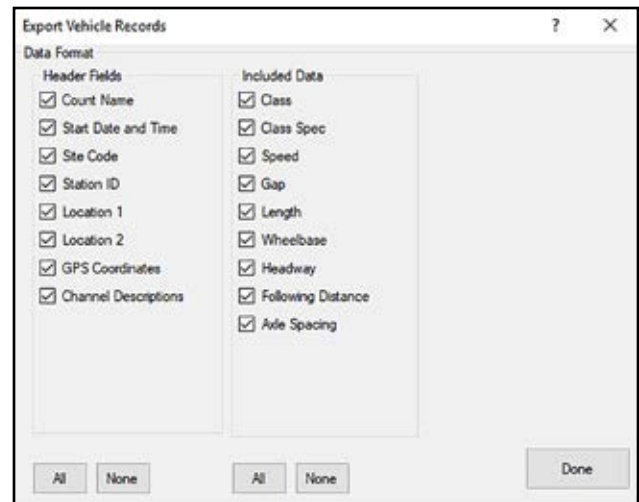
If you wish to modify what categories of data are being exported, click the Change button and you'll see the Data Format screen.

The image shows the 'Summary' screen of the 'Export Vehicle Records' dialog box. It displays the first vehicle (1 - 9/21/2018 2:04 PM), last vehicle (35,648 - 10/5/2018 12:12 PM), and total number of vehicles (35,648). It also shows the included data categories (Class, Class Spec, Speed, Gap, Length, Wheelbase, Headway, Following Distance, Axle Spacing) and the export folder (\\jamar-dc01\data\users\lmoerholt) and file name (sample file - trax-Vehicles.xlsx). There is a 'Change' button next to the included data categories and a 'Change Folder or File Name' button next to the export folder and file name. A 'Remember my folder selection for next time' checkbox is also present. The 'Export' button is highlighted in green.

Using the Data Format screen you can select which Header Fields you want to include in the export as well as which data categories. Once you have made your selections, click Done to return to the Summary screen.

At the bottom of the Summary screen it shows the name that will be used for the exported file as well as the path to which it will be exported. If you want to change either the name or path, click the Change Folder or File Name button.

When you ready to complete the export, click the *Export* button and the file will be created.



- Delete – this function allows you to delete the Per Vehicle Records tab from your data file.
- Graph – this function allows you to create graphs of your Per Vehicle Records.

Working with Binned Data

This section deals with the Binned Data tab. Data processed from the Per Vehicle Records tab will create binned data tabs. Note that the format of the data will vary slightly based on the type of data (volume, speed, class, etc) but the basic functions of the tab are the same for each data type.

If you would like to follow along with the details of this section yourself, open the file 'sample file - trax' then click the Process button to create the Per Vehicle Records tab, then click the Binned Dataset button to create the Binned tab.

The Binned tab is used to show the data in your file on a time interval basis sorted into predefined categories, or bins.

	>0 to 15	>15 to 20	>20 to 25	>25 to 30	>30 to 35	>35 to 40	>40 to 45	>45 to 50	>50 to 55	>55 to 60	>60 to 65	>65 to 70	>70	Total
3:00 PM	2	0	5	13	27	35	28	6	3	0	0	0	1	120
4:00 PM	0	1	0	0	18	49	59	19	5	0	0	0	0	152
5:00 PM	2	0	0	3	5	37	64	20	2	0	0	0	0	133
6:00 PM	0	1	1	2	17	31	23	8	5	0	0	0	0	88
7:00 PM	0	0	0	1	10	33	34	3	2	0	1	0	0	82
8:00 PM	1	0	1	0	9	17	19	3	2	0	0	0	0	52
9:00 PM	0	0	0	3	4	22	16	2	4	0	0	0	0	51
10:00 PM	0	0	0	0	6	13	13	4	1	0	0	0	0	37
11:00 PM	0	0	1	0	1	1	5	1	0	0	0	0	0	9
9/22/2018	0	0	0	0	1	6	7	1	0	0	0	0	0	15
1:00 AM	0	0	0	1	4	3	3	1	0	0	0	0	0	12
2:00 AM	0	0	0	0	0	4	2	0	0	0	0	0	0	6
3:00 AM	0	0	0	0	3	1	0	0	0	0	0	0	0	4
4:00 AM	0	0	0	0	0	5	0	0	0	0	0	0	0	5
5:00 AM	0	0	0	0	1	3	2	0	0	0	0	0	0	6
6:00 AM	0	0	0	0	5	6	4	3	2	1	0	0	0	31
7:00 AM	0	0	1	2	0	6	9	3	0	0	0	0	0	21
8:00 AM	0	0	0	0	2	10	12	9	2	0	0	0	0	35
9:00 AM	0	0	0	1	3	18	27	12	2	0	0	0	0	63
10:00 AM	0	0	0	0	6	15	25	9	0	0	0	0	0	55
11:00 AM	0	0	1	2	11	26	30	7	0	0	0	0	0	79
12:00 PM	0	0	0	6	3	25	33	12	4	0	0	0	0	83
1:00 PM	0	0	0	2	8	44	35	8	4	1	0	0	0	102
2:00 PM	0	0	0	0	21	35	36	17	2	0	0	0	0	111
3:00 PM	0	0	0	6	9	34	31	8	0	0	0	0	0	88
4:00 PM	1	0	0	0	16	25	38	14	3	1	0	0	0	96
5:00 PM	0	0	0	0	16	27	26	12	4	0	0	0	0	85
6:00 PM	0	0	0	5	13	31	26	6	4	0	0	0	0	85
7:00 PM	0	1	2	0	8	12	5	2	0	0	0	0	0	30

The lower section of the screen shows the data in a familiar spreadsheet format. Like any spreadsheet, data can be edited directly on the spreadsheet or moved from file to file through standard Cut, Copy and Paste commands.

Ribbon Selections

The ribbon selections on this tab include:



- **Across The Top** – this shows what scheme was used in binning the data. If you would like to change this, select a new scheme from the drop down list and the data will be rebinned into the new scheme. Note that this only applies if the file contains Per Vehicle records. If the file only contains binned data, the scheme cannot be changed.
- **Down the Side** – this will be set as Next Interval unless a matrix report has been created.
- **Interval Length** – this shows what interval was used in binning the data. If you would like to change

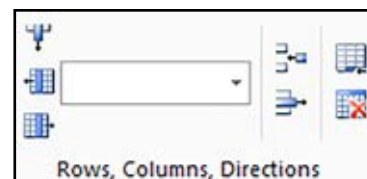
this, select a new interval from the drop down list and the data will be rebinned using the new scheme. Note that if the file only contains binned data and does not also have Per Vehicle records, you can only select a time interval larger than the current one.

- **From & To Date & Time** – these field allows you chose a specific range of days or time for the binned data.

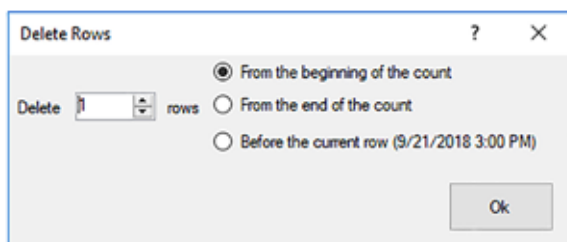
From	9/21/2018	3:00:00 PM
To	10/5/2018	11:59:59 AM

Rows, Columns, Directions

- **Insert Rows & Delete Rows** – The Insert Rows or Delete Rows screen is accessed by clicking on either the *Insert Row* icon  or *Delete Row* icon. 



Rows, Columns, Directions

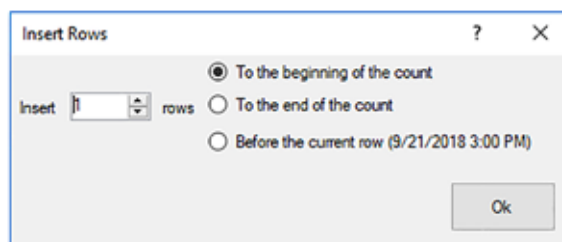


Delete Rows

☒ From the beginning of the count
☐ From the end of the count
☐ Before the current row (9/21/2018 3:00 PM)

Delete rows

Ok



Insert Rows



☒ To the beginning of the count
☐ To the end of the count
☐ Before the current row (9/21/2018 3:00 PM)

Insert rows

Ok


These functions can be used to add or subtract rows of data to a file. Enter the amount of intervals you would like to add or delete, then select whether to do this from the beginning of the study, the end of the study, or before the currently selected interval.

Note that adding or deleting rows of data from a file will trigger the Data Verified lock.

- **Insert New Columns** – the Insert New Column screen is accessed by clicking on either the *Insert Column to the Right* icon  or the *Insert Column to the Left* icon. 

When adding a column, you are prompted to provide a new name for the column.

Note that adding a column of data to a file will trigger the Data Verified lock. Also note that not all binned data formats allow you to insert columns.

- **Delete Columns** – To delete a column of data from a binned dataset, click the *Delete the currently selected column* icon. 

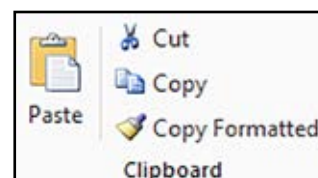
Note that adding a column of data to a file will trigger the Data Verified lock. Also note that not all binned data formats allow you to insert columns.

- **Add a Direction & Remove Current Direction** – non-volume binned data sets (speed, class, gap, etc.) will have the option to add a direction by clicking the *Add a Direction* icon. You will be prompted to supply a name for the new direction and also determine where it should be placed in correlation to the other directions.

Any binned data sets with more than one direction will also have the option to delete a direction by clicking on the Remove current direction icon.

Clipboard

The Clipboard selections allows you to perform standard spreadsheet functions such as Cut, Copy and paste. The *Copy Formatted* selection allows you to copy data with the column and row titles information included and the data in their proper row/column. This can be used to move data to other Windows programs, such as Excel, in a more complete format than just copying the data.

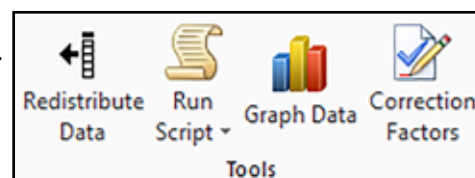


To copy all of the data on the screen, click on the heading box at the top left and the data will be highlighted. Next, click the Copy Formatted icon. This will send the data to the Windows clipboard. You can then paste this data into your other application.

Tools

• **Run Script** - this selection allows you to run scripts on your data. Scripts can be created using the Script Editor.

• **Graph Data** – this selection allows you to create graphs of your binned data set.



• **Correction Factors** – this selection allows you to apply seasonal, daily or user correction factors to your data. Factor tables can be set up in the Preferences, as described in Chapter 3.

• **Redistribute Data** – this selection allow you move classification results from one specific class to another. It is most commonly used to redistribute 'unclassified' vehicles (vehicles that were detected, but not able to be sorted into one of the predefined classification bins) into the standard class bins.

Note that this Tool is only available when working with binned classification data.

When you click on the Redistribute Data icon, the Redistribution Wizard screen will appear.

 A screenshot of the 'Redistribute Data' dialog box. It has a title bar with a question mark and a close button. The dialog is divided into several sections:

- Select Bin:** A dropdown menu showing 'Unclassed'. Below it, text says 'Unclassed is 0.2% of the total.'
- Options:** Three radio buttons: 'Move all into one bin' (unselected), 'Use Count's Distribution' (selected), and 'Use percentage table below' (unselected).
- Redistribution Table:** A table with 14 columns representing different vehicle classifications and one row for the 'Unclassed' bin. The values in the row are: 0.9, 69.9, 19.3, 0.8, 7.5, 0.3, 0.0, 1.0, 0.5, 0.0, 0.0, 0.0, 0.0, 0.0.
- Buttons:** Two buttons at the bottom left: 'Reset To Zeros' and 'Reset To Count'.
- Footer:** A checkbox 'Delete bin after redistributing data' (checked), and 'OK' and 'Cancel' buttons.

Unclassed	Motorcycl	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
0.9	69.9	19.3	0.8	7.5	0.3	0.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0

First, using the *Select Bin* field, select the bin that you want to be redistributed. This is typically the Un-classified bin. When you select a bin, the program will show you what percentage that bin makes up of the overall data.

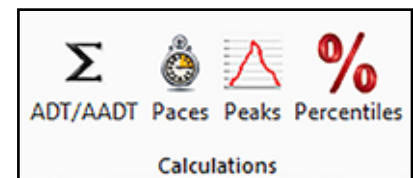
Once you've selected the bin you want to redistribute, the Options field will appear. The Options are:

- **Move All Into One Bin** - If this option is selected, you will see the *Move the data into:* field appear. This is used to select which bin the data should be moved into. The program will automatically redistribute all the data from the bin you selected in Step 1 into the new bin.
- **Use Count's Distribution** - If this option is selected, you will see the Redistribution Table appear. This shows the percentage of data in each bin. With this option, the program will automatically redistribute all the data from the bin you selected in Step 1 into the other bins based strictly on the Redistribution Table. If you would like to modify these percentages, use the next option on the list.
- **Use Percentage Table Below** - If this option is selected, you will see the Redistribution Table appear. This shows the percentage of data in each bin.

The *Delete bin after redistributing* data check box allows you to automatically remove the bin from which you are redistributing the data.

Calculations

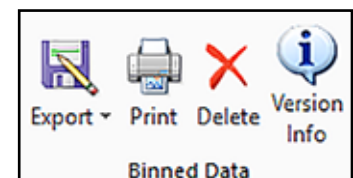
The selections for Calculations include ADT/AADT, Paces, Peaks and Percentiles. Which of these are available depends on the type of binned data you are working with. These calculations are discussed in detail on pages 5.12 to 5.16



Binned Data

The Binned Data selections allow you to perform several functions related to the data set.

- **Export** – this function allows you to export the binned data into a variety of formats. The formats include: Binned SNJ, Excel, CSV, NY DOT, Anchorage, Peek/Streeter PRN, TMG, VTEL, PRHTA.
- **Print** – this selection will take you directly to a report preview. Producing reports is discussed in detail in chapter 6.
- **Delete** – this selection allows you to delete the Binned Data tab from your data file.
- **Version Info** – this selection provides details of some of the settings used to produce the binned data set, including Sensor Layout, Tube Spacing, Classification Scheme, and more. This information can be useful if you are producing binned data sets for the same type of data but with different permutations.



Chapter 6

Producing Reports



Producing a Report

Once you have analyzed your data, you are most likely going to want to produce a report containing the data.

There are several ways to produce reports in STARnext:

- From the Binned Data tab, click on the Print icon.
- From the Per Vehicle Records tab, click on the Standard Report icon.
- From the Per Vehicle Records tab, click on the Stat Print icon.
- From the Per Vehicle Records tab, click on the Police Reports icon and select a report option.

All these report functions follow a similar format. Producing a report from the Binned Data tab is discussed below.

To produce a report from the Binned Data tab, click on the *Print* icon and the Print Preview screen will appear.

Print sample file - trax-Speed Report

Home Header/Footer Photos Overlap Voltage/Temp Correction Factors

Print Save As Page Setup Report Designer

File Binned Layout Navigation Zoom Close

Options

Select Time Frame

From: 9/21/2018 3:00 PM

To: 10/ 5/2018 11:00 AM

Reset Times

Misc.

Speed Limit: 45 MPH

Channels

☒ Channel 1, A

☒ Channel 2, B

☐ Print Separately

☐ Combine into One Report

☒ Print Separately and Combined

This report is being generated from the binned data set. Some statistics (such as percentiles and pace) may not be as accurate as those on a report generated from the Per Vehicle table.

Regen

Superior Police Department
100 Main St
Anytown, PA USA

Site Code: 35432
Location 1: 40.262480
Longitude: -75.287132
Direction: Channel 1, A to B

Time	0-15	>15	>20	>25	>30	>35	>40	>45	>50	>55	>60	>65	>70	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	2	0	5	13	27	35	28	8	3	0	0	0	1	120
4:00	0	1	1	0	18	49	59	19	5	0	0	0	0	152
5:00	2	0	0	3	5	37	84	20	2	0	0	0	0	133
6:00	0	1	1	2	17	31	23	8	5	0	0	0	0	88
7:00	0	0	0	1	10	31	34	3	2	0	1	0	0	82
8:00	1	0	1	0	9	17	19	3	2	0	0	0	0	52
9:00	0	0	0	3	4	22	10	2	4	0	0	0	0	51
10:00	0	0	0	0	6	13	13	4	1	0	0	0	0	37
11:00	0	0	1	0	1	1	5	1	0	0	0	0	0	9
Total	5	2	9	22	97	236	291	68	24	0	1	0	1	724

The lower right portion of the screen shows a preview of the report.

The lower left contains various options related to the report:

• **Select Time Frame** – this selection allows you to pick the time period for the report. If you wanted to print just a specific day (or other block of data) in a file, you would change the times here to reflect the period you wanted.

Select Time Frame

From: 9/21/2018 3:00 PM

To: 10/ 5/2018 11:00 AM

Reset Times

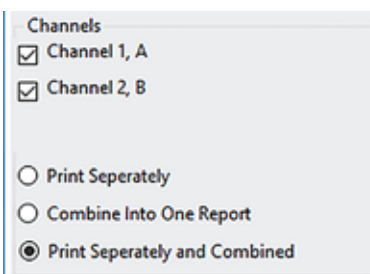
• **Misc.** – this selection contains the *Speed Limit* option. This value is used for statistics on speed reports. For the Speed Limit, enter either the posted speed limit or any value you would like to know the percentage of vehicle above.

Misc.

Speed Limit: 45 MPH

• **Channels** – this selection allows you to pick the channels of data (lanes or directions) to include on the report. The default selection is to print all the data, but you can deselect a channel by unchecking the box next to the channel you want to remove.

Below the check boxes, the radio buttons allow you to select whether to print the channels separately, combined, or both separately and combined.



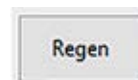
• **Binned Report Warning** – Note the message that is also shown in this section:

This report is being generated from the binned data set. Some statistics (such as percentiles and pace) may not be as accurate as those on a report generated from the per Vehicle table.

This report is being generated from the binned data set. Some statistics (such as percentiles and pace) may not be as accurate as those on a report generated from the Per Vehicle table.

Once the data is binned, the reports generated from the binned data will lose a certain amount of resolution compared to individual vehicle records. In most cases, this difference is statistically insignificant, but if you require the highest degree of precision you can generate reports directly from the Per Vehicle records by click on the *Standard Reports* icon on that tab.

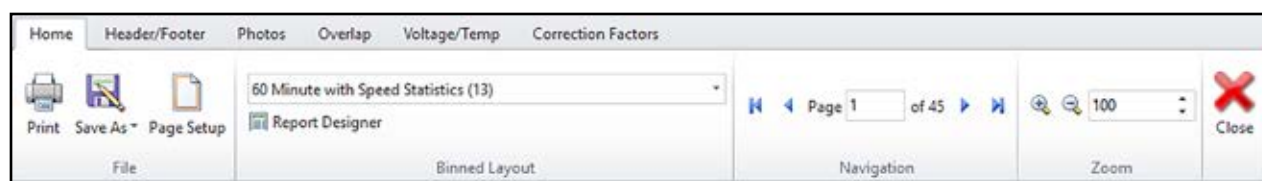
• **Regen** - the Regen button can be used to regenerate the report preview any time you make changes to the parameters of the report.



Ribbon Selections

The ribbon selections on this screen are in a tabular format and include Home, Header/Footer, Photos, Overlap, Voltage/Temp and Correction Factors.

Home Tab



The

Home tab contains a number of options related to producing your report.

- **Print** – this selection will send the currently previewed report to the printer.
- **Save As** – this selection allows you to save the report into an electronic format, including PDF, Excel and RTF.
- **Page Setup** – this selection allows you to adjust several formatting options, including paper size and margins.
- **Binned Layout** – this selection allows you to choose which report you want to produce. Click on the

down arrow in this field to see the list of available reports. Each report will present the data in a different manner. The type of report you decide to use is a matter of personal preference.

Note that you can create your own report formats, or modify existing ones, using the Report Designer.

• **Navigation & Zoom** – the navigation and zoom selections allow you view the different pages of your reports and zoom in or out on the pages.

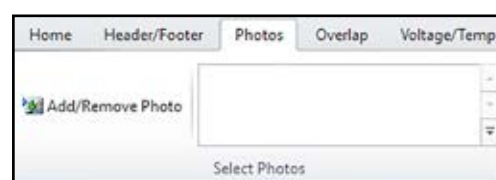
Header/Footer Tab

The Header/Footer tab allows you to select the titles and comments to be used on the report, as well as page number format and position.



Photos Tab

The Photos tab allows you to manage the photos that have been added to the report.

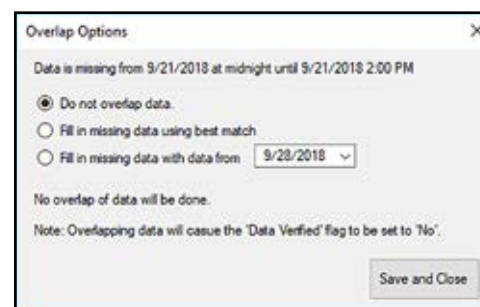


Overlap Tab

The Overlap tab allows you to move data from one portion of the report to another to fill in any missing time periods.

The options for Overlap are:

- *Do not overlap data*
- *Fill in missing data using best match*
- *Fill in missing data with data from*

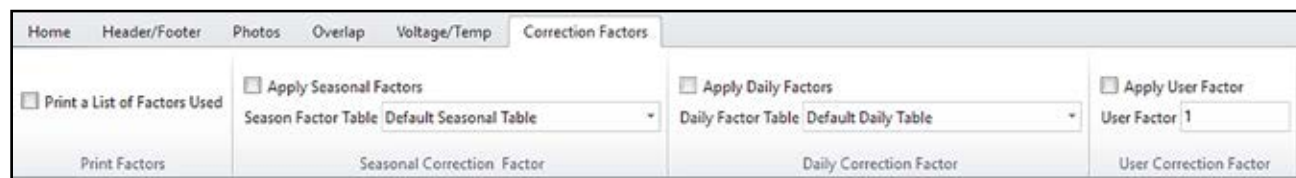


Voltage /Temp Tab

The Voltage/Temp tab allows you to select to print either the Voltage Graph, Temperature Graph or both.

Correction Factors Tab

The Correction Factors tab allows you to factor the data in the report only, it will not change the data in the count file itself.



You can choose to apply a seasonal factor, daily factor, or user factor. When selecting a seasonal or daily factor, you can choose from among any of the factor tables that you have setup in the Preferences. You can also choose to either print, or not print, the factor being used on the report.

Chapter 7

Troubleshooting

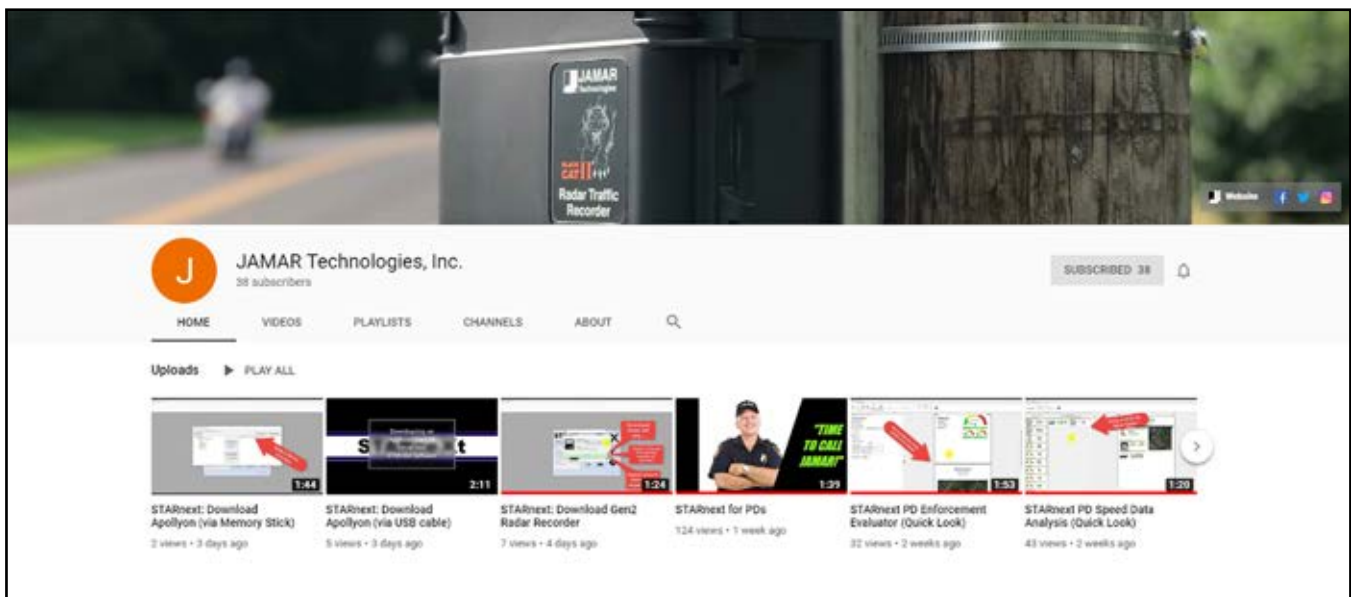


Software Updates

If you are having any trouble using your copy of STARnext, the first thing we recommend you check is your version number. Updates to the program, which contain new features and bug fixes, are issued periodically and posted on our web site at www.jamartech.com. To check the version of your program, select About from the Help menu.

Video Tutorials

If you are new to STARnext and are having trouble understanding the various ins and outs of the program, an excellent place to start is the video tutorial demos that can be found on the JAMAR You Tube Channel. Go to You Tube and search for 'JAMAR Technologies'.



Error Messages

STARnext is written in Visual Basic .NET and makes use of the .NET Framework. Any unexpected problems that occur in the program will usually generate a Unhandled Exception Error. Should you encounter one of these, make a note of the full error message (click the Details button) then check the STARnext support web page at www.jamartech.com/STARnextsupport.html to see if the error is a known issue.

If you cannot find an answer to your problem online, contact JAMAR support. They will request the details of the error you encountered.

